



**SEW
EURODRIVE**

Addendum to the Operating Instructions



AC Motors with MOVILINK® DDI Interface



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1 General information

INFORMATION



This document describes the differences between AC motors with a MOVILINK® DDI interface and standard motors.

This document is an addendum to the operating instructions "AC Motors DR.. 56 – 315".

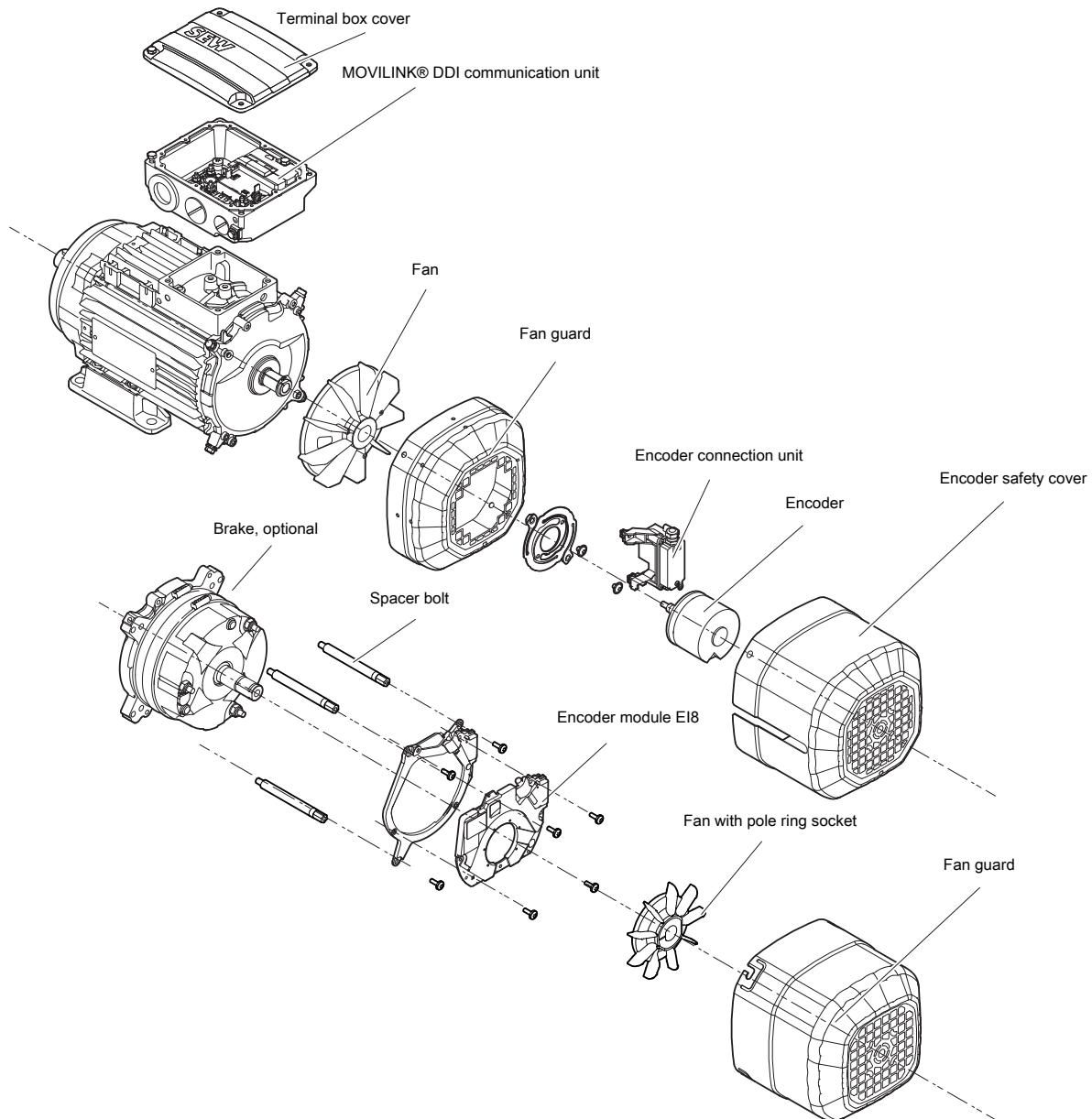
2 Motor structure

INFORMATION



The following figures are block diagrams. They are to facilitate the assignment of components to the spare parts list. Motor size and design may cause deviations.

2.1 Principal design of motors DR.71 – DR.132S

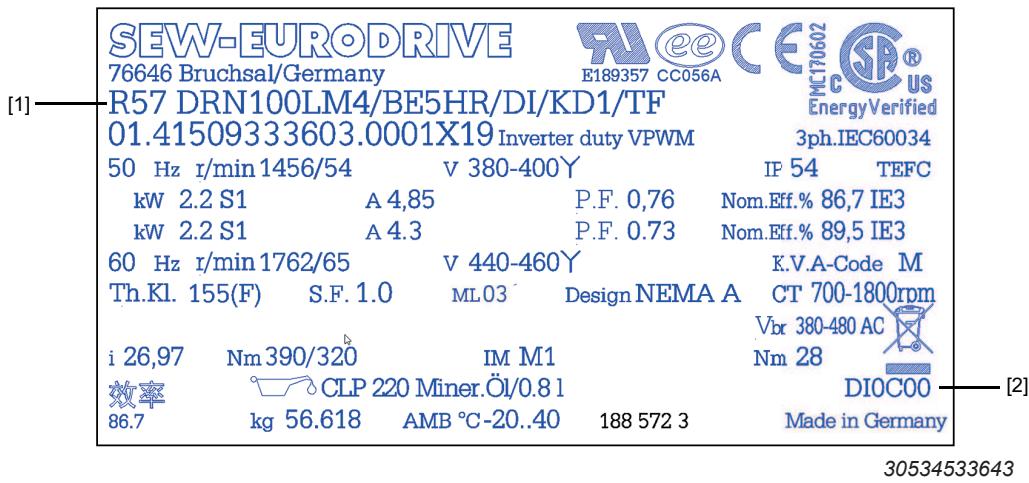


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2.2 DRN.. motor nameplate

The following figure shows an example of a nameplate of a gearmotor with MOVILINK® DDI interface:



[1] Type designation

[2] MOVILINK® DDI interface identification

2.3 Type designation of motor with MOVILINK® DDI

The following table shows the structure of a MOVILINK® DDI type designation:

R47DRN90L4BE05/DI/KD1/TF/EI8Z/2W	
/DI	MOVILINK® DDI
/KD1¹⁾	M23 plug connector, hybrid
/TF	Thermal motor protection
/KDB¹⁾	M40 plug connector, hybrid
/KDD¹⁾	M23 signal plug connector in two-cable technology (extra power)
/EI8Z	Incremental encoder, 12 bit
/EK8Z	Incremental encoder, 18 bit
/AK8Z	Incremental/single-turn encoder, 18 bit; multi-turn encoder, 16 bit absolute
/BG1Z²⁾	Integrated brake rectifier 200 – 500 V AC brake supply

1) If there are no plug connectors of type /KD1, /KDB or /KDD selected, the connection is established via a cable gland

2) Option designation BG1Z is not specified in the type designation due to the limited length available, however, it is encoded in the type code of the MOVILINK® DDI identification.

2.4 Type code for MOVILINK® DDI interface identification

The following diagram shows the structure of the MOVILINK® DDI interface identification:

DI0C00	
DI	DI = MOVILINK® DDI
0	0 = No brake control via MOVILINK® DDI ¹⁾ 1 = Brake control BS1Z via MOVILINK® DDI 2 = Brake control BG1Z via MOVILINK® DDI ²⁾
C	C = Extended electronic nameplate and temperature detection (motor, inverter) E = Extended electronic nameplate, temperature detection of motor and encoder data acquisition (motor, inverter)
00	Reserved

- 1) If a "0" (DI0..) has been selected in the 3rd digit of the DI type code, the motor may be combined with a MOVIMOT® flexible decentralized inverter. In the case of a MOVIDRIVE® or MOVITRAC® control cabinet inverter, an external brake rectifier must be used.
- 2) If a "2" (DI2..) has been selected in the 3rd digit of the DI type code, the motor may not be combined with a MOVIMOT® flexible decentralized inverter. In the case of a MOVIDRIVE® or MOVITRAC® control cabinet inverter, an external brake rectifier may not be used.

3 Mechanical installation

3.1 Terminal box

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It is not permitted to change the position of the terminal box. If the terminal box must be rotated, contact SEW-EURODRIVE.

4 Electrical installation

4.1 Wiring diagram designations

Wiring diagrams for connection with plug connector KD1 (M23):

Part number	Connec-tion type	Designation
63328593	R613K	MOVILINK® DDI + KD1 (M23) / Δ, 6-pole terminal board
63328623	R613Y	MOVILINK® DDI + KD1 (M23) / Y, 6-pole terminal board
63328631	R676Y	MOVILINK® DDI + KD1 (M23) / Y, 6-pole terminal board

Wiring diagrams for connection with plug connector KDB (M40):

Part number	Connec-tion type	Designation
63328739	R713K	MOVILINK® DDI + KDB (M40) / Δ, 6-pole terminal board
63328747	R713Y	MOVILINK® DDI + KDB (M40) / Y, 6-pole terminal board
63328755	R776Y	MOVILINK® DDI + KDB (M40) / Δ, 6-pole terminal board

Wiring diagrams for motors without a brake or brakemotors with external brake control, DI type code DI0...:

Part number	Connec-tion type	Designation
63329050	Z200	MOVILINK® DDI BGext
63329077	Z200A	MOVILINK® DDI + KD1 (M23) BGext
63329093	Z200B	MOVILINK® DDI + KDB (M40) BGext

Wiring diagrams for brakemotors with internal brake control BG1Z, DI type code DI2...:

Part number	Connec-tion type	Designation
63329069	Z201	MOVILINK® DDI BG1Z
63329085	Z201A	MOVILINK® DDI + KD1 (M23) BG1Z
63329115	Z201B	MOVILINK® DDI + KDB (M40) BG1Z

Wiring diagrams for connection with non-plug variant KDD:

Part number	Connec-tion type	Designation
63338734	Z200C	MOVILINK® DDI + KDD (M23)
63338742	Z201C	MOVILINK® DDI + BG.Z + KDD (M23)

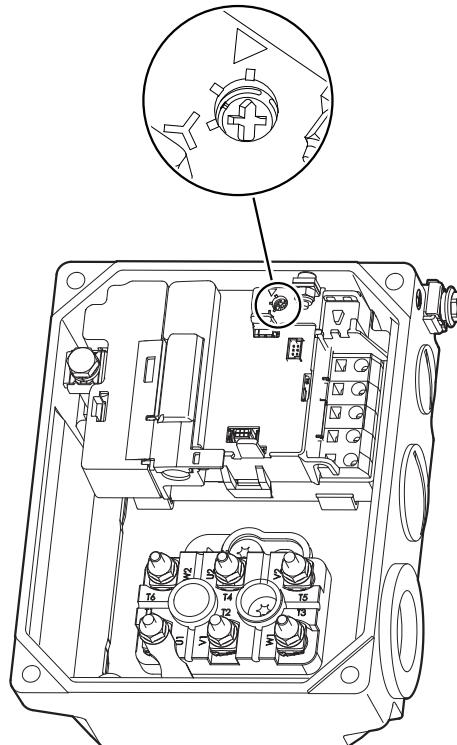
4.2 Terminal box connections

Observe the possible combinations of brake control options according to chapter "Technical data of brake controls BG.Z, BS.Z, B" (→ 56).

