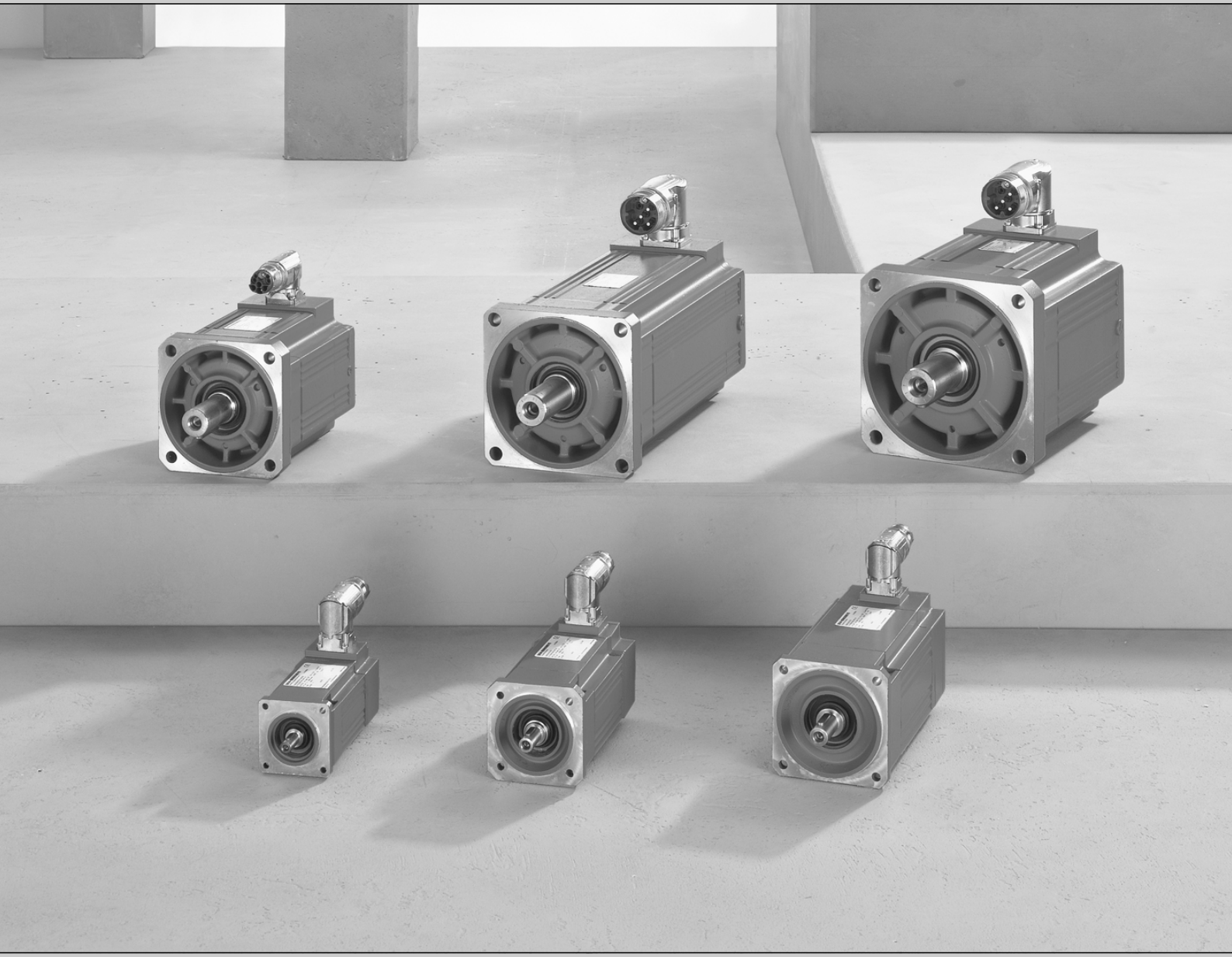
SEW EURODRIVE

Addendum to the Operating Instructions



Synchronous Servomotors

CMP40 – 100, CMPZ71 – 100

Design without Encoder

Edition 12/2016

23112514/EN

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1 Safety notes

1.1 Lifting applications

CMP.. synchronous servomotors in design without encoder and with the ELSM® control mode must **not** be used in lifting applications.

In this control mode only applications with horizontal materials handling are permitted.

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2 General information

2.1 How to use this documentation

This addendum to the operating instructions contains special information on the synchronous servomotor design without encoder.

The documentation for synchronous servomotors in design without encoder consists of:

- The "Synchronous Servomotors" operating instructions.
- The present addendum to the operating instructions "Synchronous Servomotors – Design without Encoder".

The operating instructions and the addendum to the operating instructions are an integral part of the product and contain important information for operation and service. The operating instructions and the addendum to the operating instructions are intended for staff responsible for the assembly, installation, startup and maintenance of the product.

The operating instructions and the addendum to the operating instructions must be legible and accessible at all times. Make sure that staff responsible for the plant and its operation, as well as persons who work independently on the unit, have read the operating instructions and the addendum to the operating instructions carefully and understood them.

Make sure you always use the latest documentation and software version.

Our documentation is available in various languages for download from the homepage (www.sew-eurodrive.com). You can also order the printed documentation from SEW-EURODRIVE.

Contact SEW-EURODRIVE if you are unclear about any of the information in this documentation, or if you require further information.

2.2 Special feature of synchronous servomotors in design without encoder

Servomotors of the CMP.. series can be designed without encoder. This design eliminates the use of a separate encoder connection on the motor. The motor has a single hybrid connector. This connector is installed at the center of the motor's B-side. Together with the insulation insert, the connector is the only visible feature distinguishing the design without encoder from the standard design.

2.2.1 ELSM® control mode

The ELSM® control mode allows for operating CMP.. synchronous servomotors without encoder in speed control mode.

The main features of the control mode are:

- Synchronous servomotors without encoder are used in horizontal materials handling applications. Use in hoists and inclining tracks is not permitted.
- The maximum motor torque is 150% of the continuous standstill torque M_0 in the entire speed range.
- A flying start function is available for synchronization to the running motor.
- Continuous operation below 2% of the rated motor speed is not permitted. This value may be undershot for short time spans.
- The maximum frequency inverter output current is 150% of the standstill current I_0 of the motor.

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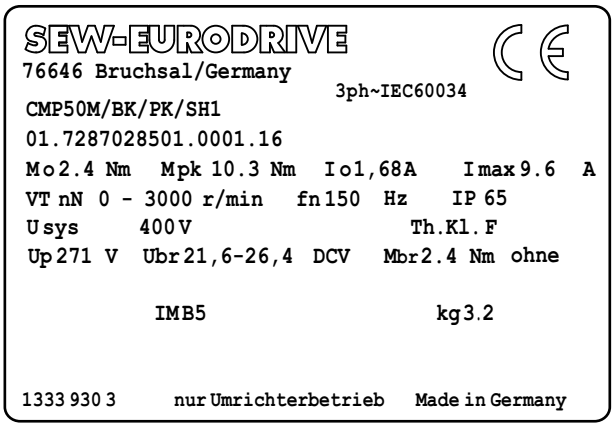
3 Motor structure

3.1 Nameplate and type designation

3.1.1 Nameplate on the servomotor



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3.1.2 Sample type designation of a servomotor

The following diagram shows an example of a type designation:

CMP50M/BK/PK/SH1		
Synchronous servomotor	CMP50	Flange-mounted motor size 50
Length	M	Medium
Mechanical mount-on components	/BK	BK permanent magnet brake
Standard equipment temperature sensor	/PK	PT1000 temperature sensor
Motor connection option	/SH1	M23 hybrid plug connectors for motor and brakemotor, only socket on the motor side

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4 Electrical installation

4.1 Information on connector connection

The cable is entered via an adjustable right-angle connector. SEW-EURODRIVE recommends to adjust the adjustable right-angle connector while the mating connector is plugged in.

