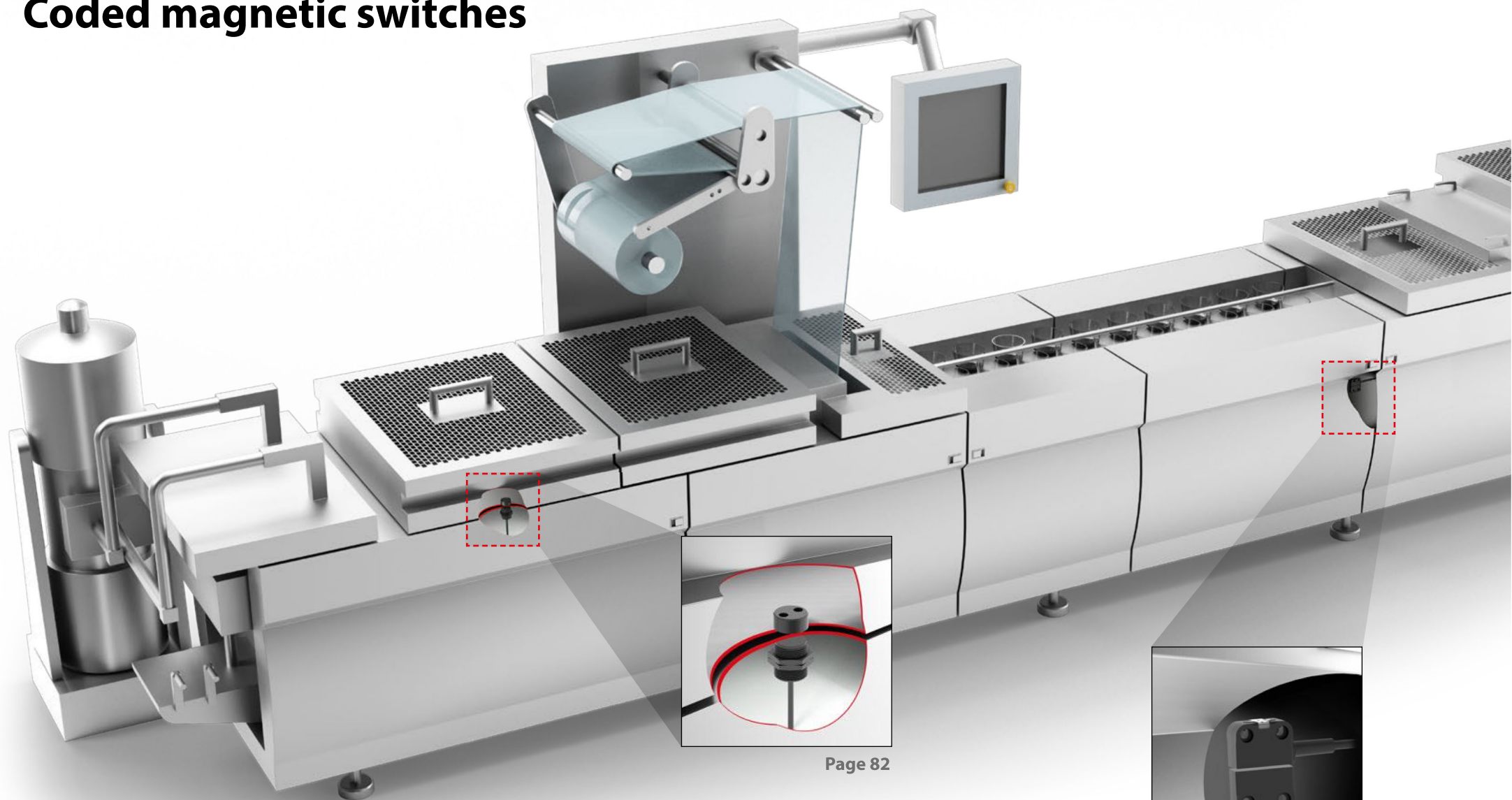


Safety switches type 4

Coded magnetic switches



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Especially for the monitoring of protective devices