1. Connect the motor in the star or delta connection type according to the following schematic and the wiring diagrams in chapter "Wiring diagram designations" (→ 10).



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2. Set the connection type previously wired to the terminal board using the star/delta rotary switch highlighted in the graphic.

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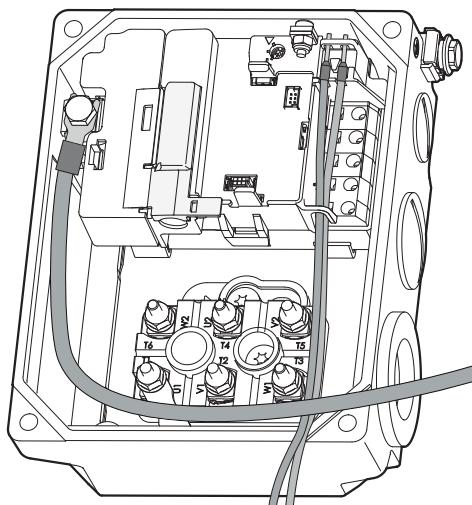
Note that the star or delta wired connection type must correspond to the rotary switch. If not, the drive could malfunction.

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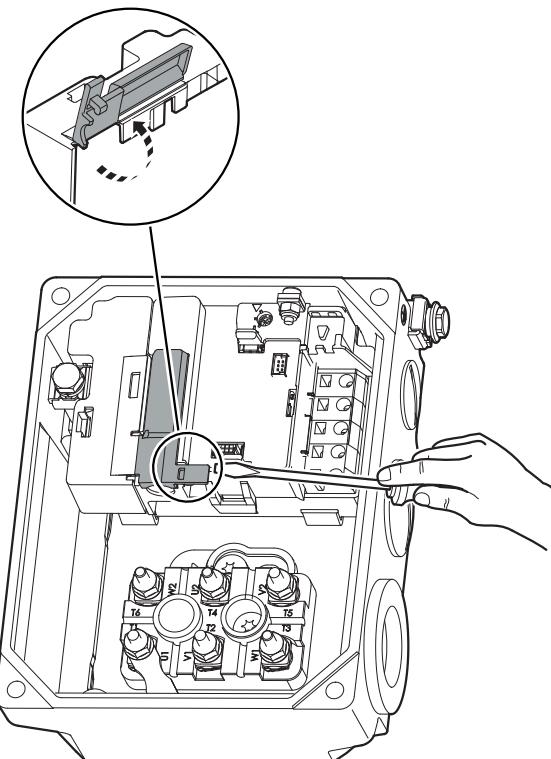
Note that, when delivered, the motor is prewired in the star connection type and the star rotary switch position is preselected.

3. For the brake connection, use cables with a cross section of 1.0 to 1.5 mm² with single conductor end sleeves and plastic collars



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4. Secure the conductor end sleeves of the reserve brake cables as shown in the graphic.
⇒ When screwing the PE cable in place, make sure that the cable does not protrude over the sealing surface of the cover seal.



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5. Use a screwdriver to release the catch mechanism at the point highlighted in the graphic.
6. Insert the FAKRA compatible coaxial connector until it engages in place.
7. Close the cover.

4.3 Connection with plug connectors

The power and signal cables are inserted via plug connectors.

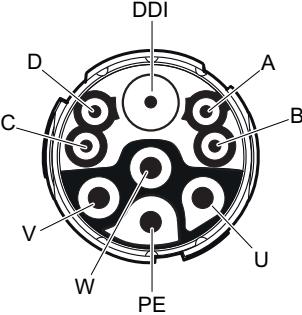
Observe the permissible bending radii of the cables.

Observe the possible combinations of brake control options according to chapter "Technical data of brake controls BG.Z, BS.Z, B" (→ 56).

4.3.1 Motor connection for motors with MOVILINK® DDI interface KD1

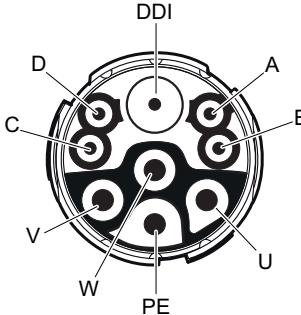
KD1 without brake

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	Reserved	Do not connect
C	Reserved	Do not connect
D	Reserved	Do not connect
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

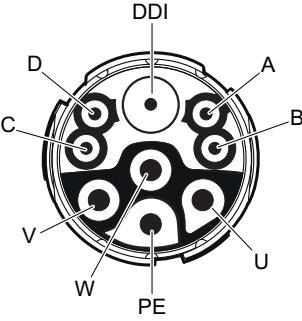
KD1 with brake BE

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	15	Brake connection 15
C	13	Brake connection 13
D	14	Brake connection 14
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

KD1 with integrated brake control BG1Z, 1 × AC 200 – 500 V

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	L2 (N)	L2 (N) connection
C	Reserved	Do not connect
D	L1	L1 connection
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

4.3.2 Motor connection for motors with brake with MOVILINK® DDI interface KDB

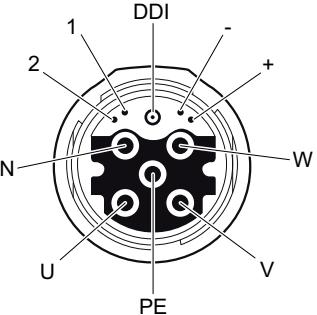
KDB without brake

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	Reserved	Do not connect
N	Reserved	Do not connect
2	Reserved	Do not connect
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

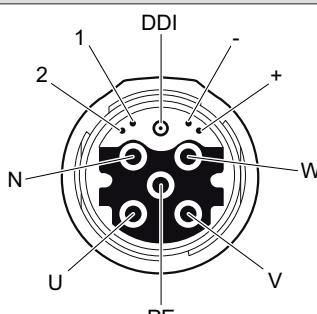
KDB with brake BE

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	15	Brake connection 15
N	13	Brake connection 13
2	14	Brake connection 14
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

KDB with integrated brake control BG1Z, 1 × AC 200 – 500 V

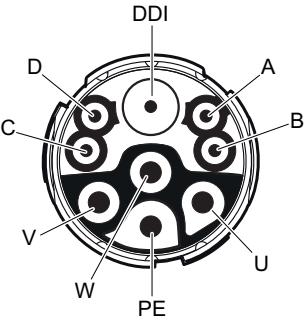
The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	L2 (N)	L2 (N) connection
N	Reserved	Do not connect
2	L1	Brake connection L1
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

4.3.3 Motor connection for motors with MOVILINK® DDI interface KDD

KDD with multi-cable connection

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	Reserved	Do not connect
V	Reserved	Do not connect
W	Reserved	Do not connect
A	Reserved	Do not connect
B	Reserved	Do not connect
C	Reserved	Do not connect
D	Reserved	Do not connect
PE	Reserved	Do not connect
DDI	DDI	MOVILINK® DDI

5 Connection technology

5.1 Cables for MOVILINK® DDI

The MOVILINK® DDI interface requires a coaxial cable for data transmission between motor and inverter.

If the motor control requires a cross section of up to 10 mm², the coaxial cable is routed in a hybrid cable.

With cross sections larger than 10 mm², the motor and brake control and the coaxial cable are routed in separate cables.

SEW-EURODRIVE offers prefabricated cables with M23/M40 plug connectors. If the connection is made via a cable gland, a FAKRAconnector is required on the coaxial cable.

If hybrid cables with open ends on both ends are used, the coaxial cable is connected to the motor and inverter with one FAKRA connector each.

SEW-EURODRIVE also offers hybrid cables that are already equipped with the FAKRA connector on both sides, or raw cables on a roll, for which the FAKRA connectors must be attached. The FAKRAconnectors can be assembled using the "MOVILINK® DDI Tool Set 1".

Single-cable technology up to 10 mm²

Prefabricated hybrid cables for motors with MOVILINK® DDI interface are structured as follows:

- 1 conductor for PE
- 3 conductors for controlling the motor
- 4 conductors for controlling the brake
- 1 coaxial cable for MOVILINK® DDI

With this universal hybrid cable, all variants of the brake can be controlled.

Multi-cable technology larger than 10 mm²

For cross sections larger than 10 mm², the coaxial cable is routed separately in a cable. Individual coaxial cables are available as prefabricated cables.

Six plugging positions are available.

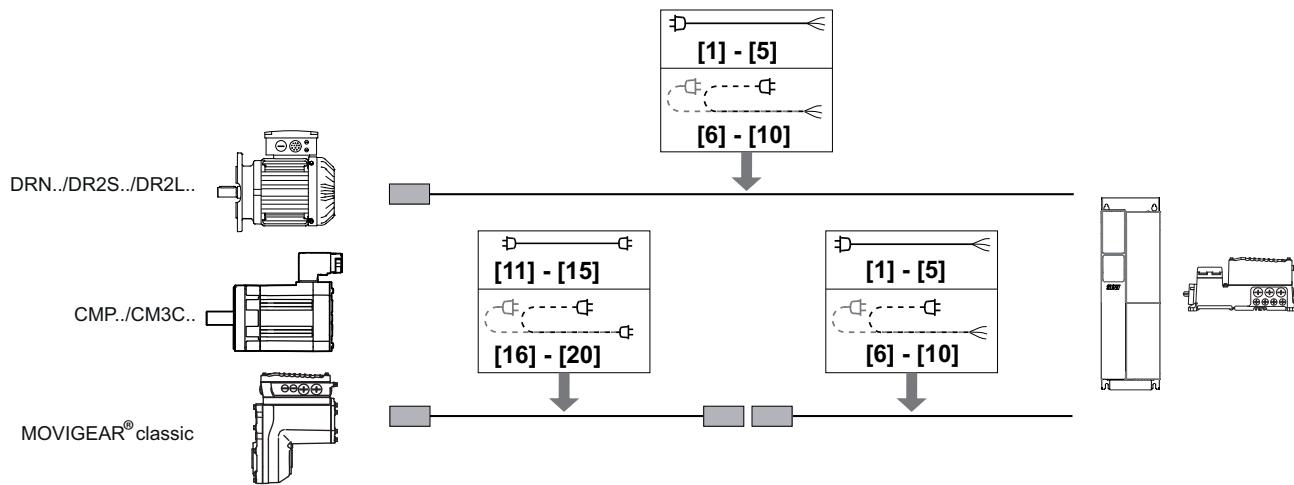
An M23 plug connector is always used for the coaxial cable on the motor side.