NOTICE

Damage to the right-angle connector in case of rotation without mating connector.

Damage to the plug connector and the sealing surface.

- Adjust the right-angle connector only while the mating connector of the motor cable is plugged in.
- If you do not have a mating connector at hand, do NOT use pliers to adjust the right-angle connector.

INFORMATION

- Comply with the permitted bending radii of the cable.
- When using low-capacity trailing cables, the bending radii are larger than for the previously used standard cables.
- SEW-EURODRIVE recommends the use of a low-capacity cable.

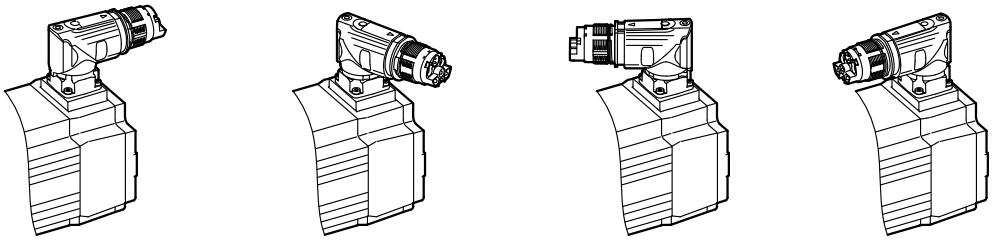
INFORMATION

The connector should only be rotated to install and connect the motor. Do not turn the plug connector regularly once it has been installed.

4.1.1 Connector positions SH.

The SH. right-angle plug connectors can be rotated to achieve the required position.

The following figure illustrates an example of various plug connector alignments:



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4.2 Connecting the motor in design without encoder via plug connector SH.

CMP.. motors without encoder are delivered with the SH. plug connector system.

In the basic version, SEW-EURODRIVE delivers CMP.. motors without encoder with a connector on the motor end and without mating connector.

NOTICE

Potential damage to the right-angle connector.

Possible damage to property.

- Do not align the right-angle connector frequently.

All servomotors are equipped with quick-lock right-angle connectors (speedtec®). If you use connectors without quick lock, the O-ring serves as vibration protection. The connector can only be screwed on until it reaches the O-ring. The connector is always sealed at the bottom. If you are using self-assembled cables with quick lock, you have to remove the O-ring.

4.2.1 Plug connectors on cable side

Type designation of plug connectors

Following an example of a type designation:

S H 1 2	
S	**S:** Connector
H	**H**: Hybrid design (power rating and signals)
1	**1**: Connector size 1 (1.5 – 4 mm²) **B**: Connector size 1.5 (6 – 10 mm²)
2	Cross section **1**: 1.5 mm², **2**: 2.5 mm², **4**: 4 mm², **6**: 6 mm², **10**: 10 mm²

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Hybrid cables for CMP.. motors in design without encoder

CMP.. motors without brake

Motor	Rated speed	Core cross section	Plug connector	Max. cable length	Part number	
CMP..	min^{-1}	mm^2		m	Cable carrier installation	Cable carrier extension[1)]
40S	3000 – 6000	4×1.5	SH1	100	18191290	18191347
40M	3000 – 6000	4×1.5	SH1	100	18191290	18191347
50S	3000 – 6000	4×1.5	SH1	100	18191290	18191347
50M	3000 – 6000	4×1.5	SH1	100	18191290	18191347
50L	3000 – 6000	4×1.5	SH1	100	18191290	18191347
63S	3000 – 6000	4×1.5	SH1	100	18191290	18191347
63M	3000 – 6000	4×1.5	SH1	100	18191290	18191347
63L	3000 – 6000	4×1.5	SH1	75	18191290	18191347
63L	6000	4×2.5	SH1	100	18191304	18191355
71S	2000 – 3000	4×1.5	SH1	100	18191290	18191347
71S	4500	4×1.5	SH1	95	18191290	18191347
71S	4500	4×2.5	SH1	100	18191304	18191355
71S	6000	4×1.5	SH1	70	18191290	18191347
71S	6000	4×2.5	SH1	100	18191304	18191355
71M	2000	4×1.5	SH1	100	18191290	18191347
71M	3000	4×1.5	SH1	90	18191290	18191347
71M	3000	4×2.5	SH1	100	18191304	18191355
71M	4500	4×1.5	SH1	65	18191290	18191347
71M	4500	4×2.5	SH1	100	18191304	18191355
71M	6000	4×2.5	SH1	80	18191304	18191355
71M	6000	4×4	SH1	100	18191312	18191363
71L	2000	4×1.5	SH1	100	18191290	18191347
71L	3000	4×1.5	SH1	80	18191290	18191347
71L	3000	4×2.5	SH1	100	18191304	18191355
71L	4500	4×2.5	SH1	85	18191304	18191355
71L	4500	4×4	SH1	100	18191312	18191363
71L	6000	4×4	SH1	100	18191312	18191363
80S	2000	4×1.5	SH1	100	18191290	18191347
80S	3000	4×1.5	SH1	70	18191290	18191347
80S	3000	4×2.5	SH1	100	18191304	18191355
80S	4500	4×2.5	SH1	80	18191304	18191355
80S	4500	4×4	SH1	100	18191312	18191363
80S	6000	4×4	SH1	95	18191312	18191363
80S	6000	4×6	SHB	100	18191320	18191371
80M	2000	4×1.5	SH1	75	18191290	18191347
80M	2000	4×2.5	SH1	100	18191304	18191355
80M	3000	4×2.5	SH1	90	18191304	18191355
80M	3000	4×4	SH1	100	18191312	18191363
80M	4500	4×4	SH1	95	18191312	18191363
80M	4500 – 6000	4×6	SHB	100	18191320	18191371
80L	2000	4×2.5	SH1	90	18191304	18191355
80L	2000 – 3000	4×4	SH1	100	18191312	18191363
80L	4500	4×6	SHB	100	18191320	18191371
80L	6000	4×10	SHB	100	18191339	18191398
100S	2000	4×2.5	SH1	85	18191304	18191355
100S	2000	4×4	SH1	100	18191312	18191363
100S	3000	4×4	SH1	95	18191312	18191363
100S	3000	4×6	SHB	100	18191320	18191371
100S	4500	4×6	SHB	98	18191320	18191371

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Motor	Rated speed	Core cross section	Plug connector	Max. cable length	Part number	
CMP..	min^{-1}	mm^2		m	Cable carrier installation	Cable carrier extension[1)]
100S	4500	4×10	SHB	100	18191339	18191398
100M	2000	4×2.5	SH1	75	18191304	18191355
100M	2000	4×4	SH1	100	18191312	18191363
100M	3000	4×4	SH1	85	18191312	18191363
100M	3000	4×6	SHB	100	18191320	18191371
100M	4500	4×6	SHB	90	18191320	18191371
100M	4500	4×10	SHB	100	18191339	18191398
100L	2000	4×6	SHB	100	18191320	18191371
100L	3000	4×6	SHB	90	18191320	18191371
100L	3000	4×10	SHB	100	18191339	18191398
100L	4500	4×10	SHB	98	18191339	18191398