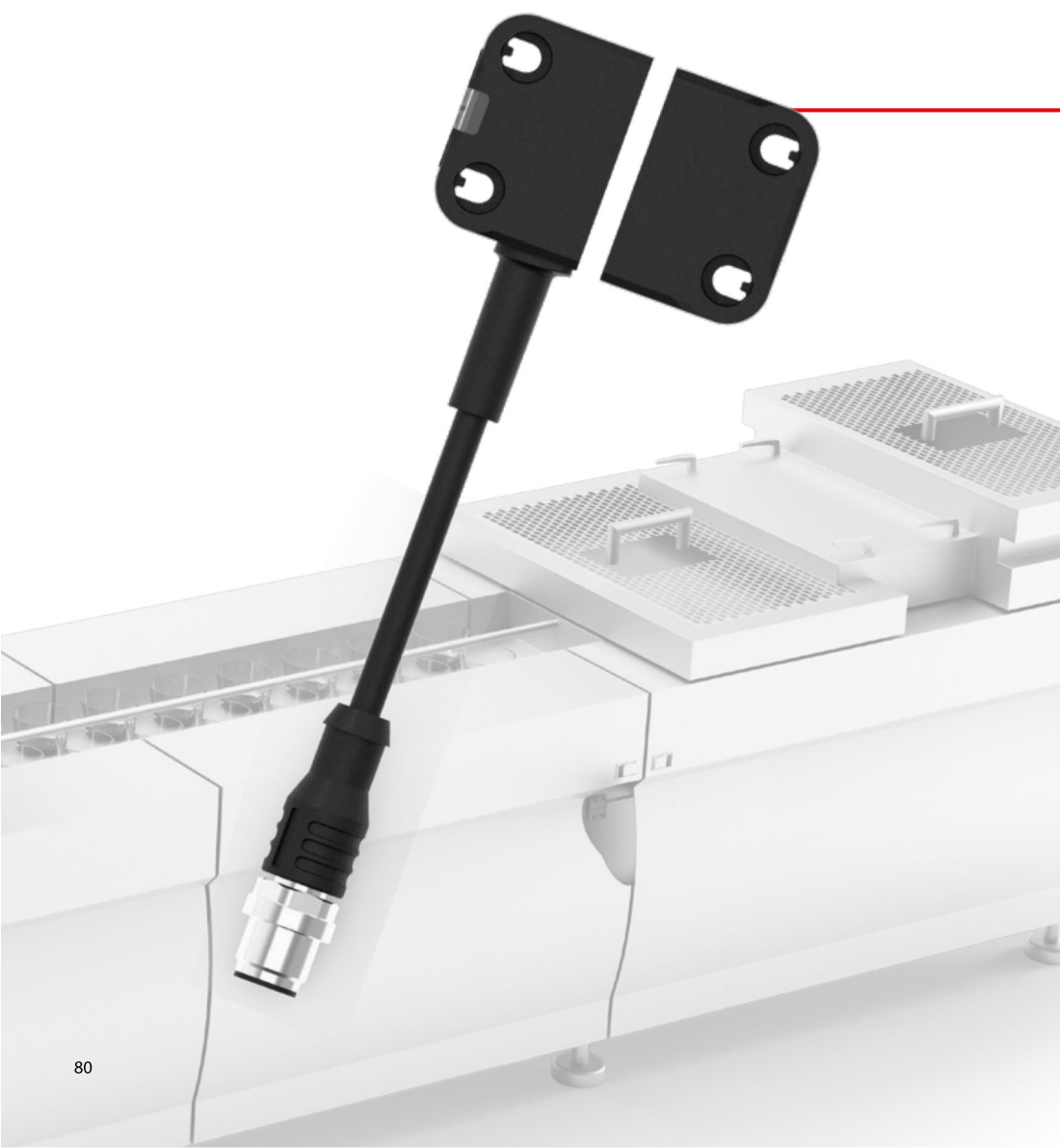
Safety switches are usually used for the safety-related monitoring of doors, hoods and flaps. But due to other requirements, such as environmental conditions or the complexity of the application, it may be necessary to switch from a mechanical safety switch to another technology, such as coded magnetic switches.

Our magnetic switches are sensors with a two-channel output. In order to meet the requirements of EN 14119 and EN 60947-5-3 for a type 4 interlocking device, this output must be connected to a suitable evaluation device. To make it more difficult to manipulate the safe sensor, a suitable coded actuator must be used to actuate the sensor.

BERNSTEIN AG offers a comprehensive range of coded magnetic switches.

The five different designs offer optimum integration in applications in which, for example, position sensing on doors, flaps and hoods must be implemented.

Magnetic coded safety sensor MAK-54



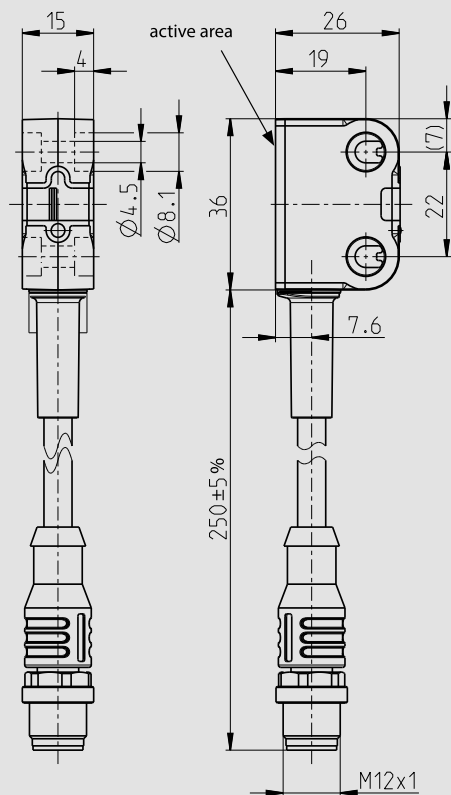
MANY BENEFITS AT A GLANCE

- Modern enclosure design, screw-on compatible with the SRF
- Compact
- No external moving parts
- Low susceptibility to non-metallic dusts and liquids
- Easy to clean
- Low coding according to ISO 14119
- Conditional tolerance of misalignment of the guard

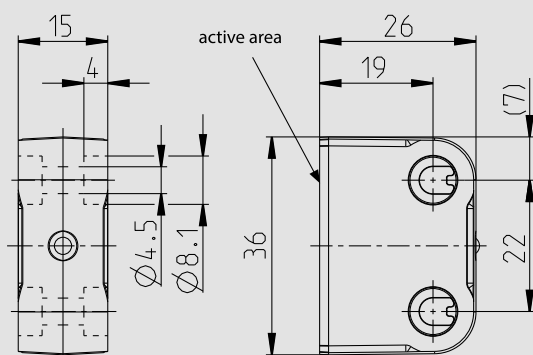
Technical data

maximum switching voltage	maximum switching current	maximum switching power	Temperature with movable cable	Temperature with fixed cable	Pro-tection class
30 V DC	0,08 A	0,25 W	– 5 °C up to +70 °C	– 25 °C up to +70 °C	IP69
Coding of all sensors	Low coding level according to ISO 14119				