The following connection variants are available:

5.1.1 Hybrid cable with connector on the motor side, open end on the inverter side

The cable is used for the following inverters:

- MOVIDRIVE® modular/system/technology
- MOVITRAC® advanced
- MOVIMOT® flexible with cable gland

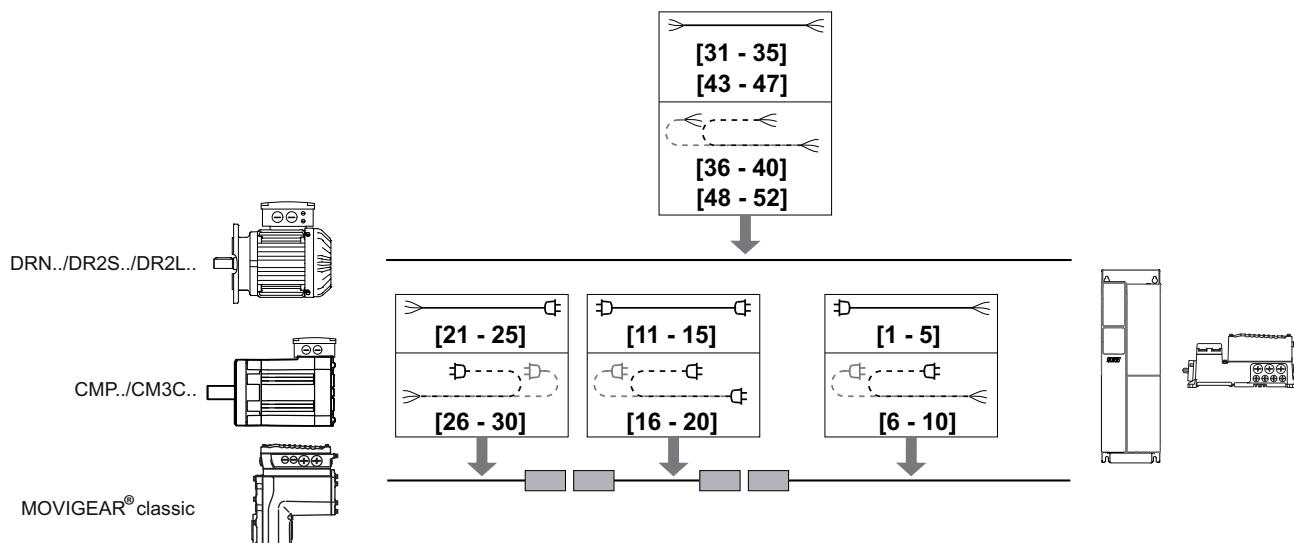


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5.1.2 Hybrid cable with open end on the motor side, open end on the inverter side

The cable is used for the following inverters:

- MOVIDRIVE® modular/system/technology
- MOVITRAC® advanced
- MOVIMOT® flexible with cable gland

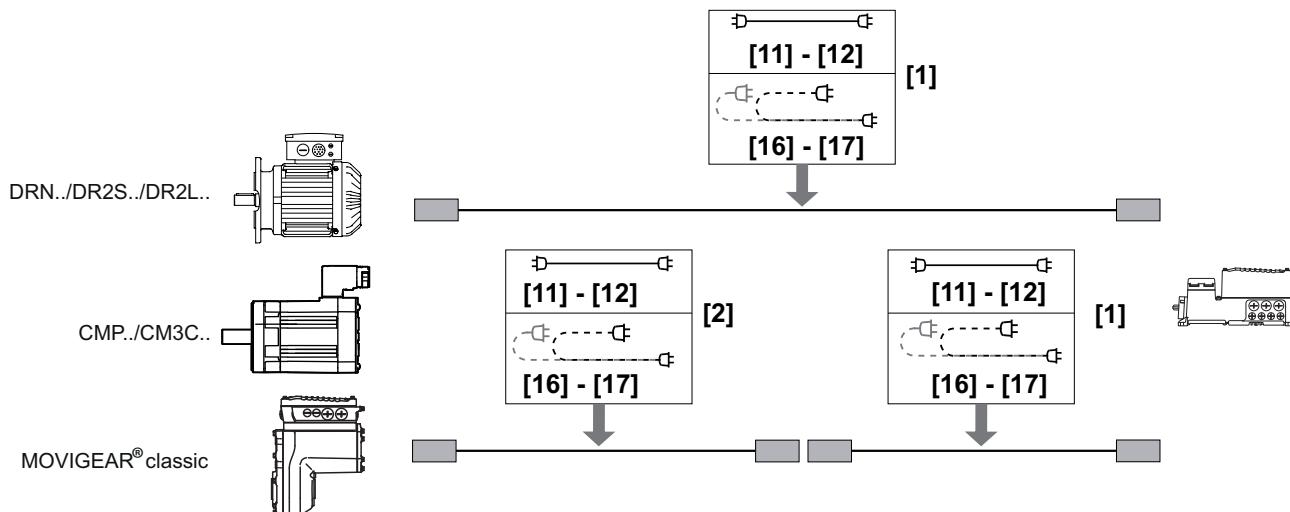


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5.1.3 Hybrid cable with connector on the motor side, connector on the inverter side

The cable is used for the following inverters:

- MOVIMOT® flexible with plug connector

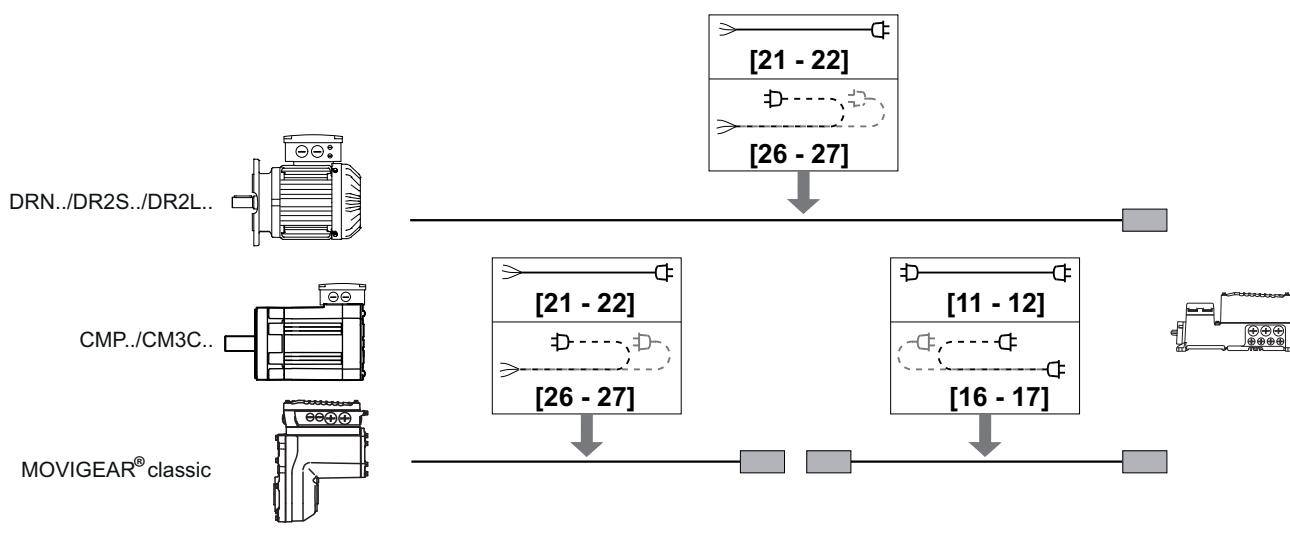


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5.1.4 Hybrid cable with open end on the motor side, connector on the inverter side

The cable is used for the following inverters:

- MOVIMOT® flexible



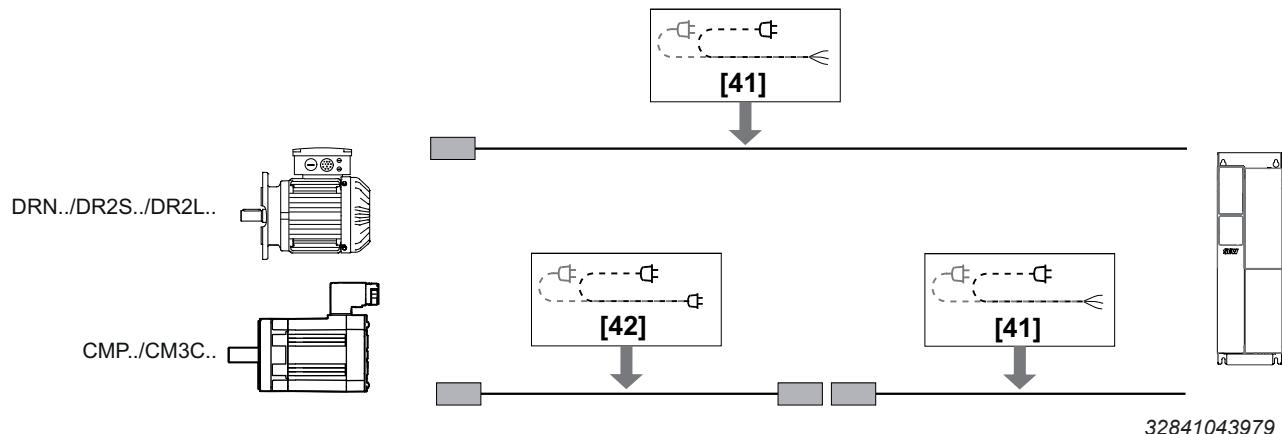
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5.1.5 Coaxial cable with connector on the motor side, open end on the inverter side

In the event of a cross section greater than 10 mm², the coaxial cable is required for motor control conductors and includes the signal cable for the MOVILINK® DDI connection. The cable for controlling the motor and the brake must be routed separately.