1) Currently only cable carrier extension cables are offered

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CMP.. motors with brake

Motor	Rated speed	Brake	Core cross section	Plug connector	Max. cable length	Part number	
CMP..	min^{-1}		mm^2		m	Cable carrier installation	Cable carrier extension[1)]
40S	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
40M	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
50S	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
50M	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
50L	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
63S	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
63M	3000 – 6000	BK	4×1.5 + 3×1	SH1	100	18191290	18191347
63L	3000 – 6000	BK	4×1.5 + 3×1	SH1	75	18191290	18191347
63L	6000	BK	4×2.5 + 3×1	SH1	100	18191304	18191355
71S	2000 – 4500	BP	4×1.5 + 3×1	SH1	80	18191290	18191347
71S	4500	BP	4×2.5 + 3×1	SH1	80	18191304	18191355
71S	6000	BP	4×1.5 + 3×1	SH1	70	18191290	18191347
71S	6000	BP	4×2.5 + 3×1	SH1	80	18191304	18191355
71M	2000 – 3000	BP	4×1.5 + 3×1	SH1	80	18191290	18191347
71M	3000	BP	4×2.5 + 3×1	SH1	80	18191304	18191355
71M	4500	BP	4×1.5 + 3×1	SH1	65	18191290	18191347
71M	4500 – 6000	BP	4×2.5 + 3×1	SH1	80	18191304	18191355
71M	6000	BP	4×4 + 3×1	SH1	80	18191312	18191363
71L	2000 – 3000	BP	4×1.5 + 3×1	SH1	80	18191290	18191347
71L	3000 – 4500	BP	4×2.5 + 3×1	SH1	80	18191304	18191355
71M	4500 – 6000	BP	4×4 + 3×1	SH1	80	18191312	18191363
80S	2000 – 3000	BP	4×1.5 + 3×1	SH1	55	18191290	18191347
80S	3000 – 4500	BP	4×2.5 + 3×1	SH1	55	18191304	18191355
80S	4500	BP	4×4 + 3×1	SH1	55	18191312	18191363
80M	2000	BP	4×1.5 + 3×1	SH1	55	18191290	18191347
80M	2000 – 3000	BP	4×2.5 + 3×1	SH1	55	18191304	18191355
80M	3000 – 4500	BP	4×4 + 3×1	SH1	55	18191312	18191363
80M	4500	BP	4×6 + 3×1.5	SHB	85	18191320	18191371
80L	2000	BP	4×2.5 + 3×1	SH1	55	18191304	18191355
80L	2000 – 3000	BP	4×4 + 3×1	SH1	55	18191312	18191363
80L	4500	BP	4×6 + 3×1.5	SHB	85	18191320	18191371
100S	2000	BP	4×2.5 + 3×1	SH1	45	18191304	18191355
100S	2000 – 3000	BP	4×4 + 3×1	SH1	45	18191312	18191363
100S	3000 – 4500	BP	4×6 + 3×1.5	SHB	70	18191320	18191371
100S	4500	BP	4×10 + 3×1.5	SHB	70	18191339	18191398
100M	2000	BP	4×2.5 + 2×1	SH1	45	18191304	18191355
100M	2000 – 3000	BP	4×4 + 2×1	SH1	45	18191312	18191363
100M	3000 – 4500	BP	4×6 + 3×1.5	SHB	70	18191320	18191371
100M	4500	BP	4×10 + 3×1.5	SHB	70	18191339	18191398
100L	2000 – 3000	BP	4×6 + 3×1.5	SHB	70	18191320	18191371
100L	3000 – 4500	BP	4×10 + 3×1.5	SHB	70	18191339	18191398

1) Currently only cable carrier extension cables are offered

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CMPZ.. motors without brake

Motor	Rated speed	Core cross section	Plug connector	Max. cable length	Part number	
CMPZ..	min^{-1}	mm^2		m	Cable carrier installation	Cable carrier extension[1)]
71S	2000 – 3000	4×1.5 + 3×1	SH1	100	18191290	18191347
71S	4500	4×1.5 + 3×1	SH1	96	18191290	18191347
71S	4500	4×2.5 + 3×1	SH1	100	18191304	18191355
71S	6000	4×1.5 + 3×1	SH1	73	18191290	18191347
71S	6000	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	2000	4×1.5 + 3×1	SH1	100	18191290	18191347
71M	3000	4×1.5 + 3×1	SH1	93	18191290	18191347
71M	3000	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	4500	4×1.5 + 3×1	SH1	64	18191290	18191347
71M	4500	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	6000	4×2.5 + 3×1	SH1	79	18191304	18191355
71M	6000	4×4 + 3×1	SH1	100	18191312	18191363
71L	2000	4×1.5 + 3×1	SH1	100	18191290	18191347
71L	3000	4×1.5 + 3×1	SH1	74	18191290	18191347
71L	3000	4×2.5 + 3×1	SH1	100	18191304	18191355
71L	4500	4×2.5 + 3×1	SH1	83	18191304	18191355
71L	4500 – 6000	4×4 + 3×1	SH1	100	18191312	18191363
80S	2000	4×1.5 + 3×1	SH1	100	18191290	18191347
80S	3000	4×1.5 + 3×1	SH1	70	18191290	18191347
80S	3000	4×2.5 + 3×1	SH1	100 (75)	18191304	18191355
80S	4500	4×2.5 + 3×1	SH1	76 (75)	18191304	18191355
80S	6000	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80M	2000	4×1.5 + 3×1	SH1	75	18191290	18191347
80M	2000	4×2.5 + 3×1	SH1	100	18191304	18191355
80M	3000	4×2.5 + 3×1	SH1	87 (75)	18191304	18191355
80M	3000	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80M	4500	4×4 + 3×1	SH1	93 (75)	18191312	18191363
80M	4500	4×6 + 3×1.5	SHB	100	18191320	18191371
80L	2000	4×2.5 + 3×1	SH1	93	18191304	18191355
80L	2000	4×4 + 3×1	SH1	100	18191312	18191363
80L	3000	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80L	4500	4×6 + 3×1.5	SHB	100	18191320	18191371
100S	2000	4×2.5 + 3×1	SH1	88	18191304	18191355
100S	2000	4×4 + 3×1	SH1	100	18191312	18191363
100S	3000	4×4 + 3×1	SH1	95 (55)	18191312	18191363
100S	3000	4×6 + 3×1.5	SHB	100 (80)	18191320	18191371
100S	4500	4×6 + 3×1.5	SHB	93 (80)	18191320	18191371
100S	4500	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100M	2000	4×2.5 + 3×1	SH1	79	18191304	18191355
100M	2000	4×4 + 3×1	SH1	100	18191312	18191363
100M	3000	4×4 + 3×1	SH1	85 (55)	18191312	18191363
100M	3000	4×6 + 3×1.5	SHB	100 (80)	18191320	18191371
100M	4500	4×6 + 3×1.5	SHB	84 (80)	18191320	18191371
100M	4500	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100L	2000	4×4 + 3×1	SH1	85	18191312	18191363
100L	2000	4×6 + 3×1.5	SHB	100	18191320	18191371
100L	3000	4×6 + 3×1.5	SHB	87 (80)	18191320	18191371
100L	3000	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100L	4500	4×10 + 3×1.5	SHB	96 (80)	18191339	18191398