MAK 54 Sensor



MAK 54 Magnet



Sensors

Article number	Designation	Safety contacts	Signalling contacts	LED	Connection
6490654359	MAK-5426-C-0.25-M12	2NO	–	without	With M12 Pigtail
6490654360	MAK-5436-C-0.25-M12-M	2NO	1NO	without	With M12 Pigtail
6490654385	MAK-5426-CD-0.25-M12	1NC / 1NO	–	without	With M12 Pigtail
6490654386	MAK-5436-CD-0.25-M12-M	1NC / 1NO	1NO	without	With M12 Pigtail
6490654361	MAK-5426-C-0.25-M12-L	2NO	–	with	With M12 Pigtail
6490654362	MAK-5436-C-0.25-M12-LM	2NO	1NO	with	With M12 Pigtail
6490654387	MAK-5426-CD-0.25-M12-L	1NC / 1NO	–	with	With M12 Pigtail
6490654388	MAK-5436-CD-0.25-M12-LM	1NC / 1NO	1NO	with	With M12 Pigtail
6490654363	MAK-5426-C-2	2 NO	–	without	With 2 metres of open-ended cable
6490654364	MAK-5436-C-2-M	2NO	1NO	without	With 2 metres of open-ended cable
6490654389	MAK-5426-CD-2	1NC / 1NO	–	without	With 2 metres of open-ended cable
6490654390	MAK-5436-CD-2-M	1NC / 1NO	1NO	without	With 2 metres of open-ended cable
6490654365	MAK-5426-C-2-L	2NO	–	with	With 2 metres of open-ended cable
6490654366	MAK-5436-C-2-LM	2NO	1NO	with	With 2 metres of open-ended cable
6490654391	MAK-5426-CD-2-L	1NC / 1NO	–	with	With 2 metres of open-ended cable
6490654392	MAK-5436-CD-2-LM	1NC / 1NO	1NO	with	With 2 metres of open-ended cable

Other cable lengths available on request.



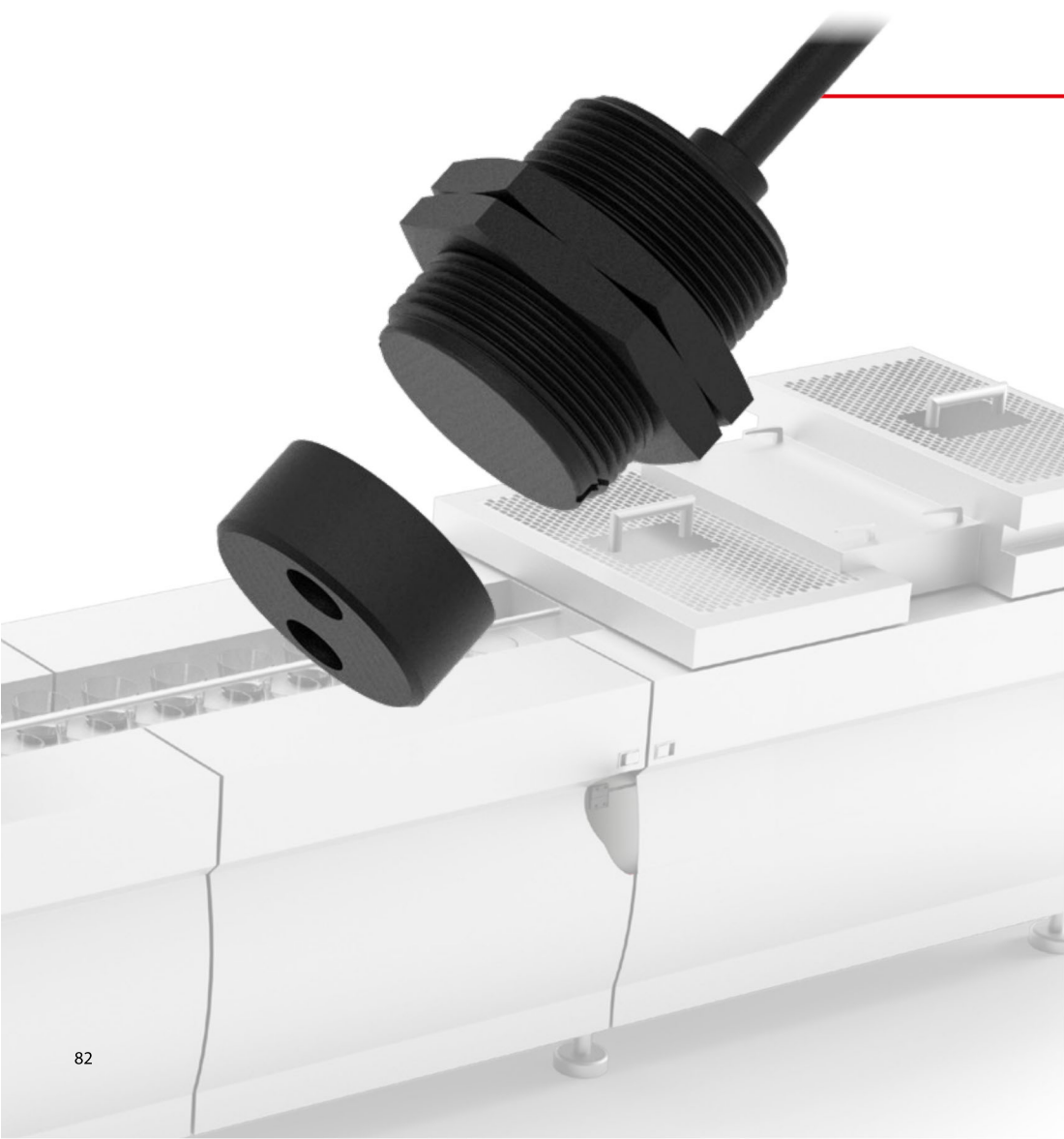
Magnet

Article number	Designation	S _{ao}	S _{ar}
6402054085	TK-54-CD/2	≥ 6 mm	≤ 15 mm

Options

- You will find single-ended and double-ended cordsets under accessories (from page 162)
- One-way screws for fastening in accordance with ISO 14119 can be found from page 172 onwards.