The cable is used for the following inverters:

- MOVIDRIVE® modular/system/technology
- MOVITRAC® advanced



5.1.6 Cable tables

Number	Part number	Cross section in mm ²	Installation type	Motor connection	Motor side	Inverter side
[1]	28123808	4 × 1.5 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	open
[2]	28123816	4 × 2.5 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	open
[3]	28123824	4 × 4 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	open
[4]	28123832	4 × 6 + 4 × 1.5 + coaxial cable	Fixed installation	SDB/KDB	M40	open
[5]	28123840	4 × 10 + 4 × 1.5 + coaxial cable	Fixed installation	SDB/KDB	M40	open
[6]	28123743	4 × 1.5 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	open
[7]	28123751	4 × 2.5 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	open
[8]	28123778	4 × 4 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	open
[9]	28123786	4 × 6 + 4 × 1.5 + coaxial cable	Cable carrier installation	SDB/KDB	M40	open
[10]	28123794	4 × 10 + 4 × 1.5 + coaxial cable	Cable carrier installation	SDB/KDB	M40	open
[11]	28123905	4 × 1.5 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	M23
[12]	28123913	4 × 2.5 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	M23
[13]	28123921	4 × 4 + 4 × 1 + coaxial cable	Fixed installation	SD1/KD1	M23	M23
[14]	28123948	4 × 6 + 4 × 1.5 + coaxial cable	Fixed installation	SDB/KDB	M40	M40
[15]	28123956	4 × 10 + 4 × 1.5 + coaxial cable	Fixed installation	SDB/KDB	M40	M40
[16]	28123859	4 × 1.5 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	M23
[17]	28123867	4 × 2.5 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	M23
[18]	28123875	4 × 4 + 4 × 1 + coaxial cable	Cable carrier installation	SD1/KD1	M23	M23
[19]	28123883	4 × 6 + 4 × 1.5 + coaxial cable	Cable carrier installation	SDB/KDB	M40	M40
[20]	28123891	4 × 10 + 4 × 1.5 + coaxial cable	Cable carrier installation	SDB/KDB	M40	M40

Number	Part number	Cross section in mm ²	Installation type	Motor connection	Motor side	Inverter side
[21]	28124367	4 × 1.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	M23
[22]	28124375	4 × 2.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	M23
[23]	28124383	4 × 4 + 4 × 1 + coaxial cable	Fixed installation	KD	open	M23
[24]	28143884	4 × 6 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	M40
[25]	28143892	4 × 10 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	M40
[26]	28124332	4 × 1.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	M23
[27]	28124340	4 × 2.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	M23
[28]	28124359	4 × 4 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	M23
[29]	28143868	4 × 6 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	M40
[30]	28143876	4 × 10 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	M40
[31]	28152395	4 × 1.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[32]	28152409	4 × 2.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[33]	28152417	4 × 4 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[34]	28152425	4 × 6 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	open
[35]	28152433	4 × 10 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	open
[36]	28152441	4 × 1.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[37]	28152468	4 × 2.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[38]	28152476	4 × 4 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[39]	28152484	4 × 6 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	open
[40]	28152492	4 × 10 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	open

Number	Part number	Cross section in mm ²	Installation type	Motor connection	Motor side	Inverter side
[41]	28129431	Coaxial cable	Cable carrier installation	SMCD/ SBCD/ KDD	M23	open
[42]	28138376	Coaxial cable	Cable carrier installation	SMCD/ SBCD/ KDD	M23	M23

The prefabricated cables "open on the motor side" and "open on the inverter side" (lines 31 – 40) can also be supplied as cable reels in lengths 30 m, 100 m, and 200 m (lines 43 – 52). These cables are not prefabricated.

For more information on assembly, refer to the addendum to the "MOVILINK® DDI Tool Set 1" operating instructions.

Number	Part number	Cross section in mm ²	Installation type	Motor connection	Motor side	Inverter side
[43]	28123395	4 × 1.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[44]	28123409	4 × 2.5 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[45]	28123417	4 × 4 + 4 × 1 + coaxial cable	Fixed installation	KD	open	open
[46]	28123425	4 × 6 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	open
[47]	28123433	4 × 10 + 4 × 1.5 + coaxial cable	Fixed installation	KD	open	open
[48]	28123336	4 × 1.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[49]	28123344	4 × 2.5 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[50]	28123352	4 × 4 + 4 × 1 + coaxial cable	Cable carrier installation	KD	open	open
[51]	28123360	4 × 6 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	open
[52]	28123379	4 × 10 + 4 × 1.5 + coaxial cable	Cable carrier installation	KD	open	open

5.2 Motor cables for motors with MOVILINK® DDI interface

The following tables list the cables available for this connection.

5.2.1 Connecting the motor cables for motors without brake with MOVILINK® DDI interface

Connecting the cables with connectors on the motor end for the following motors:

- DRN../DR2S../DR2L.. asynchronous motors
- CMP../CM3C.. synchronous motors
- MOVIGEAR® classic

The following table shows the core assignment of the cables:

MOVIDRIVE® modular/system/technology, MOVITRAC® advanced

Motor side				Inverter side			
M23	M40	Signal	Conductor color	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	Reserved	Yellow	YE	A	Not prefabricated	Do not connect
B	+	Reserved	Orange	OG	B	Not prefabricated	Do not connect
C	N	Reserved	Pink	PK	C	Not prefabricated	Do not connect
D	2	Reserved	Violet	VT	D	Not prefabricated	Do not connect
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

MOVIMOT® flexible

Motor side			Inverter side			• MOVIMOT® flexible	
M23	M40	Signal	Conductor color	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	A	Yellow	YE	A	Not prefabricated	Connection A
B	+	B	Orange	OG	B	Not prefabricated	Connection B
C	N	C	Pink	PK	C	Not prefabricated	Connection C
D	2	D	Violet	VT	D	Not prefabricated	Connection D
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

5.2.2 Connecting the motor cables for motors with BE or BZ brake with MOVILINK® DDI interface

Connecting the cables with connectors on the motor end for the following motors:

- DRN../DR2S../DR2L.. asynchronous motors
- CM3C.. synchronous motors

The following table shows the core assignment of the cables:

MOVIDRIVE® modular/system/technology, MOVITRAC® advanced

Motor side				Inverter side		<ul style="list-style-type: none"> • MOVIDRIVE® modular • MOVIDRIVE® system • MOVIDRIVE® technology • MOVITRAC® advanced 	
M23	M40	Signal	Contact	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	Reserved	Yellow	YE	A	Not prefabricated	Do not connect
B	+	15	Orange	OG	B	Not prefabricated	Brake connection 15
C	N	13	Pink	PK	C	Not prefabricated	Brake connection 13
D	2	14	Violet	VT	D	Not prefabricated	Brake connection 14
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

MOVIMOT® flexible

Motor side				Inverter side		• MOVIMOT® flexible	
M23	M40	Signal	Conductor color	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	A	Yellow	YE	A	Not prefabricated	Connection A
B	+	B	Orange	OG	B	Not prefabricated	Connection B
C	N	C	Pink	PK	C	Not prefabricated	Connection C
D	2	D	Violet	VT	D	Not prefabricated	Connection D
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

5.2.3 Connecting the motor cables for motors with BK or BP brake with MOVILINK® DDI interface

Connecting the cables with connectors on the motor end for the following motors:

- CMP../CM3C. synchronous motors

The following table shows the core assignment of the cables:

MOVIDRIVE® modular/system/technology, MOVITRAC® advanced

Motor side				Inverter side		<ul style="list-style-type: none"> • MOVIDRIVE® modular • MOVIDRIVE® system • MOVIDRIVE® technology • MOVITRAC® advanced 	
Contact M23	Contact M40	Signal	Conductor color	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	Brake -	Yellow	YE	A	Not prefabricated	Brake connection -
B	+	Reserved	Orange	OG	B	Not prefabricated	Do not connect
C	N	Reserved	Pink	PK	C	Not prefabricated	Do not connect
D	2	Brake +	Violet	VT	D	Not prefabricated	Brake connection +
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

MOVIMOT® flexible

Motor side				Inverter side			• MOVIMOT® flexible
M23	M40	Signal	Conductor color IEC 60757	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	A	Yellow	YE	A	Not prefabricated	Connection A
B	+	B	Orange	OG	B	Not prefabricated	Connection B
C	N	C	Pink	PK	C	Not prefabricated	Connection C
D	2	D	Violet	VT	D	Not prefabricated	Connection D
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

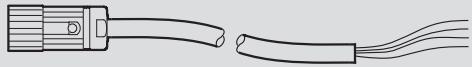
Insulate each unconnected conductor end.

5.2.4 Connecting the motor cables for motors with integrated BGZ brake control

Connecting the cables with connectors on the motor end for the following motors:

- DRN../DR2S../DR2L.. asynchronous motors
- CMP../CM3C. synchronous motors

The following table shows the core assignment of the cables:



Contact M23		Signal		Con- duc-tor color	Conductor color IEC 60757	Identifi- cation	Assembly	Description
M23	M40							
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U	
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V	
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W	
A	1	Reserved	Yellow	YE	A	Not prefabricated	Do not connect	
B	+	L2	Orange	OG	B	Not prefabricated	L2 (N) connection	
C	N	Reserved	Pink	PK	C	Not prefabricated	Do not connect	
D	2	L1	Violet	VT	D	Not prefabricated	L1 connection	
PE	PE	PE	Yellow/ green	YE/GN		Not prefabricated	PE connection	
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI	

Insulate each unconnected conductor end.

5.2.5 Connecting the motor cables for motors with integrated BSZ brake control

Connecting the cables with connectors on the motor end for the following motors:

- CMP../CM3C. synchronous motors

The following table shows the core assignment of the cables:

Motor side				Inverter side		<ul style="list-style-type: none"> MOVIDRIVE® modular MOVIDRIVE® system MOVIDRIVE® technology MOVITRAC® advanced 	
Contact M23	Contact M40	Signal	Conduc-tor color	Conductor color IEC 60757	Identifi-cation	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	GND	Yellow	YE	A	Not prefabricated	GND connection
B	+	DC 23 V	Orange	OG	B	Not prefabricated	DC 24 V connection
C	N	Reserved	Pink	PK	C	Not prefabricated	Do not connect
D	2	Reserved	Violet	VT	D	Not prefabricated	Do not connect
PE	PE	PE	Yellow/ green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

5.2.6 Connecting the motor cables for motors with integrated braking resistor

Connecting the cables with connectors on the motor end for the following motors:

- MOVIGEAR® classic

The following table shows the core assignment of the cables:

MOVIDRIVE® modular/system/technology, MOVITRAC® advanced

Motor side						Inverter side	• MOVIDRIVE® modular
							• MOVIDRIVE® system
							• MOVIDRIVE® technology
							• MOVITRAC® advanced
Contact M23	Contact M40	Signal	Con- ductor color	Conductor color IEC 60757	Identifi- cation	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	Reserved	Yellow	YE	A	Not prefabricated	Do not connect
B		Braking resistor	Orange	OG	B	Not prefabricated	Braking resistor connec- tion
C		Braking resistor	Pink	PK	C	Not prefabricated	Braking resistor connec- tion
D	2	Reserved	Violet	VT	D	Not prefabricated	Do not connect
PE	PE	PE	Yellow/ green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

Insulate each unconnected conductor end.