1) Currently only cable carrier extension cables are offered

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CMPZ.. motors with brake

Motor	Rated speed	Brake	Core cross section	Plug connector	Max. cable length	Part number	
CMPZ..	min^{-1}		mm^2		m	Cable carrier installation	Cable carrier extension[1)]
71S	2000 – 3000	BY	4×1.5 + 3×1	SH1	100	18191290	18191347
71S	4500	BY	4×1.5 + 3×1	SH1	96	18191290	18191347
71S	4500	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
71S	6000	BY	4×1.5 + 3×1	SH1	73	18191290	18191347
71S	6000	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	2000	BY	4×1.5 + 3×1	SH1	100	18191290	18191347
71M	3000	BY	4×1.5 + 3×1	SH1	93	18191290	18191347
71M	3000	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	4500	BY	4×1.5 + 3×1	SH1	64	18191290	18191347
71M	4500	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
71M	6000	BY	4×2.5 + 3×1	SH1	79	18191304	18191355
71M	6000	BY	4×4 + 3×1	SH1	100	18191312	18191363
71L	2000	BY	4×1.5 + 3×1	SH1	100	18191290	18191347
71L	3000	BY	4×1.5 + 3×1	SH1	74	18191290	18191347
71L	3000	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
71L	4500	BY	4×2.5 + 3×1	SH1	83	18191304	18191355
71L	4500 – 6000	BY	4×4 + 3×1	SH1	100	18191312	18191363
80S	2000	BY	4×1.5 + 3×1	SH1	100	18191290	18191347
80S	3000	BY	4×1.5 + 3×1	SH1	70	18191290	18191347
80S	3000	BY	4×2.5 + 3×1	SH1	100 (75)	18191304	18191355
80S	4500	BY	4×2.5 + 3×1	SH1	76 (75)	18191304	18191355
80S	6000	BY	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80M	2000	BY	4×1.5 + 3×1	SH1	75	18191290	18191347
80M	2000	BY	4×2.5 + 3×1	SH1	100	18191304	18191355
80M	3000	BY	4×2.5 + 3×1	SH1	87 (75)	18191304	18191355
80M	3000	BY	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80M	4500	BY	4×4 + 3×1	SH1	93 (75)	18191312	18191363
80M	4500	BY	4×6 + 3×1.5	SHB	100	18191320	18191371
80L	2000	BY	4×2.5 + 3×1	SH1	93	18191304	18191355
80L	2000	BY	4×4 + 3×1	SH1	100	18191312	18191363
80L	3000	BY	4×4 + 3×1	SH1	100 (75)	18191312	18191363
80L	4500	BY	4×6 + 3×1.5	SHB	100	18191320	18191371
100S	2000	BY	4×2.5 + 3×1	SH1	88	18191304	18191355
100S	2000	BY	4×4 + 3×1	SH1	100	18191312	18191363
100S	3000	BY	4×4 + 3×1	SH1	95 (55)	18191312	18191363
100S	3000	BY	4×6 + 3×1.5	SHB	100 (80)	18191320	18191371
100S	4500	BY	4×6 + 3×1.5	SHB	93 (80)	18191320	18191371
100S	4500	BY	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100M	2000	BY	4×2.5 + 3×1	SH1	79	18191304	18191355
100M	2000	BY	4×4 + 3×1	SH1	100	18191312	18191363
100M	3000	BY	4×4 + 3×1	SH1	85 (55)	18191312	18191363
100M	3000	BY	4×6 + 3×1.5	SHB	100 (80)	18191320	18191371
100M	4500	BY	4×6 + 3×1.5	SHB	84 (80)	18191320	18191371
100M	4500	BY	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100L	2000	BY	4×4 + 3×1	SH1	85	18191312	18191363
100L	2000	BY	4×6 + 3×1.5	SHB	100	18191320	18191371
100L	3000	BY	4×6 + 3×1.5	SHB	87 (80)	18191320	18191371
100L	3000	BY	4×10 + 3×1.5	SHB	100 (80)	18191339	18191398
100L	4500	BY	4×10 + 3×1.5	SHB	96 (80)	18191339	18191398

1) Currently only cable carrier extension cables are offered

Permitted cable lengths for DC 24 V BY working brakes are especially reduced.

Note the following guidelines:

CMPZ71 with /BY: maximum 8 m

CMPZ80 with /BY: 6.4 to 9 m depending on cable cross section

CMPZ100 with /BY: 4.5 to 7 m depending on cable cross section

For project planning with DC 24 V BY working brake, contact SEW-EURODRIVE.

4.2.2 Prefabricated cables

Prefabricated cables are available from SEW-EURODRIVE to connect the SH.. plug connector system.

For information on prefabricated cables and part numbers, refer to the document "Latest News - CMP40 – 100, CMPZ71 – 100 Synchronous Servomotors – Design without Encoder".

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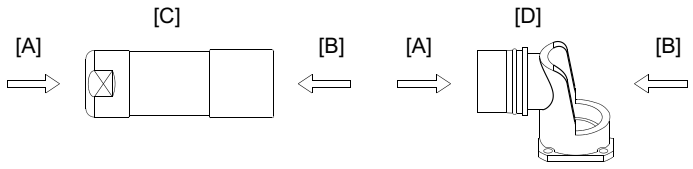
4.2.3 Wiring diagrams of plug connectors for CMP.. motors

Key

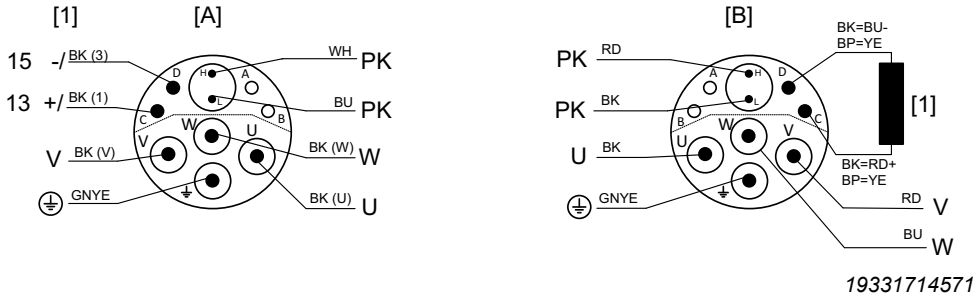


8790995467

[A] View A
[B] View B
[C] Customer connector with socket contacts
[D] Flange socket with pin contacts installed at the factory

Connection of SH1 power plug connector (M23)

Wiring diagram with/without BP/BK brake

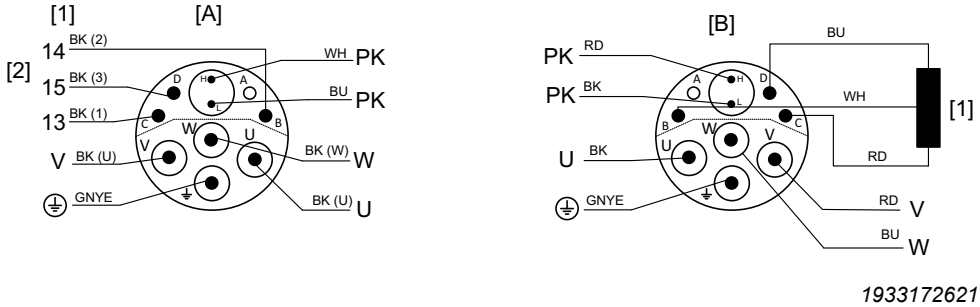


19331714571

[1] BP/BK brake (optional)

Connection of SH1 power plug connector (M23)

Wiring diagram with/without BY brake



19331726219

[1] BY brake (optional)
[2] Connection to rectifier from SEW-EURODRIVE according to operating instructions

Connection of SHB (M40) power plug connectors

Wiring diagram with/without BP brake

19331737867

[1] BP brake (optional)
[2] Connection to rectifier from SEW-EURODRIVE according to operating instructions

Connection of SHB (M40) power plug connectors

Wiring diagram with/without BY brake

19331749515

[1] BY brake (optional)
[2] Connection to rectifier from SEW-EURODRIVE according to operating instructions. For BY.D connection 14 is omitted.