Magnetic coded safety sensor
MAK-53



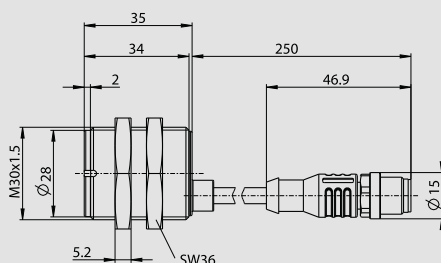
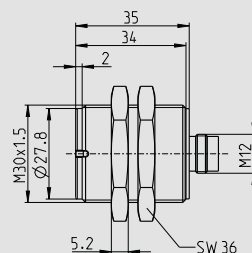
MANY BENEFITS AT A GLANCE

- Round design M30
- No external moving parts
- Low susceptibility to non-metallic dusts and liquids
- Easy to clean
- Low-coded

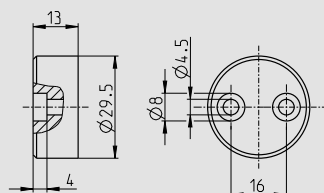
Technical data

maximum switching voltage	maximum switching current	maximum switching power	Temperature with movable cable	Temperature with fixed cable	Pro-tection class
30 V DC	0,08 A	0,25 W	– 5 °C up to +70 °C	– 25 °C up to +70 °C	IP67
Coding of all sensors	Low coding level according to ISO 14119				

MAK 53 Sensor



MAK 53 Magnet



Sensors

Article number	Designation	Safety contacts	Signalling contacts	LED	Connection
6490653401	MAK-5326-C-M12	2NO	–	without	with M12
6490653374	MAK-5326-CD-M12	1NC / 1NO	–	without	with M12
6490653404	MAK-5326-C-M12-L	2NO	–	with	with M12
6490653406	MAK-5326-CD-M12-L	1NC / 1NO	–	with	with M12
6490653377	MAK-5326-C-0.25-M12	2NO	–	without	With M12 Pigtail
6490653378	MAK-5336-C-0.25-M12-M	2NO	1NO	without	With M12 Pigtail
6490653375	MAK-5326-CD-0.25-M12	1NC / 1NO	–	without	With M12 Pigtail
6490653408	MAK-5336-CD-0.25-M12-M	1NC / 1NO	1NO	without	With M12 Pigtail
6490653409	MAK-5326-C-0.25-M12-L	2 NO	–	with	With M12 Pigtail
6490653410	MAK-5336-C-0.25-M12-LM	2NO	1NO	with	With M12 Pigtail
6490653411	MAK-5326-CD-0.25-M12-L	1NC / 1NO	–	with	With M12 Pigtail
6490653412	MAK-5336-CD-0.25-M12-LM	1NC / 1NO	1NO	with	With M12 Pigtail
6490653379	MAK-5326-C-2	2NO	–	without	With 2 metres of open-ended cable
6490653380	MAK-5336-C-2-M	2NO	1NO	without	With 2 metres of open-ended cable
6490653376	MAK-5326-CD-2	1NC / 1NO	–	without	With 2 metres of open-ended cable
6490653413	MAK-5336-CD-2-M	1NC / 1NO	1NO	without	With 2 metres of open-ended cable
6490653414	MAK-5326-C-2-L	2NO	–	with	With 2 metres of open-ended cable
6490653415	MAK-5336-C-2-LM	2NO	1NO	with	With 2 metres of open-ended cable
6490653416	MAK-5326-CD-2-L	1NC / 1NO	–	with	With 2 metres of open-ended cable
6490653417	MAK-5336-CD-2-LM	1NC / 1NO	1NO	with	With 2 metres of open-ended cable

Other cable lengths available on request.