MOVIMOT® flexible

Motor side			Inverter side			• MOVIMOT® flexible	
M23	M40	Signal	Conductor color	Conductor color IEC 60757	Identification	Assembly	Description
U	U	U	Black	BK	U/L1	Not prefabricated	Motor connection phase U
V	V	V	Black	BK	V/L2	Not prefabricated	Motor connection phase V
W	W	W	Black	BK	W/L3	Not prefabricated	Motor connection phase W
A	1	A	Yellow	YE	A	Not prefabricated	Connection A
B		B	Orange	OG	B	Not prefabricated	Connection B
C		C	Pink	PK	C	Not prefabricated	Connection C
D	2	D	Violet	VT	D	Not prefabricated	Connection D
PE	PE	PE	Yellow/green	YE/GN		Not prefabricated	PE connection
DDI	DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

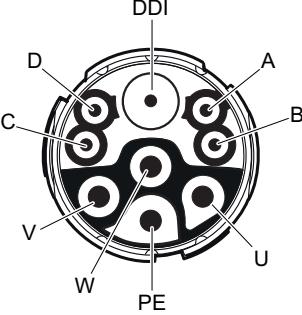
Insulate each unconnected conductor end.

5.2.7 Representation of connections

Motor connection for motors with MOVILINK® DDI interface KD1

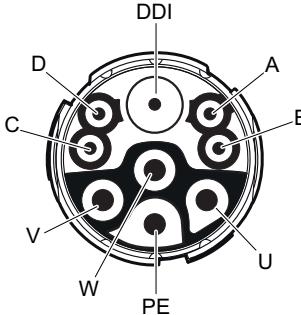
KD1 without brake

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	Reserved	Do not connect
C	Reserved	Do not connect
D	Reserved	Do not connect
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

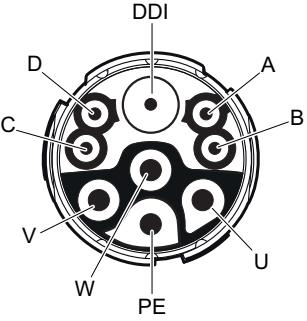
KD1 with brake BE

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	15	Brake connection 15
C	13	Brake connection 13
D	14	Brake connection 14
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

KD1 with integrated brake control BG1Z, 1 × AC 200 – 500 V

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M23, male, male thread, TE Connectivity – Intercontec products, series 723, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
A	Reserved	Do not connect
B	L2 (N)	L2 (N) connection
C	Reserved	Do not connect
D	L1	L1 connection
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

Motor connection for motors with brake with MOVILINK® DDI interface KDB**KDB without brake**

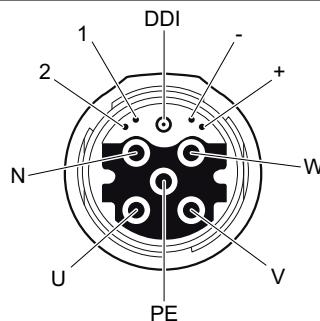
The wiring diagram of the plug connector depicts the contact end of the connections.

Function

Motor connection for motors with MOVILINK® DDI interface

Connection type

M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact

Connection diagram**Assignment**

Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	Reserved	Do not connect
N	Reserved	Do not connect
2	Reserved	Do not connect
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

KDB with brake BE

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
<p>The diagram shows a circular connector with 10 contacts. Contact 1 is at the top, contact 2 is below it. Contact N is on the left, U is at the bottom-left, V is at the bottom-right, W is on the right, and PE is at the bottom. Contact + is above V, and contact - is above W. The central contact is labeled DDI.</p>		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	15	Brake connection 15
N	13	Brake connection 13
2	14	Brake connection 14
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

KDB with integrated brake control BG1Z, 1 × AC 200 – 500 V

The wiring diagram of the plug connector depicts the contact end of the connections.

Function		
Motor connection for motors with MOVILINK® DDI interface		
Connection type		
M40, male, male thread, TE Connectivity – Intercontec products, series 740, SEW-EURODRIVE insert, SpeedTec equipment, coding ring: without, protected against contact		
Connection diagram		
Assignment		
Contact	Signal	Description
U	U	Motor connection, phase U
V	V	Motor connection, phase V
W	W	Motor connection, phase W
1	Reserved	Do not connect
+	L2 (N)	L2 (N) connection
N	Reserved	Do not connect
2	L1	Brake connection L1
PE	PE	PE connection
DDI	DDI	MOVILINK® DDI

5.2.8 Connecting the coaxial cables with separate routing of power and signal cable

The power and signal cables can only be routed together up to a cable cross section of 10 mm². With larger cable cross sections, the power cable is routed separately from the signal cable.



Motor side

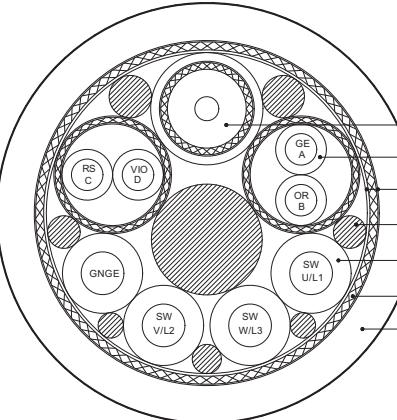
Inverter side

- MOVIDRIVE® modular
- MOVIDRIVE® system
- MOVIDRIVE® technology
- MOVITRAC® advanced

Contact M23	Signal	Con- ductor color	Conductor color IEC 60757	Identifi- cation	Assembly	Description
DDI	DDI	Violet	VT		Coaxial connector	MOVILINK® DDI

5.3 Cable specifications

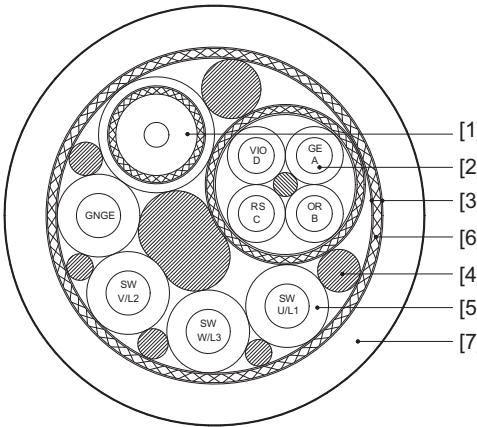
5.3.1 Cable carrier installation

Type	LEHC 005796	LEHC 005770	LEHC 005771	LEHC 005772	LEHC 005773	LEC 005724
Part number of bulk cable, not prefabricated	28123336	28123344	28123352	28123360	28123379	25672568
Cross section	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²	-
Mechanical design	 29346392715					
[1]	Coaxial cable Conductor Dielectric Shielding Sheath Diameter Color					
[1]	Coax Z50 in accordance with RG58 Stranded copper wire, tinned, 19 × 0.182 mm Polypropylene Ø 2.95 Braided copper wire, tinned, 0.128 mm Optical coverage at least 90%, TPE 4.2 mm Violet					
[2]	Cores 2 shielded conductor pairs 2 × 1.0 mm ² Stranded copper wire, bare Single wire 0.15 mm in accordance with DIN EN 60228 class 6 IEC 60228 Class 6					
[2]	Insulation Polypropylene Shielding Braided copper wire, 0.10 mm, tinned Braided copper wire, 0.128 mm, tinned optical coverage at least 85%					
[2]	Diameter 2.1 mm 2.1 mm 2.1 mm 2.4 mm 2.4 mm					
[2]	Colors Yellow with black label A Orange with black label B Pink with black label C Purple with black label D					
[3]	Banding -					
[4]	Filler -					

Type	LEHC 005796	LEHC 005770	LEHC 005771	LEHC 005772	LEHC 005773	LEC 005724
Part number of bulk cable, not prefabricated	28123336	28123344	28123352	28123360	28123379	25672568
Cross section	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²	-
[5]	Cores	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²
Conductor	Stranded copper wire, bare					-
	Single wire 0.15 mm	Single wire 0.15 mm	Single wire 0.15 mm	Single wire 0.2 mm	Single wire 0.2 mm	-
	in accordance with DIN EN 60228 class 6					-
	IEC 60228 Class 6					-
Diameter	3.0 mm	3.6 mm	3.75 mm	4.6 mm	5.8 mm	-
Insulation	Polypropylene					-
Colors	Green/yellow, black with label: U/L1; V/L2; W/L3					-
[6]	Shield	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.2 mm	Braided tinned copper wires, 0.13 mm
optical coverage at least 85%						
[7]	Outer cable jacket	Polyurethane, flame retardant, halogen-free				
Color	Orange matt					Black matt
	Label	SEW-EURODRIVE 28123336 4 × 1.5 + 2 × 2 × 1C + 1 × Z50	SEW-EURODRIVE 28123344 4 × 2.5 + 2 × 2 × 1C + 1 × Z50	SEW-EURODRIVE 28123352 4 × 4.0 + 2 × 2 × 1C + 1 × Z50	SEW-EURODRIVE 28123360 4 × 6.0 + 2 × 2 × 1.5C + 1 × Z50	SEW-EURODRIVE 28123379 4 × 10 + 2 × 2 × 1.5C + 1 × Z50
	LEHC005796 Rev. 0 E47543- LIL C UL US	LEHC 005770 Rev.0 E47543- LIL C UL US	LEHC 005771 Rev.0 E47543- LIL C UL US	LEHC 005772 Rev.0 E47543- LIL C UL US	LEHC 005773 Rev.0 E47543- LIL C UL US	LEHC 005951 Rev.0 E47543- LIL C UL US
	AWM STYLE 21223 I/II A/B 80 °C 1000V FT1 Week/year of production					AWM STYLE 11892 I/II A/B 80 °C 300V FT1 Week/year of production
	Diameter	15.7 mm	16.7 mm	17.0 mm	19.7 mm	22.1 mm
	15.7 mm	16.7 mm	17.0 mm	19.7 mm	22.1 mm	7.0 mm
	Electrical properties					
	Operating voltage conductors V ₀ /V	0.6 kV/1.0 kV				0.3 kV/0.3 kV
	Operating voltage according to UL style 21223	Max. 1000 V				Max. 300 V
	Surge impedance coaxial cable	50 Ω ± 2 Ω				
Mechanical properties						
	Bending radius	min. 3 × outer diameter for one-time installation min. 5 × outer diameter for fixed installation min. 10 × outer diameter for cable carriers				min. 5 × outer diameter for one-time installation min. 8 × outer diameter for fixed installation min. 20 × outer diameter in the cable carrier
	Travel speed	Max. 5 m/s				3 m/s
	Acceleration	max. 20 m/s ²				
	Bending cycles	min. 5 × 10 ⁶				min. 3 × 10 ⁶
	Torsional stability	±180 °/m				
	Torsional cycles	maximum 1 million cycles (at ±180 °/m)				
	Mass	332 kg/km	392 kg/km	444 kg/km	626 kg/km	827 kg/km
Thermal properties						
	Operating temperature	Fixed installation: -40 °C to +90 °C Cable carrier installation: -30 °C to +90 °C				