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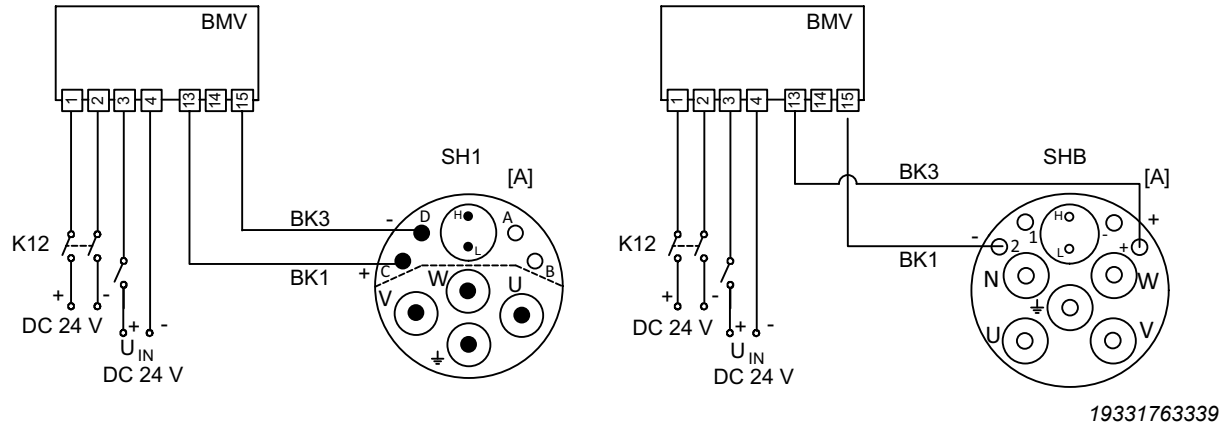
Wiring diagrams of the brake control – BP brake

In every application, the BP holding brake can be controlled via the BMV brake relay or a customer relay with varistor overvoltage protection.

If the system complies with the specifications for direct brake control, then a BP brake can also be controlled directly via the brake output of a MOVIDRIVE® modular application inverter.

However, the brakes of motors CMP.80 and CMP.100 can never be directly connected to MOVIDRIVE® modular. For detailed information, refer to the "MOVIDRIVE® modular Application Inverter" technology manual.

BMV brake controller



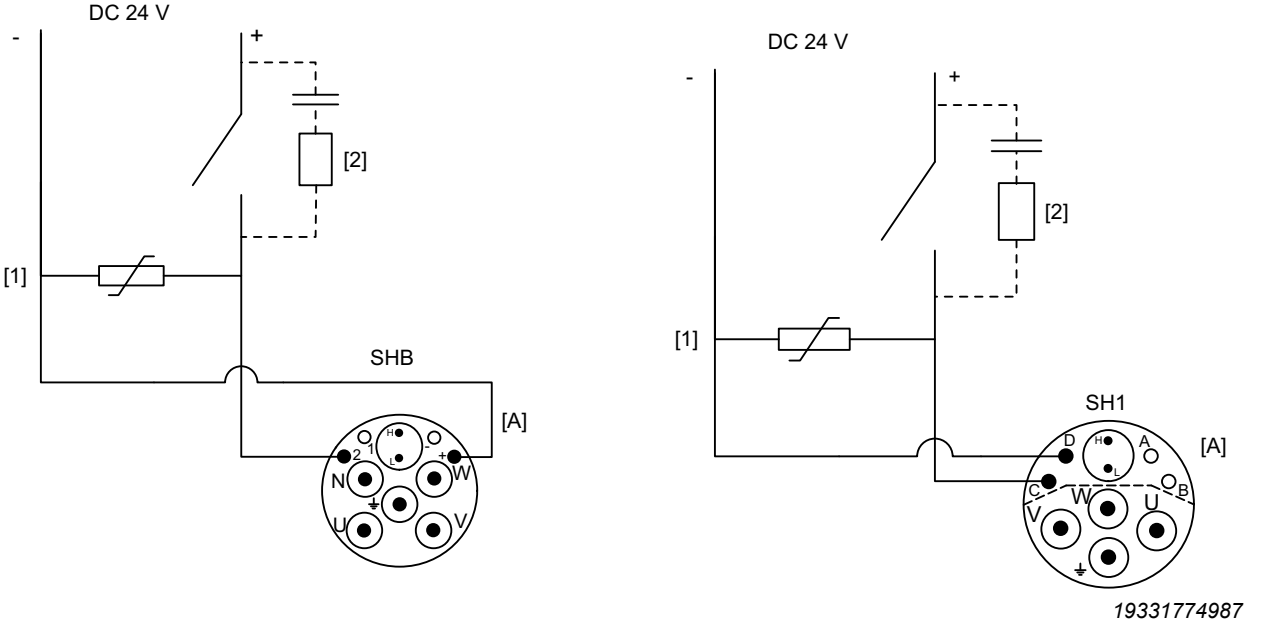
19331763339

Connection 1, 2	Power supply
Connection 3, 4	Signal (inverter)

Direct 24 V brake supply with non-SEW inverters

If the brake is not controlled via BMV brake control unit, a contactor must be used that is suitable for switching inductive DC loads. In this case a varistor circuit in parallel to the brake coil is required as overvoltage protection and EMC interference suppression of the 24 V supply. For brakes with external DC supply of more than 24 V and without BMV, a 300 V varistor must be used.

Additional option: If the varistor circuit is not sufficient for EMC interference suppression, an additional RC element can be switched via the contactor.

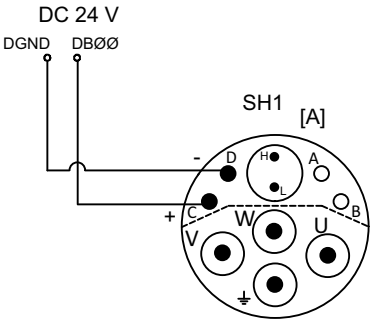


19331774987

[1] Varistor
[2] RC element

Direct brake supply

with MOVIDRIVE®
modular



19331788299

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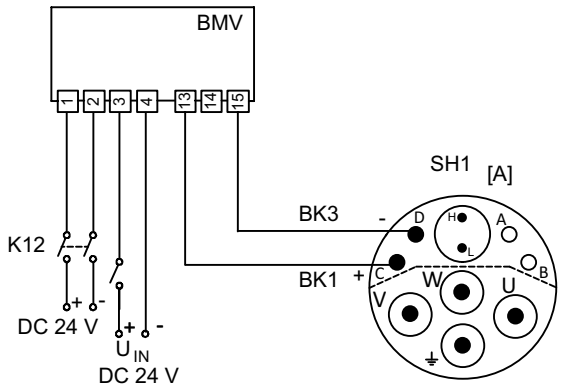
Wiring diagrams of the brake control – BK brake

In every application, the BK holding brake can be controlled via the BMV brake relay or a customer relay with varistor overvoltage protection.

If the system complies with the specifications for direct brake control, then a BK brake can also be controlled directly via the brake output of a MOVIDRIVE® modular application inverter.

For detailed information, refer to the "MOVIDRIVE® modular Application Inverter" technology manual.