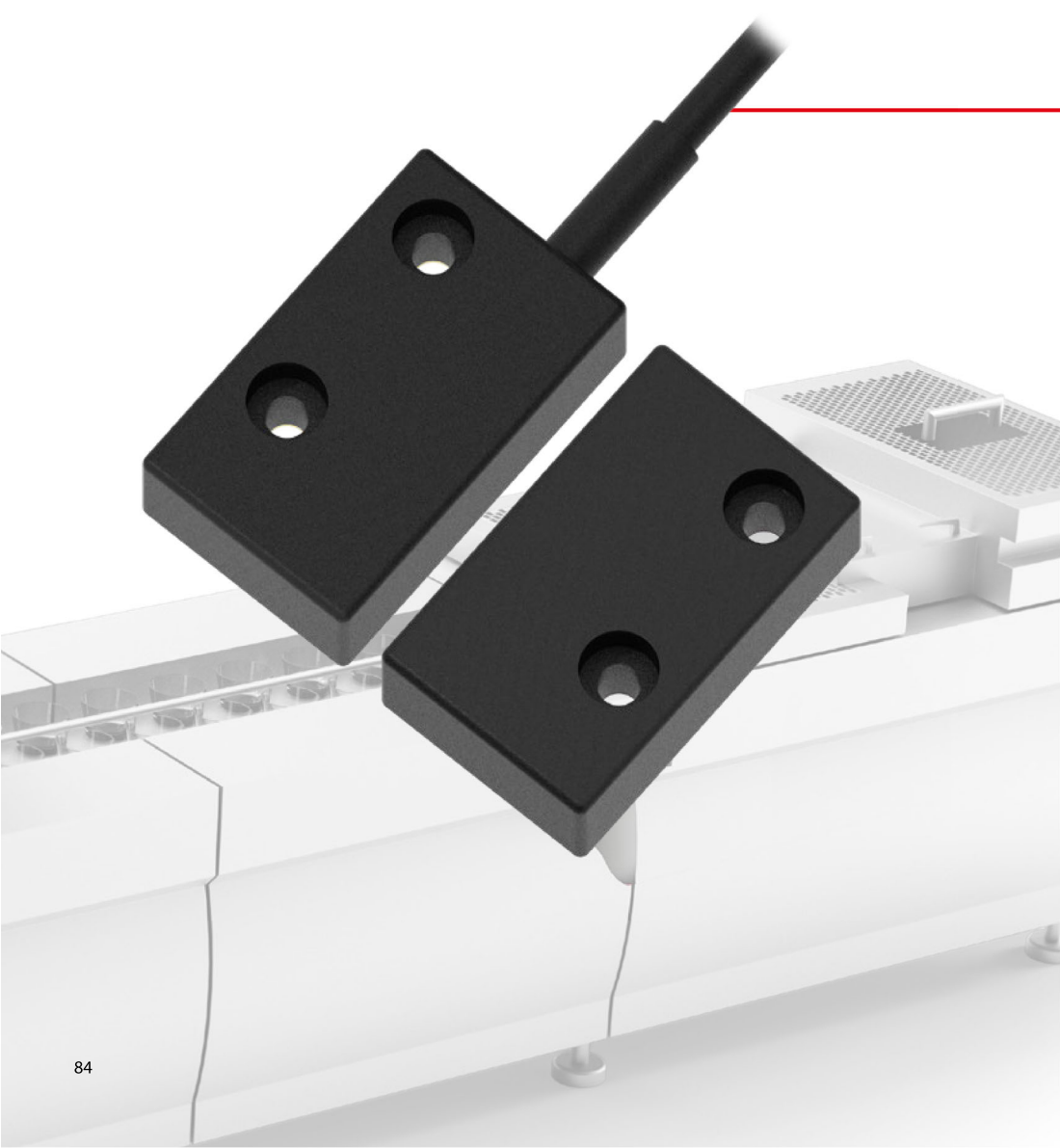
Magnets

Article number	Designation	S _{ao}	S _{ar}
6402053088	TK-53-CD/2	≥ 5 mm	≤ 14 mm
6402053087	TK-53-CD/2 SN8	≥ 8 mm	≤ 17 mm

Options

- You will find single-ended and double-ended cordsets under accessories (from page 162)
- One-way screws for fastening in accordance with ISO 14119 can be found from page 172 onwards.

Magnetic coded safety sensor
MAK-52



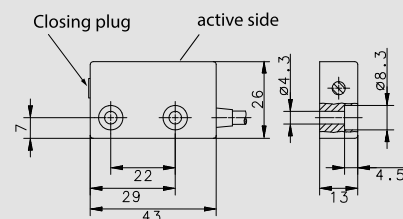
MANY BENEFITS AT A GLANCE

- Compact
- No external moving parts
- Low susceptibility to non-metallic dusts, liquids
- Easy to clean
- Low coding according to ISO 14119
- Conditional tolerance to misalignment of the guards

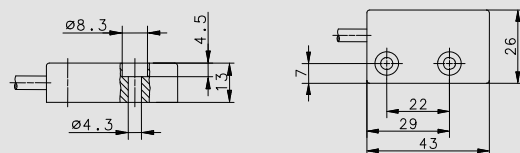
Technical data

No.	maximum switching voltage	maximum switching current	maximum switching power	Temperature with movable cable	Temperature with fixed cable	Pro-tection class
1	30 V DC	80 mA	0.25 W	– 10 up to +105°C	– 30 up to +105°C	IP67
2	30 V DC	250 mA	5 W	– 10 up to +105°C	– 30 up to +105°C	IP67
3	30 V DC	80 mA	0.25 W	– 5 up to +70°C	–	IP67
6	30 V DC	80 mA	0.25 W	– 5 up to +70°C	– 25 up to +70°C	IP67
Coding of all sensors		Low coding level according to ISO 14119				

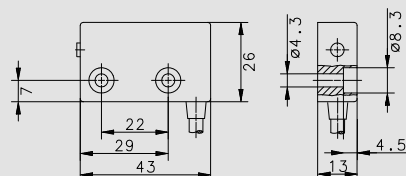
4) MAK 52 Sensor, cable right



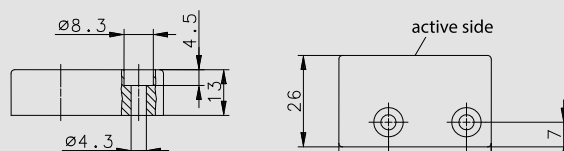
5) MAK 52 Sensor, cable left



6) MAK 52 Sensor, cable on the side



7) MAK 52 Magnet



Sensors

Article number	Designation	Safety contacts	Connection	Reference magnet No.	Technical data No.	Dimension drawing No.
6490652327	MAK-5236-BCD-3	1NC/1NO	3 m cable, left	1 and 2	1	5
6490652328	MAK-5236-BCD-6	1NC/1NO	6 m cable, left	1 and 2	1	5
6490652329	MAK-5236-BCD-9	1NC/1NO	9 m cable, left	1 and 2	1	5
6490652354	MAK-5236-BCD-0.2-M12	1NC/1NO	20 cm cable with M12 connector, 5 pin left	1 and 2	6	5
6490652353	MAK-5236-CD-3	2NO	3 m cable, left	1 and 2	1	5
6490652334	MAK-5236-CD-2S-1,5	2NO	1.5 m cable, on the side	1 and 2	2	6
6490652335	MAK-5236-CD-2S-1,5	2NO	1.5 m cable, right	1 and 2	2	4
6490652355	MAK-5236-CD-0.2-M12	2NO	20 cm cable with M12 connector, 5 pin left	1 and 2	6	5

Other cable lengths on request.