Type	LEHC 005796	LEHC 005770	LEHC 005771	LEHC 005772	LEHC 005773	LEC 005724
Part number of bulk cable, not prefabricated	28123336	28123344	28123352	28123360	28123379	25672568
Cross section	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²	-
Operating temperature according to cURus	Fixed installation: -40 °C to +80 °C Cable carrier installation: -30 °C to +80 °C					
Chemical properties						
Oil resistance	DIN VDE 0282-10/HD 22.10 S2					DIN EN 50363-10-2
Flame retardant	UL 1581 section 1060 Vertical Flame Test (FT1) CSA C22.2 No.3-92 Vertical Flame Test (FT1) IEC 60332-1-2					
Other features						
	EU Directive 2011/65/EU (RoHS), Free of paint-wetting impairment substances, Halogen-free according to IEC 60754-1, General fuel resistance, General resistance to acids, alkalis, and cleaning agents, General resistance against dusts, General resistance against microbes and fungi, Generally hydrolysis-resistant, General resistance against UV radiation					
Approvals						
	UL Subject 758, Style 21223 CSA – C22.2 No. 210 cURus E47543 UL Style 21223 80 °C 1000V FT1 cUL AWM I/II A/B 80 °C 1000V FT1					UL Subject 758, Style 11892 CSA – C22.2 No. 210 cURus E47543 UL Style 11892 80 °C 300V FT1 cUL AWM I/II A/B 80 °C 300V FT1

5.3.2 Fixed installation

Type	LEHC 005775	LEHC 005776	LEHC 005777	LEHC 005778	LEHC 005779	
Part number of bulk cable, not prefabricated	28123395	28123409	28123417	28123425	28123433	
Cross section	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²	
Mechanical design	 <p>29346395147</p>					
[1]	Coaxial cable	Coax Z50 in accordance with RG58				
	Conductor	Stranded copper wire, tinned, 19 × 0.182 mm				
	Dielectric	Polypropylene Ø 2.95				
	Shielding	Braided copper wire, tinned, 0.128 mm				
		Optical coverage at least 90%,				
	Sheath	TPE				
	Diameter	4.2 mm				
	Color	Violet				
[2]	Cores	Shielded element 4 × 1.0 mm ²	Shielded element 4 × 1.0 mm ²	Shielded element 4 × 1.0 mm ²	Shielded element 4 × 1.5 mm ²	Shielded element 4 × 1.5 mm ²
		Stranded copper wire, bare				
		Single wire 0.20 mm	Single wire 0.20 mm	Single wire 0.20 mm	Single wire 0.25 mm	Single wire 0.25 mm
		in accordance with DIN EN 60228 class 5				
		IEC 60228 Class 5				
	Insulation	Polypropylene				
	Shielding	Braided copper wire, 0.128 mm, tinned				
		optical coverage at least 85%				
	Diameter	2.1 mm	2.1 mm	2.1 mm	2.35 mm	2.35 mm
	Colors	Yellow with black label A				
		Orange with black label B				
		Pink with black label C				
		Purple with black label D				
[3]	Banding	-	-	-	-	-
[4]	Filler	-	-	-	-	-
[5]	Cores	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²
	Conductor	Stranded copper wire, bare				
		Single wire 0.25 mm	Single wire 0.25 mm	Single wire 0.30 mm	Single wire 0.30 mm	Single wire 0.40 mm
		in accordance with DIN EN 60228 class 5				
		IEC 60228 Class 5				
	Diameter	3.0 mm	3.6 mm	3.75 mm	4.7 mm	5.8 mm
	Insulation	Polypropylene				
	Colors	Green/yellow, black with label: U/L1; V/L2; W/L3				
[6]	Shield	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.15 mm	Braided tinned copper wires, 0.20 mm	Braided tinned copper wires, 0.20 mm
		optical coverage at least 85%				

Type	LEHC 005775	LEHC 005776	LEHC 005777	LEHC 005778	LEHC 005779
Part number of bulk cable, not prefabricated	28123395	28123409	28123417	28123425	28123433
Cross section	4 × 1.5 mm ²	4 × 2.5 mm ²	4 × 4.0 mm ²	4 × 6.0 mm ²	4 × 10 mm ²
[7] Outer cable jacket	PVC				
Color	Orange				
Label	SEW-EURODRIVE 28123395 4 × 1.5 + 4 × 1C + 1 × Z50	SEW-EURODRIVE 28123409 4 × 2.5 + 4 × 1C + 1 × Z50	SEW-EURODRIVE 28123417 4 × 4.0 + 4 × 1C + 1 × Z50	SEW-EURODRIVE 28123425 4 × 6.0 + 4 × 1.5C + 1 × Z50	SEW-EURODRIVE 28123433 4 × 10 + 4 × 1.5C + 1 × Z50
	LEHC005775 Rev. 0 E47543-LIL  US	LEHC005776 Rev. 0 E47543-LIL  US	LEHC 005777 Rev.0 E47543-LIL  US	LEHC 005778 Rev.0 E47543-LIL  US	LEHC 005779 Rev.0 E47543-LIL  US
	AWM STYLE 2570 I/II A/B 80 °C 1000 V FT1 Week/year of production				
Diameter	15.2 mm	16.1 mm	16.4 mm	19.0 mm	21.8 mm
Electrical properties					
Operating voltage conductors V ₀ /V	0.6 kV/1.0 kV				
Operating voltage according to UL style 21223	Max. 1000 V				
Surge impedance coaxial cable	50 Ω ± 2 Ω				
Mechanical properties					
Bending radius	min. 3 × outer diameter for one-time installation min. 5 × outer diameter for fixed installation min. 10 × outer diameter if moved occasionally				
Mass	312 kg/km	361 kg/km	412 kg/km	576 kg/km	791 kg/km
Thermal properties					
Operating temperature	Fixed installation: -40 °C to +90 °C If moved occasionally: -10 °C to +90 °C				
Operating temperature according to cURus	Fixed installation: -40 °C to +80 °C If moved occasionally: -10 °C to +80 °C				
Chemical properties					
Oil resistance	DIN EN 50363-4-1 (test method according to DIN EN 60811-404)				
Flame retardant	UL 1581 section 1060 Vertical Flame Test (FT1) CSA C22.2 No.3-92 Vertical Flame Test (FT1) IEC 60332-1-2				
Other features	EU Directive 2011/65/EU (RoHS)				

5.4 Self-assembly of the DDI cable

SEW-EURODRIVE offers assembled hybrid cables. The cable side with the M23 or M40 plug connector can only be assembled by SEW-EURODRIVE. The open side can be assembled by the customer if, for example, a cable needs to be shortened.

When doing this, a special tool set is only required for the coaxial cable; all other conductors are crimped with standard ring lugs or standard cable lugs.

The "MOVILINK® DDI Tool Set 1" contains stripping and crimping pliers to crimp the coaxial connector according to the FAKRA standard. The tool set contains the material required for 50 plug-in connections. The coaxial connector on the cable is the same for the connection to a motor or inverter.

You can assemble the MOVILINK® DDI cables yourself by using the following information.

5.4.1 MOVILINK® DDI case with tool set 1

MOVILINK® DDI tool set 1

MOVILINK® DDI tool set 1 contains the tool for crimping the cables. Tool set 1 can be ordered using part number 28250923.

Qty.	Description	Type designation/part number
1	Mini systainer	
1	Stripping pliers	QWZ WEG 01, QWZ WEG 61
1	Crimping pliers	QWZ WEG 01, QWZ WEG 62
1	Rotary cutter 1	QWZ WEG 61M1
1	Rotary cutter 2	QWZ WEG 61M2
1	MOVILINK® DDI crimp parts 1	28250931
1	Spacer A/B	QWZ WEG 61DA
1	Spacer C/D	QWZ WEG 61DC
1	Spacer E/F	QWZ WEG 61DE

MOVILINK® DDI crimp parts 1

The "MOVILINK® DDI crimp parts 1" package contains parts for assembling 50 plug connectors.

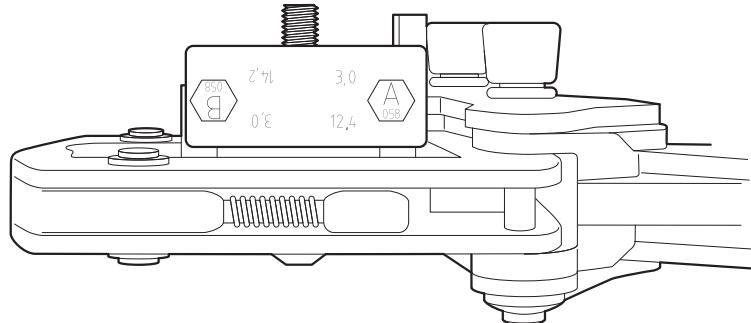
This set is part of "MOVILINK® DDI tool set 1" and can be re-ordered separately by quoting part number 28250931.