BMV brake controller



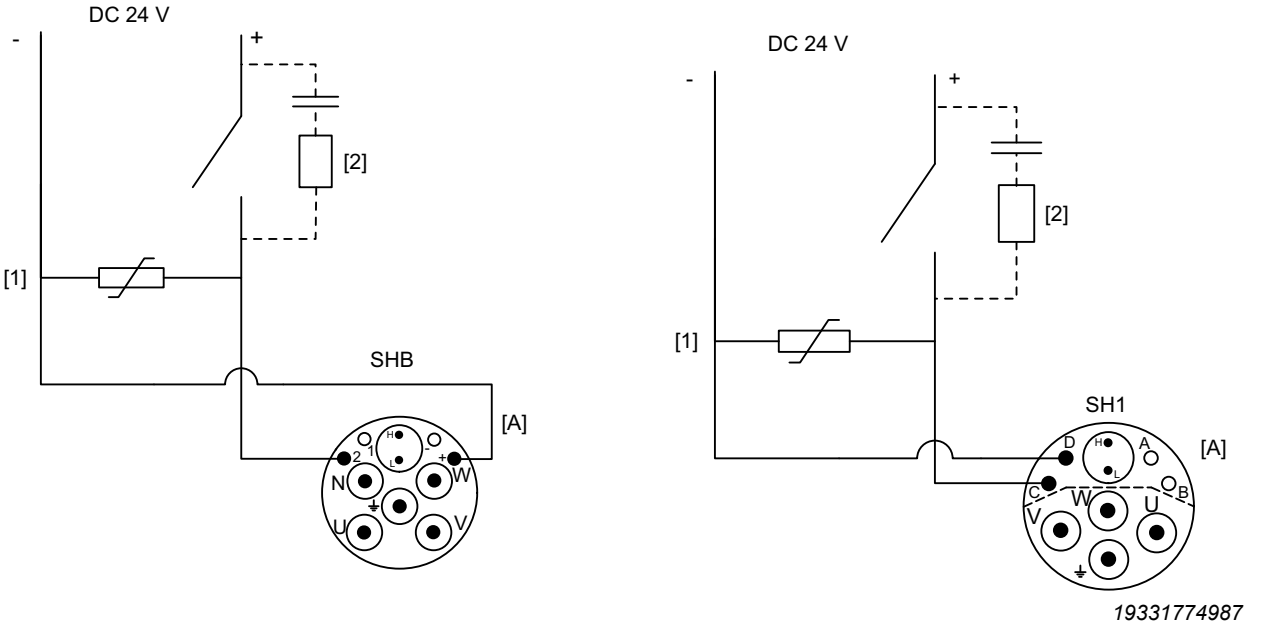
19331813515

Connection 1, 2 Power supply
Connection 3, 4 Signal (inverter)

Direct 24 V brake supply with non-SEW inverters

If the brake is not controlled via BMV brake control unit, a contactor must be used that is suitable for switching inductive DC loads. In this case a varistor circuit in parallel to the brake coil is required as overvoltage protection and EMC interference suppression of the 24 V supply. For brakes with external DC supply of more than 24 V and without BMV, a 300 V varistor must be used.

Additional option: If the varistor circuit is not sufficient for EMC interference suppression, an additional RC element can be switched via the contactor.

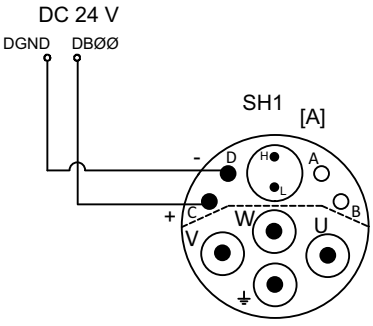


19331774987

[1] Varistor
[2] RC element

Direct 24 V brake supply

with MOVIDRIVE®
modular



19331788299

NOTICE

Damage to the BK brake.

Possible damage to property.

- It is essential that you observe the correct polarity of BK brake supply. Check the polarity when replacing the brake.

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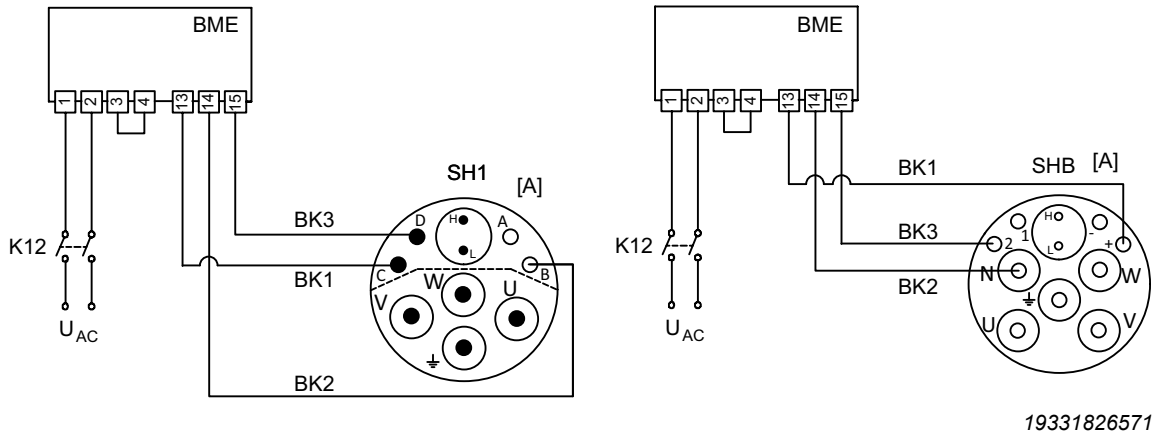
Wiring diagrams of the brake control – BY brake

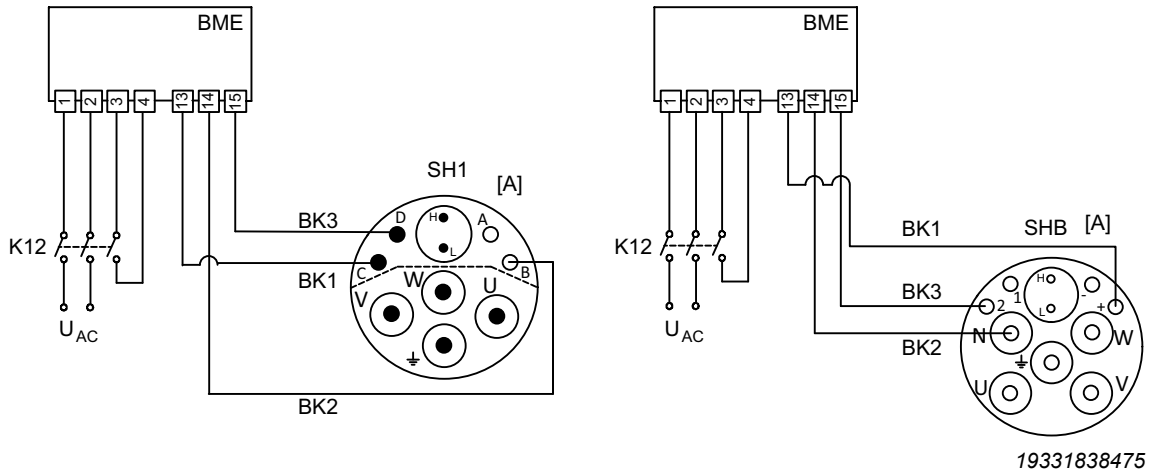
BME brake rectifier

Cut-off in the AC circuit / standard application of the brake with SH1, SHB.