*Applies only in conjunction with the safety relay MÜZ.

Magnets

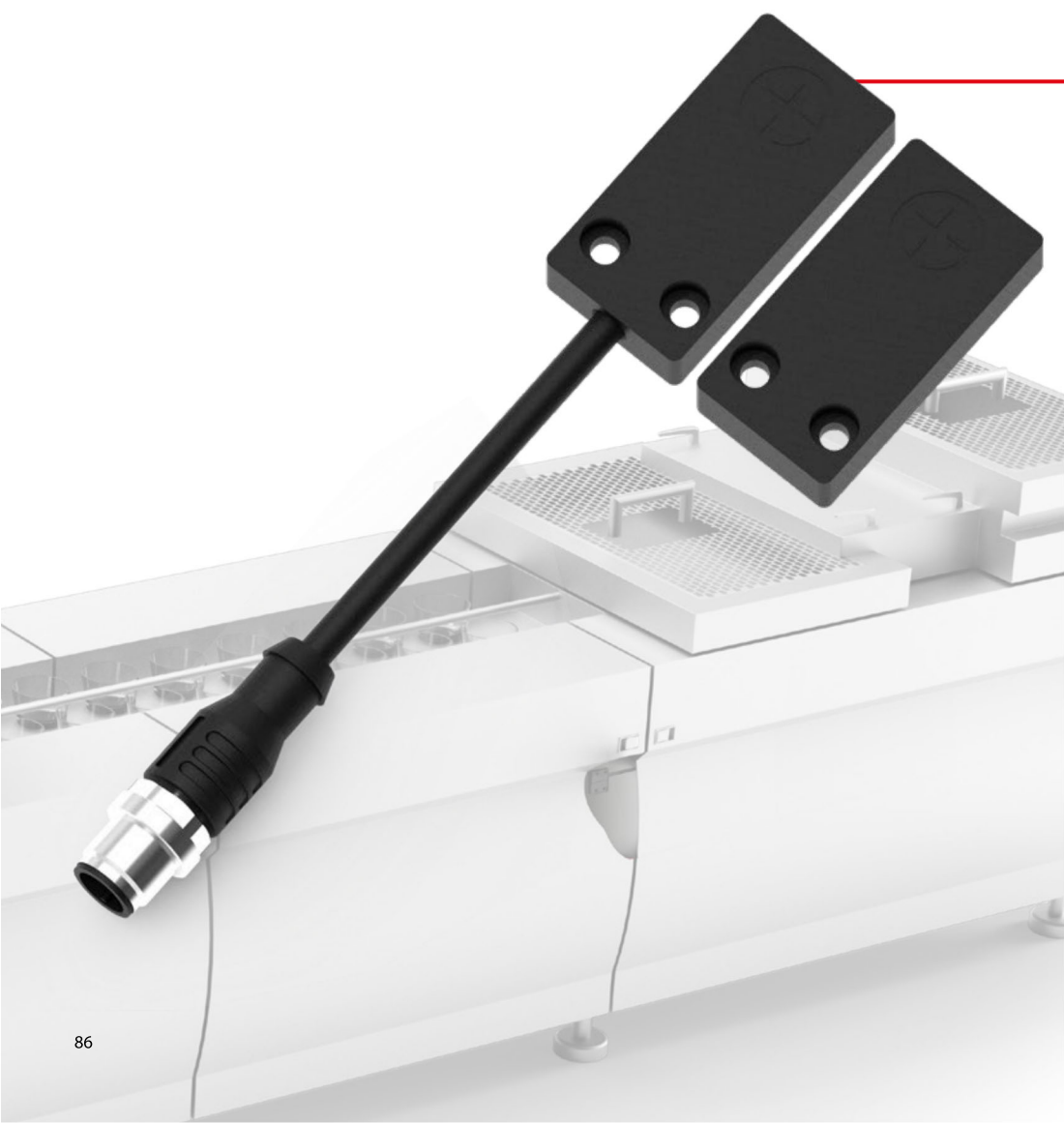
Magnet No.	Article number	Designation	S _{ao}	S _{ar}	Dimension drawing No.
1	6402052067	TK-52-CD/2	≥ 3 mm	≤ 14 mm	7
2	6402052075	TK-52-CD/2 SN8	≥ 8 mm	≤ 17 mm	7



Options

- You will find single-ended and double-ended cordsets under accessories (from page 162)
- One-way screws for fastening in accordance with ISO 14119 can be found from page 172 onwards.