Qty.	Description
120	Inner conductor contact
50	Outer conductor contact
50	Crimp sleeves
50	Housing
50	Insulating tubing 230 mm
100	Insulating end cap

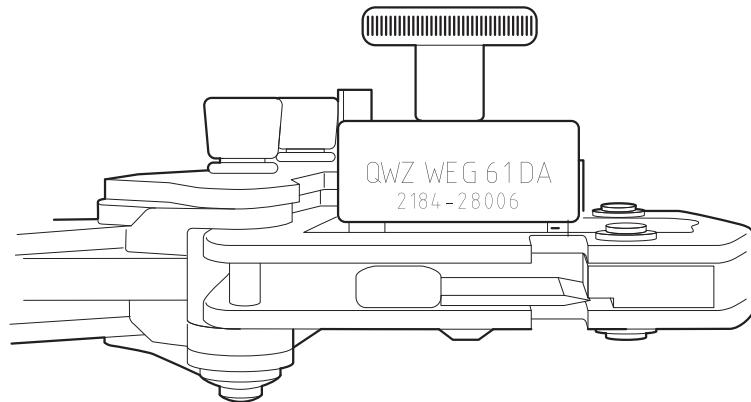
5.4.2 Preparing tools and cables

Preparing the tools

The stripping pliers must be equipped with the spacer QWZ WEG 61DA. The spacer must be mounted in position B as shown in the following figure.



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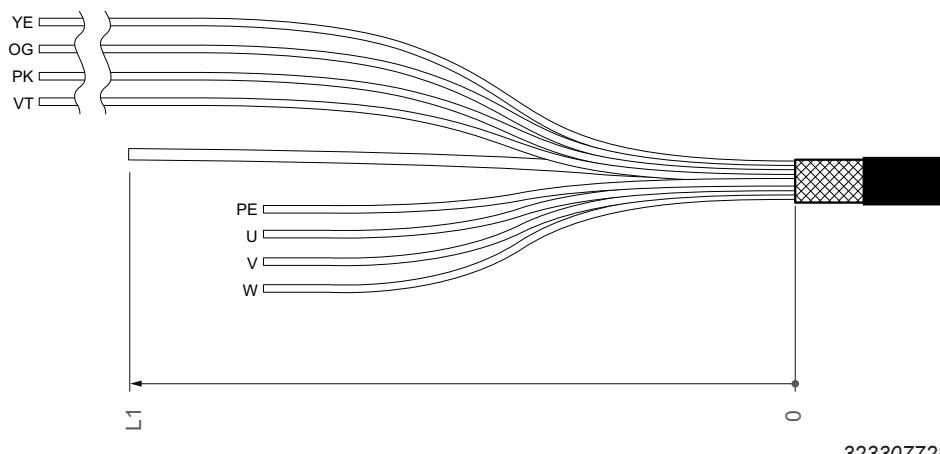
Rotary cutter 2 is used for stripping.

Cutting the coaxial cable to length

Depending on use, the coaxial cable must be cut to length on the motor side or inverter side in such a way that it corresponds to the motor or the inverter.

Cut the coaxial cable to length L1 before starting assembly of the plug connector.

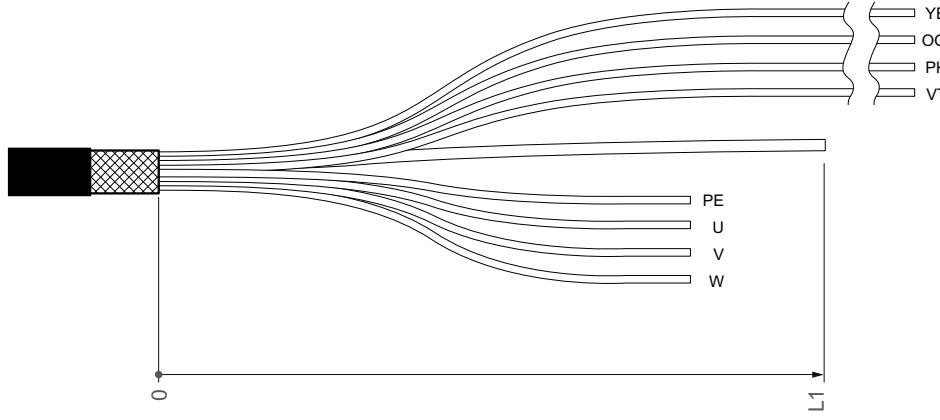
Cable open at motor end



32330772875

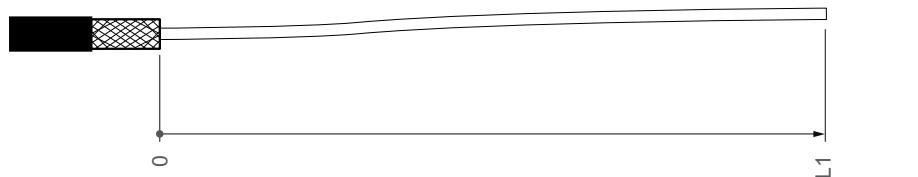
Motor	Size	Cable length L1 in mm
DRN.., DR2S.., DR2L..	71 – 200	150
CMP..	50 – 112	150
CM3C..	63 – 100	150
MGF classic 1	1 – 4	150

Cable open at inverter side



31208581771

Solo cable open at inverter side



32381018763

5.4.3 Crimping and assembling the connector

Assembling the plug connector

The instructions for fitting the plug connector onto the coaxial cable are included in "MOVILINK® DDI tool set 1".

In addition, you can download a video instruction in German or English that shows the individual steps for fitting the plug connector onto the coaxial cable. The instruction is available at the following link:

German: <https://www.youtube.com/watch?v=ZD5oiT5hqaI>



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English: https://www.youtube.com/watch?v=X_gHIkaUA04



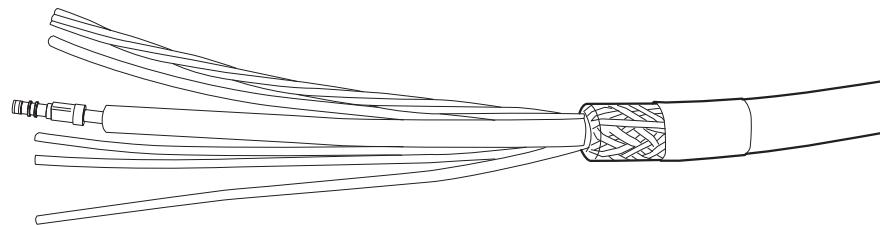
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Using the insulating tubing

If the coaxial cable is installed in the terminal box of DRN..., DR2S... or DR2L... motors, the coaxial cable must additionally be protected mechanically and electrically with the insulating tubing.

The insulating tubing is included in the "MOVILINK® DDI crimp parts 1" package.

After crimping the connector and **before** fitting the connector housing, push the insulating tubing over the coaxial cable.

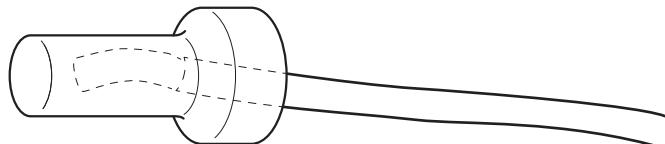


32420415499

Cut the insulating tubing to the appropriate length. The insulating tubing must cover the coaxial cable completely.

Unconnected wires

All wires that are not connected, such as brake wires, must be individually insulated and mechanically fixed in the terminal box, control cabinet or wiring space of MOVIMOT® flexible. The enclosed insulating caps can be used for insulation.



32420418571

It is not permitted to connect the unused wires to PE or GND.

6 Technical data of options

6.1 Technical data of encoders

System data encoder option	Single-turn resolution (Position resolution per motor revolution)		Multi-turn resolution (max. counter for complete motor revolutions)		Interface connection
/EI8Z Incremental encoder	12 bit	4096 inc.	–	–	MOVILINK® DDI, coaxial
/EK8Z Incremental encoder	16 bit	65536 inc.	–	–	MOVILINK® DDI, coaxial
/AK8Z Multi-turn absolute encoder	16 bit	65536 inc.	16 bit	65536 inc.	MOVILINK® DDI, coaxial

6.2 Technical data of brake controls BG.Z, BS.Z, B

6.2.1 Functional description

The MOVILINK® DDI option portfolio includes brake controls with an extended range of functions. The options of the BG.Z, BS.Z and B series are brake controls that are integrated in the drive or inverter. The BG.Z and BS.Z series are connected in the control cabinet via the MOVILINK® DDI interface in the MOVI-C® modular automation system, while the HV brake control B is an option for decentralized MOVI-C® inverters.

In addition to the basic function of brake control, these brake control systems generally have standard functions for condition monitoring of the brake and its state of wear, as well as for monitoring of the brake control system itself.

INFORMATION



The brake controls BG.Z, BS.Z and option B also function as assistance systems that are intended to simplify maintenance and fault diagnostics. This does not replace or override standard prescribed maintenance intervals.

In the case of MOVI-C® control cabinet inverters, the brake control and brake are permanently supplied from the local supply voltage network. The brake switching function is implemented via the MOVILINK® DDI interface and the BG.Z or BS.Z brake controls. In the case of MOVI-C® decentralized inverters, the brake is controlled directly from the DC link of the inverter via the integrated HV brake control.

With their wide voltage input (supply with low voltage according to IEC 60050 in the specified range), the BG.Z brake controls enable spring-loaded brakes from the BE.. and BZ.. series to be operated in a large supply voltage range. Previously, it was necessary to select a rated brake voltage to adapt to the local AC voltage network. These brake controls enable the use of a rated brake voltage in the entire supply voltage range that is completely network-independent. This provides you with an advantage in terms of logistics and maintenance, since only one brake type needs to be used in one rated brake voltage with one brake control. The same brakemotor version and the same spare parts can be used.

The HV brake control B is an option for MOVI-C® decentralized inverters to enable integrated control of spring-loaded brakes. It combines the network-independent brakemotor version with the advantages of the decentralized infrastructure, and it represents a fully integrated solution for brake control and brake diagnostics that can be im-

plemented without a separate brake supply. With its wide voltage input (supply with low voltage according to IEC 60050 in the specified range), the HV brake control B enables spring-loaded brakes from the BE.. and BZ.. series to be operated in a large supply voltage range. Previously, it was necessary to select a rated brake voltage to adapt to the local AC voltage network. These brake controls enable the use of a rated brake voltage in the entire supply voltage range that is completely network-independent. This provides you with an advantage in terms of logistics and maintenance, since only one brake type needs to be used in one rated brake voltage with one brake control. The same brakemotor version and the same spare parts can be used.

6.2.2 Technical data of brake controls BG1Z and B

It is not possible to combine a BG1Z (MOVILINK® DDI type code DI2...) with a MOVIMOT® flexible decentralized inverter. MOVIMOT® flexible uses the integrated brake control B (HV brake control). When using a MOVIMOT® flexible, a BG1Z (MOVILINK® DDI type code DI0...) must not be integrated.

It is possible to combine a BG1Z (MOVILINK® DDI type code DI2...) with MOVI-C® control cabinet inverters MOVIDRIVE® and MOVITRAC®, however, an external brake control must not be used when using a BG1Z. If a BG1Z is not integrated (MOVILINK® DDI type code DI0...), external brake controls can be used.