19331826571

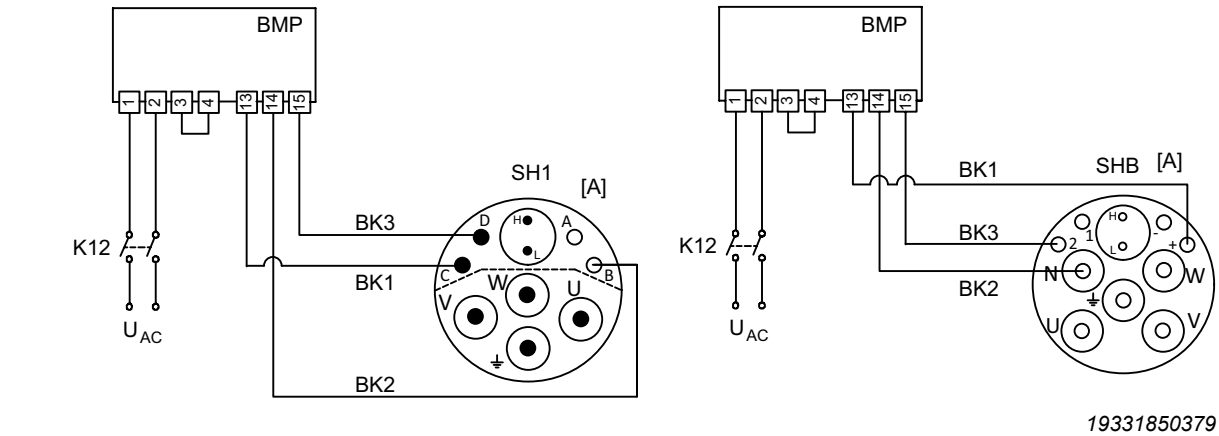
Cut-off in the DC and AC circuits / rapid application of the brake with SH1, SHB.



19331838475

BMP brake rectifier

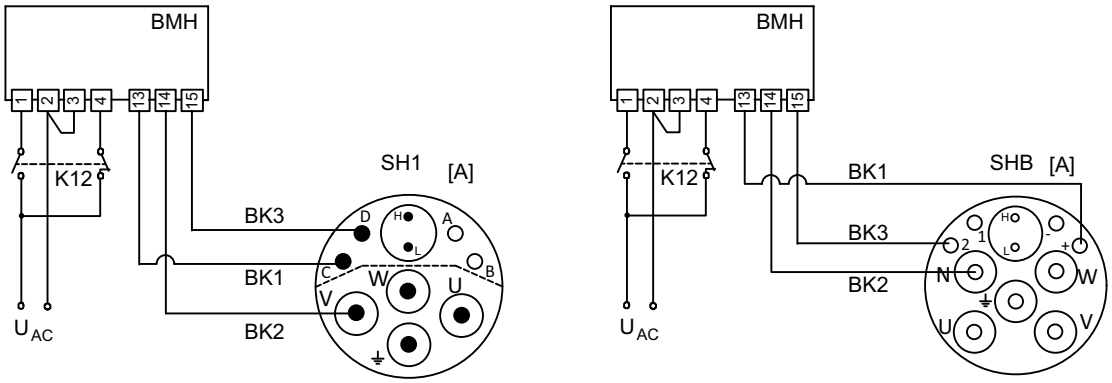
Cut-off in the DC and AC circuits / rapid application of the brake / integrated voltage relay with SH1 and SHB.



19331850379

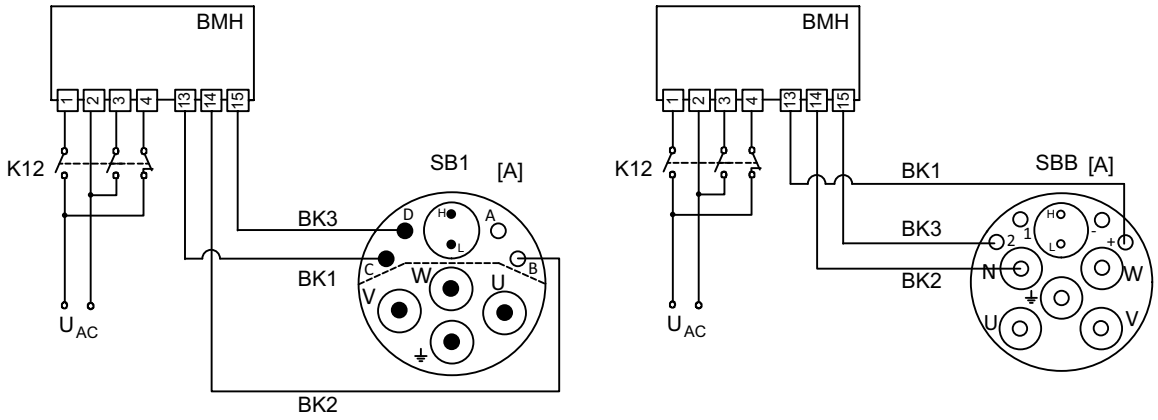
BMH brake rectifier

Cut-off in the AC circuit / standard application of the brake with SH1 and SHB.



19331862283

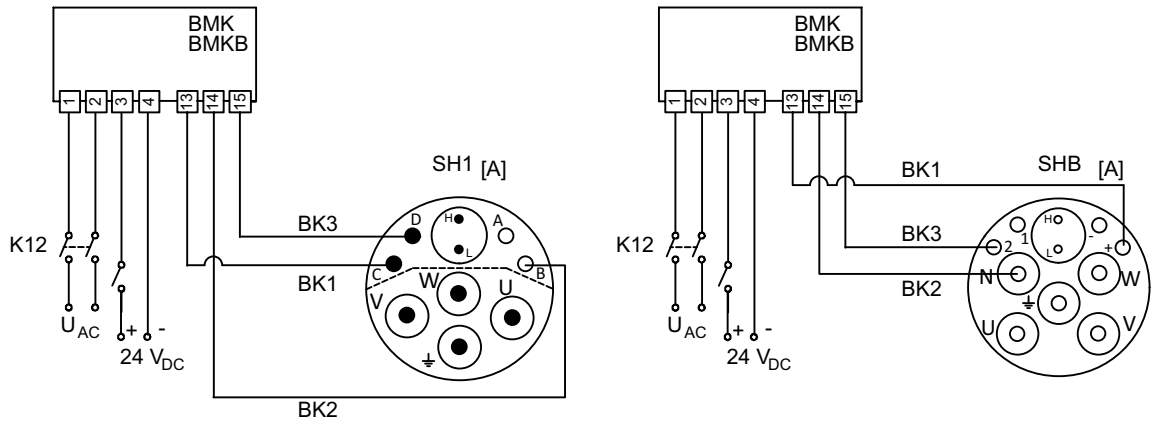
Cut-off in the DC and AC circuits / rapid application of the brake with SH1 and SHB.



19331874187

BMK/BMKB brake control unit

Cut-off in the DC and AC circuits / rapid application of the brake / integrated voltage relay / DC 24 V control input integrated / LED ready for operation display with SH1 and SHB.



19331886091

Connection 1, 2	Power supply
Connection 3, 4	Signal (inverter)

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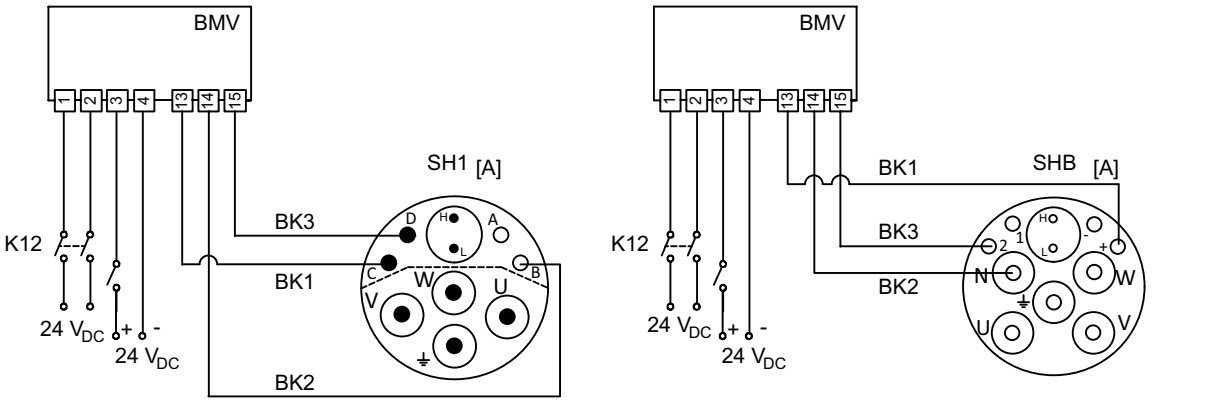
BMV brake controller

Cut-off in the DC and AC circuits / rapid application of the brake / DC 24 V control input integrated with SH1, SHB.