Magnetic coded safety sensor MAK-50



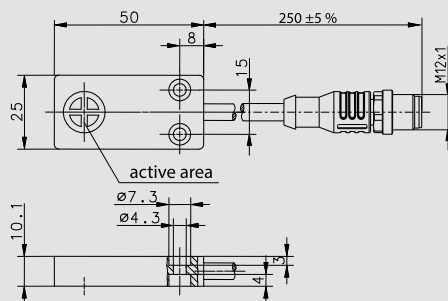
MANY BENEFITS AT A GLANCE

- Extra flat design
- Compact
- No external moving parts
- Low susceptibility to non-metallic dusts and liquids
- Easy to clean
- Low coding according to ISO 14119

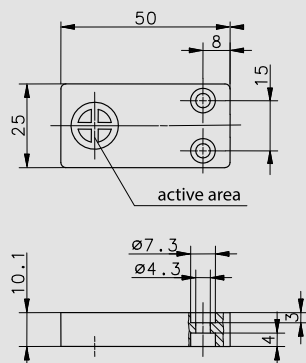
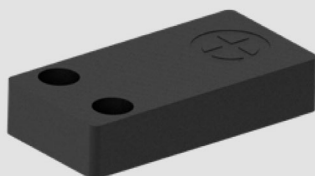
Technical data

maximum switching voltage	maximum switching current	maximum switching power	Temperature with movable cable	Temperature with fixed cable	Pro-tection class
30 V DC	0,08 A	0,25 W	– 5 °C up to +70 °C	– 25 °C up to +70 °C	IP67
Coding of all sensors	Low coding level according to ISO 14119				

MAK 50 Sensor



MAK 50 Magnet



Sensors

Article number	Designation	Safety contacts	Signalling contacts	LED	Connection
6490650369	MAK-5046-C-0.25-M12	2NO	–	without	With M12 Pigtail
6490650381	MAK-5066-C-0.25-M12-M	2NO	1NO	without	With M12 Pigtail
6490650370	MAK-5046-CD-0.25-M12	1NC / 1NO	–	without	With M12 Pigtail
6490650382	MAK-5066-CD-0.25-M12-M	1NC / 1NO	1NO	without	With M12 Pigtail
6490650371	MAK-5046-C-0.25-M12-L	2NO	–	with	With M12 Pigtail
6490650395	MAK-5066-C-0.25-M12-LM	2NO	1NO	with	With M12 Pigtail
6490650396	MAK-5046-CD-0.25-M12-L	1NC / 1NO	–	with	With M12 Pigtail
6490650397	MAK-5066-CD-0.25-M12-LM	1NC / 1NO	1NO	with	With M12 Pigtail
6490650372	MAK-5046-C-2	2 NO	–	without	With 2 m cable and open cable end
6490650383	MAK-5066-C-2-M	2NO	1NO	without	With 2 m cable and open cable end
6490650367	MAK-5046-CD-2	1NC / 1NO	–	without	With 2 m cable and open cable end
6490650384	MAK-5066-CD-2-M	1NC / 1NO	1NO	without	With 2 m cable and open cable end
6490650373	MAK-5046-C-2-L	2NO	–	with	With 2 m cable and open cable end
6490650398	MAK-5066-C-2-LM	2NO	1NO	with	With 2 m cable and open cable end
6490650399	MAK-5046-CD-2-L	1NC / 1NO	–	with	With 2 m cable and open cable end
6490650400	MAK-5066-CD-2-LM	1NC / 1NO	1NO	with	With 2 m cable and open cable end

Other cable lengths available on request.