19331897995

Connection 1, 2	Power supply
Connection 3, 4	Signal (inverter)

4.3 Options

4.3.1 PT1000 thermal motor protection

Type designation

/PK

Description

Thermal motor protection in combination with the corresponding evaluation electronics prevents the motor from overheating and consequently from being damaged. A temperature sensor provides only indirect protection as only one sensor value is determined.

The /PK design consists of a platinum sensor PT1000 installed in one of the three motor windings. Unlike the /KY semiconductor sensor, the platinum sensor has an almost linear characteristic curve and is more accurate. The frequency inverter can take on the function of motor protection via the /PK, when it is used in combination with a frequency inverter containing the thermal motor model.

Technical data

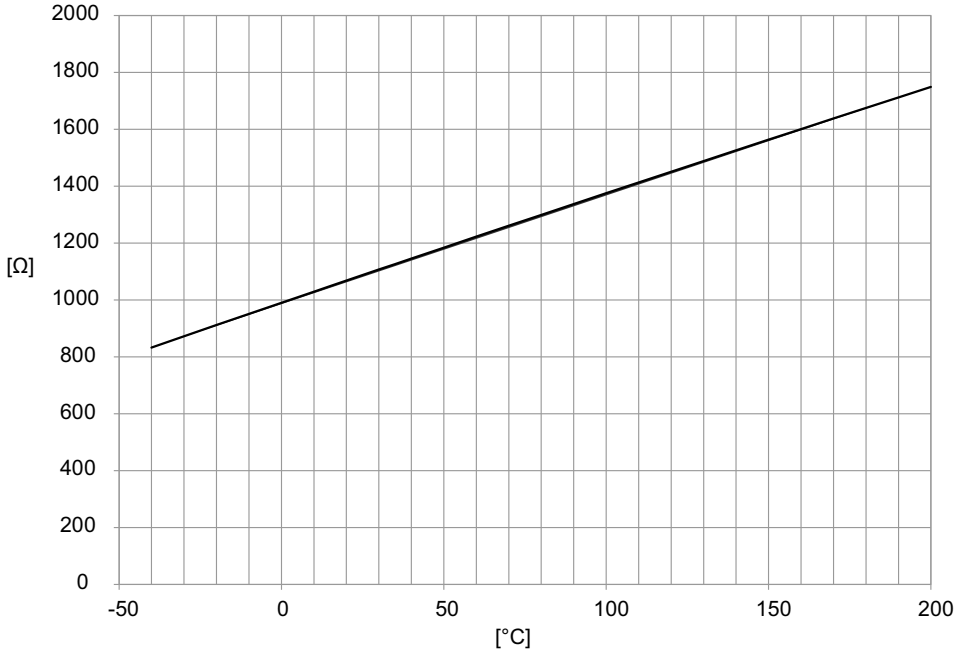
The PT1000 temperature sensor continuously detects the motor temperature.

	PT1000
Connection	red – black
Total resistance at 20 – 25 °C	1050 Ω < R < 1150 Ω
Test current	< 3 mA

INFORMATION

The temperature sensor is unipolar which means that interchanging the incoming cables does not change the measurement result.

Typical characteristic curve of PT1000, F0.6



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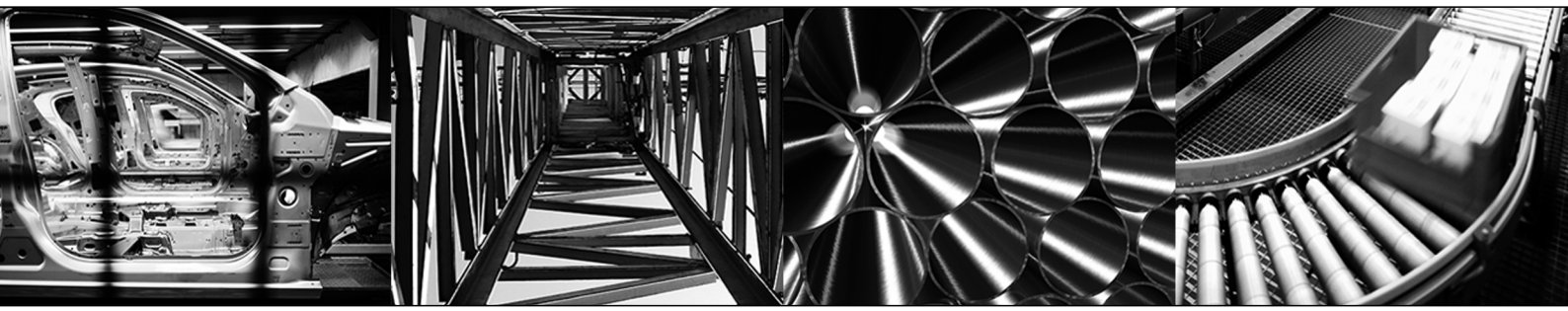

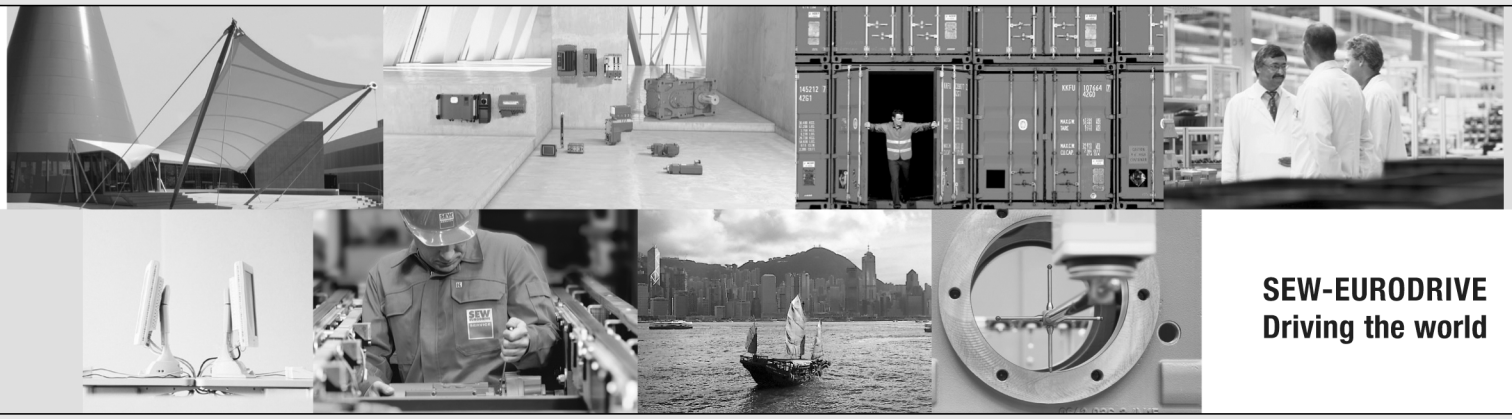

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