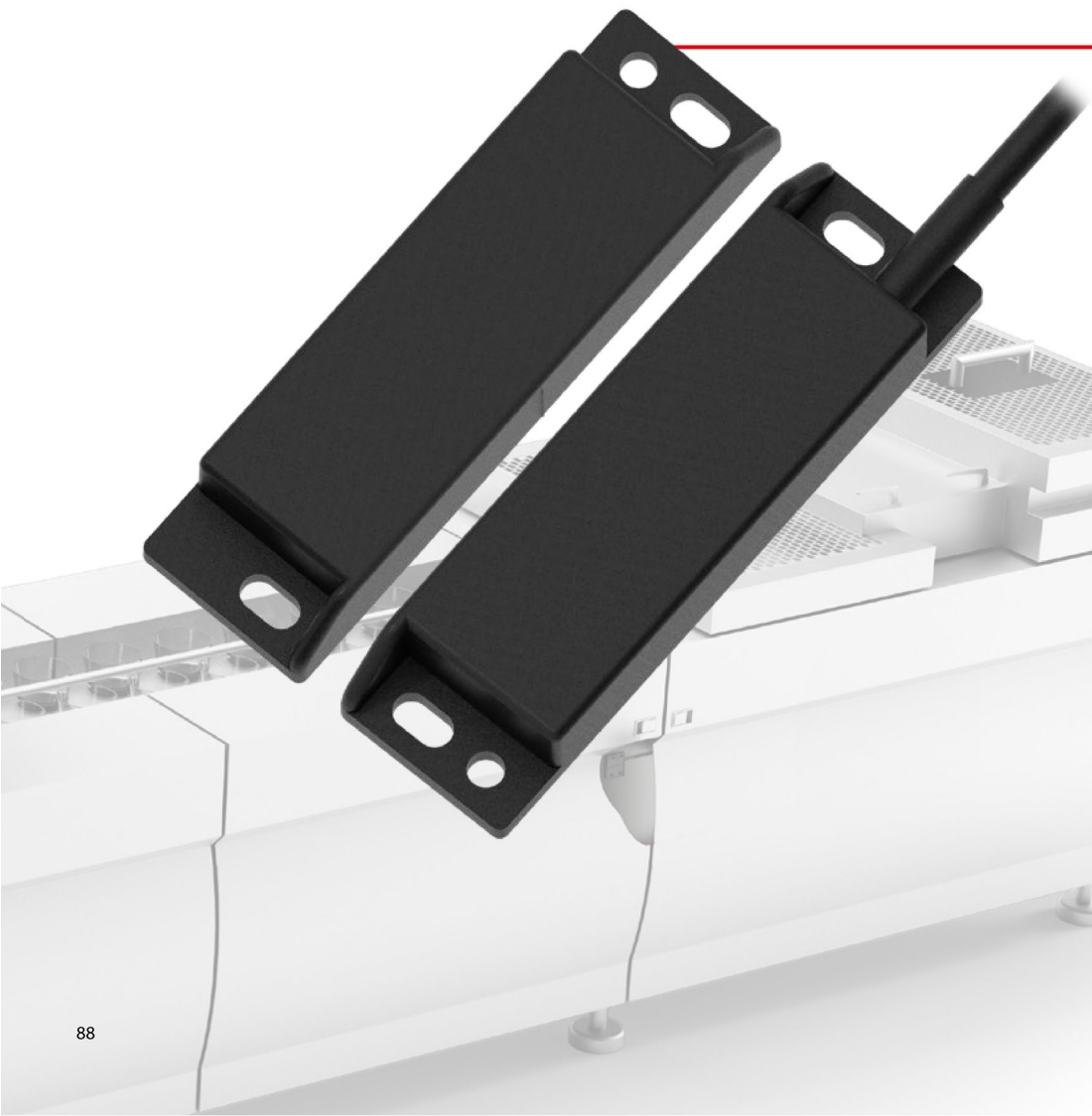
Options

Magnet

Article number	Designation	S _{ao}	S _{ar}
6402050086	TK-50-CD/2	≥ 6 mm	≤ 22 mm

- You will find single-ended and double-ended cordsets under accessories (from page 162)
- One-way screws for fastening in accordance with ISO 14119 can be found from page 172 onwards.

Magnetic coded safety sensor
MAK-42



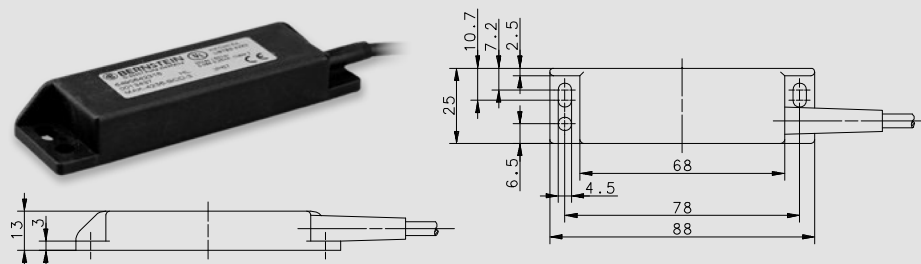
MANY BENEFITS AT A GLANCE

- Compact
- No external moving parts
- Low susceptibility to non-metallic dusts, liquids
- Easy to clean
- Low coding according to ISO 14119
- Conditional tolerance to misalignment of the guards

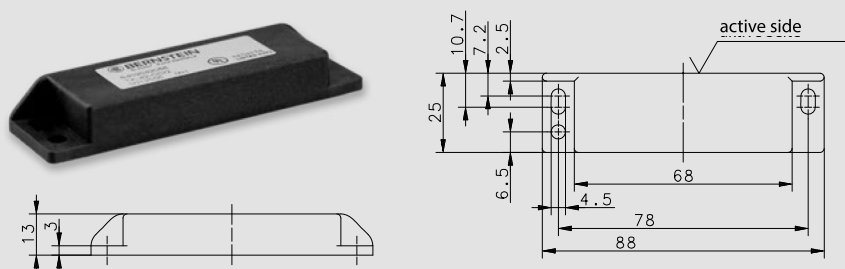
Technical data

No.	maximum switching voltage	maximum switching current	maximum switching power	Temperature with movable cable	Temperature with fixed cable	Pro-tection class
1	30 V DC	80 mA	0.25 W	– 10 up to +105°C	– 30 up to +105°C	IP67
2	30 V DC	250 mA	5 W	– 10 up to +105°C	– 30 up to +105°C	IP67
3	30 V DC	80 mA	0.25 W	– 5 up to +70°C	–	IP67
6	30 V DC	80 mA	0.25 W	– 5 up to +70°C	– 25 up to +70°C	IP67
Coding of all sensors		Low coding level according to ISO 14119				

1) MAK 42 Sensor, cable right



3) MAK 42 Magnet



Sensors

Article number	Designation	Safety contacts	Connection	Reference magnet No.	Technical data No.	Dimension drawing No.
6490642318	MAK-4236-BCD-3	1NC/1NO	3 m Cable, right	1 or 2	1	1
6490642319	MAK-4236-BCD-6	1NC/1NO	6 m Cable, right	1 or 2	1	1
6490642320	MAK-4236-BCD-9	1NC/1NO	9 m Cable, right	1 or 2	1	1
6490642352	MAK-4236-BCD-0.2-M12	1NC/1NO	20 cm cable with M12 connector, 5 pin right	1 or 2	6	1
6490642350	MAK-4236-CD-0.2-M12	2NO	20 cm cable with M12 connector, 5 pin right	1 or 2	6	1
6490642351	MAK-4236-CD-3	2NO	3 m cable, right	1 or 2	1	1

Other cable lengths on request.

Magnets

Magnet No.	Article number	Designation	S _{ao}	S _{ar}	Dimension drawing No.
1	6402042068	TK-42-CD/2	≥ 4 mm	≤ 17 mm	3
2	6402042082	TK-42-CD/2-SN8	≥ 8 mm	≤ 17 mm	3



Options

- You will find single-ended and double-ended cordsets under accessories (from page 162)
- One-way screws for fastening in accordance with ISO 14119 can be found from page 172 onwards.