		BG1Z	B ¹⁾ (HV brake control)
Inverter		MOVI-C® control cabinet inverters: MOVITRAC® advanced MOVIDRIVE® modular MOVIDRIVE® technology MOVIDRIVE® system	MOVI-C® decentralized inverters: MOVIMOT® flexible MOVIMOT® advanced
MOVILINK® DDI type code		DI2...	DI0...
Brake control installation		Inside the motor in the terminal box	Integrated in the inverter
Motors, motor sizes, brake types ²⁾	Nominal voltage V_{Br} of the brakes	DRN, DR2. 71 – 180: BE03 – BE5: $V_{Br} = 230$ V AC BE11 – BE32: $V_{Br} = 184$ V AC	DRN, DR2. 71-132M ³⁾ : BE03 – BE20: $V_{Br} = 400$, 230, 120 V AC
Temperature range	Ambient temperature of the motor	-20 to +40 °C	
Supply voltage	Voltage at the supply of the supply cable (inverter side)	200 – 500 V AC ±10%	380 – 500 V AC ±10%
Functional safety	Availability with safety brakes	no	
Explosion protection	Availability for applications in explosion-protected areas	no	

		BG1Z	B ¹⁾ (HV brake control)
Brake control	Supported brake types	BE ³⁾	
	Supported braking torques ²⁾	For each brake type/size: Maximum braking torques available as standard ⁴⁾	
	Control functions	Release, application (normal excitation), rapid application (rapid excitation)	Release, application (normal excitation), rapid application (rapid excitation) ⁵⁾
	Monitoring functions of the brake control and brake	Output stage (hardware and temperature error) Brake monitoring (temperature, short circuit and interruption) Startup (initialization) Computer and memory errors	
Brake condition detection ⁶⁾ (Condition Monitoring)	Supported brake types	BE ³⁾	
	Condition detection functions	Air gap measurement, brake lining reserve Brake temperature Relative thermal brake coil utilization	
	Air gap measurement, brake lining reserve ⁷⁾ (ratio, specification %, parameter 8437.11)	100% brake lining reserve: minimum air gap (no wear) Counting increments and air gap range depending on the brake type and size 0% brake lining reserve: maximum air gap (maximum wear)	
	Brake coil temperature (temperature in °C, parameter 8437.5)	Measuring step 1K	
	Thermal brake coil utilization (ratio, specification %, parameter 8437.12)	0%: ≤ 20 °C or no measured value available 100%: ≥ Maximum temperature of the respective brake coil	
Cable length, maximum ⁸⁾		≤ 200 m	≤ 15 m

1) Brake control B and BG.Z: Operation is carried out with low voltage according to IEC 60050 in the specified supply range

2) For technical data of the brakes, see catalogs / operating instructions of the respective motor types

3) in preparation

4) further braking torques in preparation

5) permanently activated

6) other functions on request

7) Measured value available after the first venting process

8) also dependent on the selected inverter type and configured PWM frequency and/or brake type; see system manuals of the respective inverter

7 Dimension sheets of DRN.. with terminal box for MOVILINK® DDI

DRN71-90
DR2.71-80

/DI

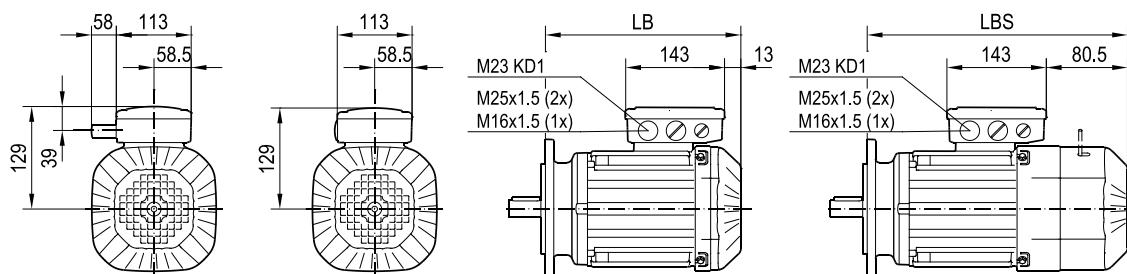
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(3)

KD1

KD

**DRN71..
DR2.71..**

**DRN71..BE
DR2.71..BE**

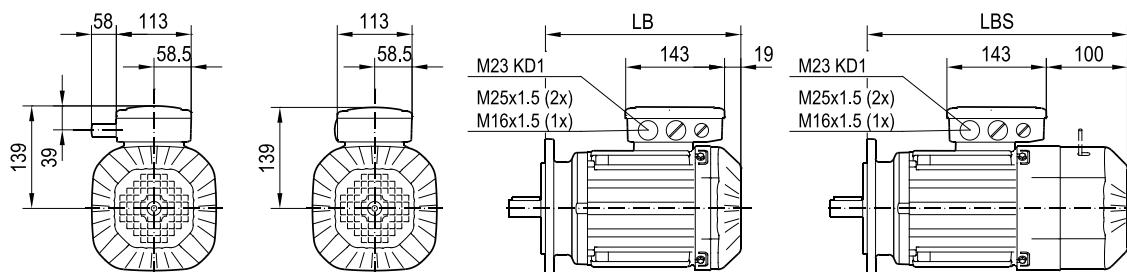


KD1

KD

**DRN80..
DR2.80..**

**DRN80..BE
DR2.80..BE**

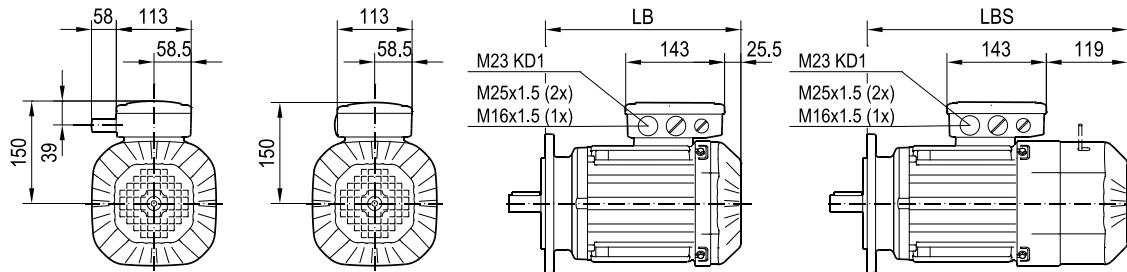


KD1

KD

DRN90..

DRN90..BE



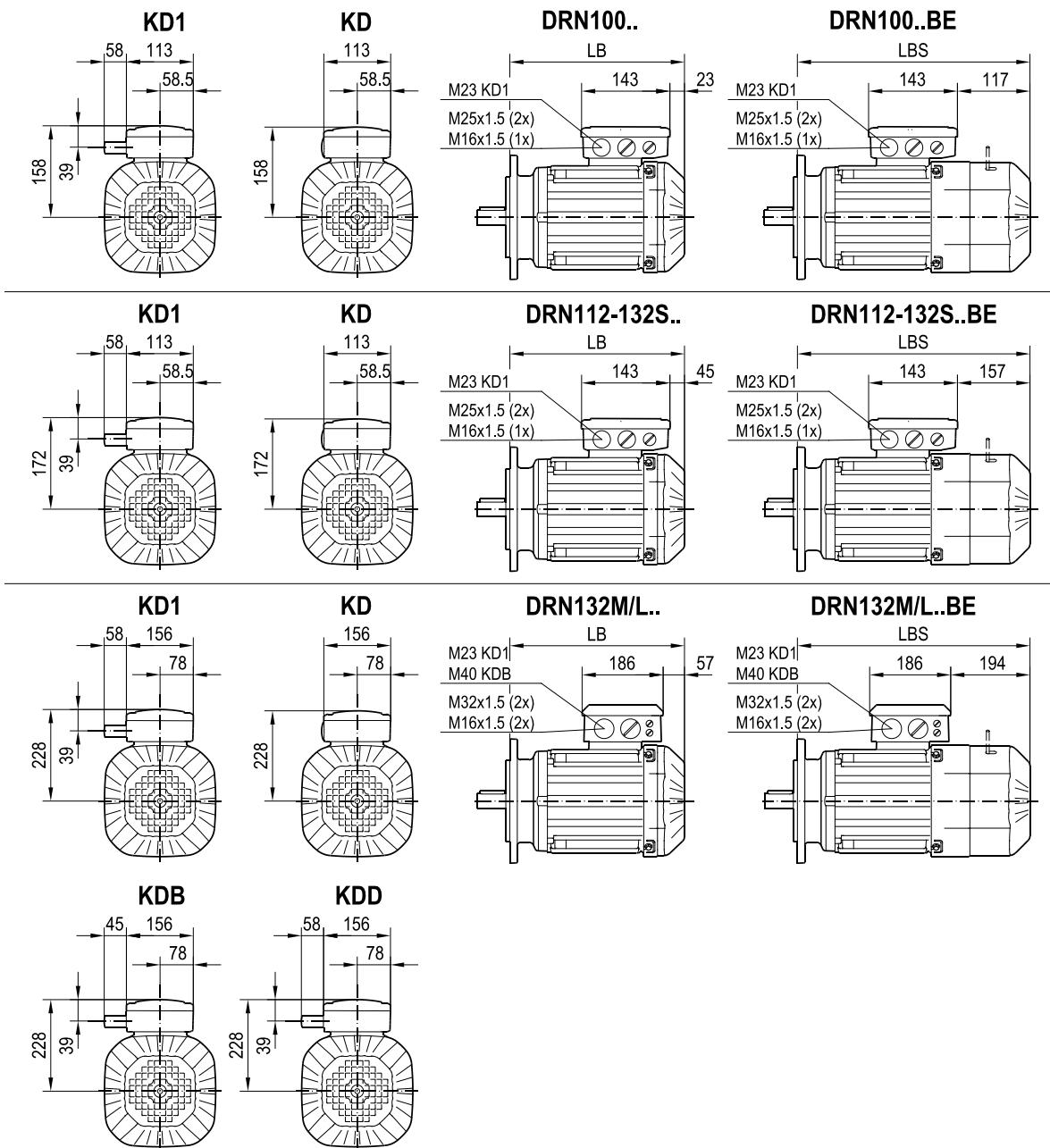
(→)	71MS	71M	80MK	80MS	80M	90S(R)	90L	
LB (B5/B14)	202	222	241	259	287	281	313	
LB (B3)	200	220	239	257	285	279	311	
LBS (B5/B14)	269	289	322	340	368	375	407	
LBS (B3)	267	287	320	338	366	373	405	

DRN100-132

/DI

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2(3)



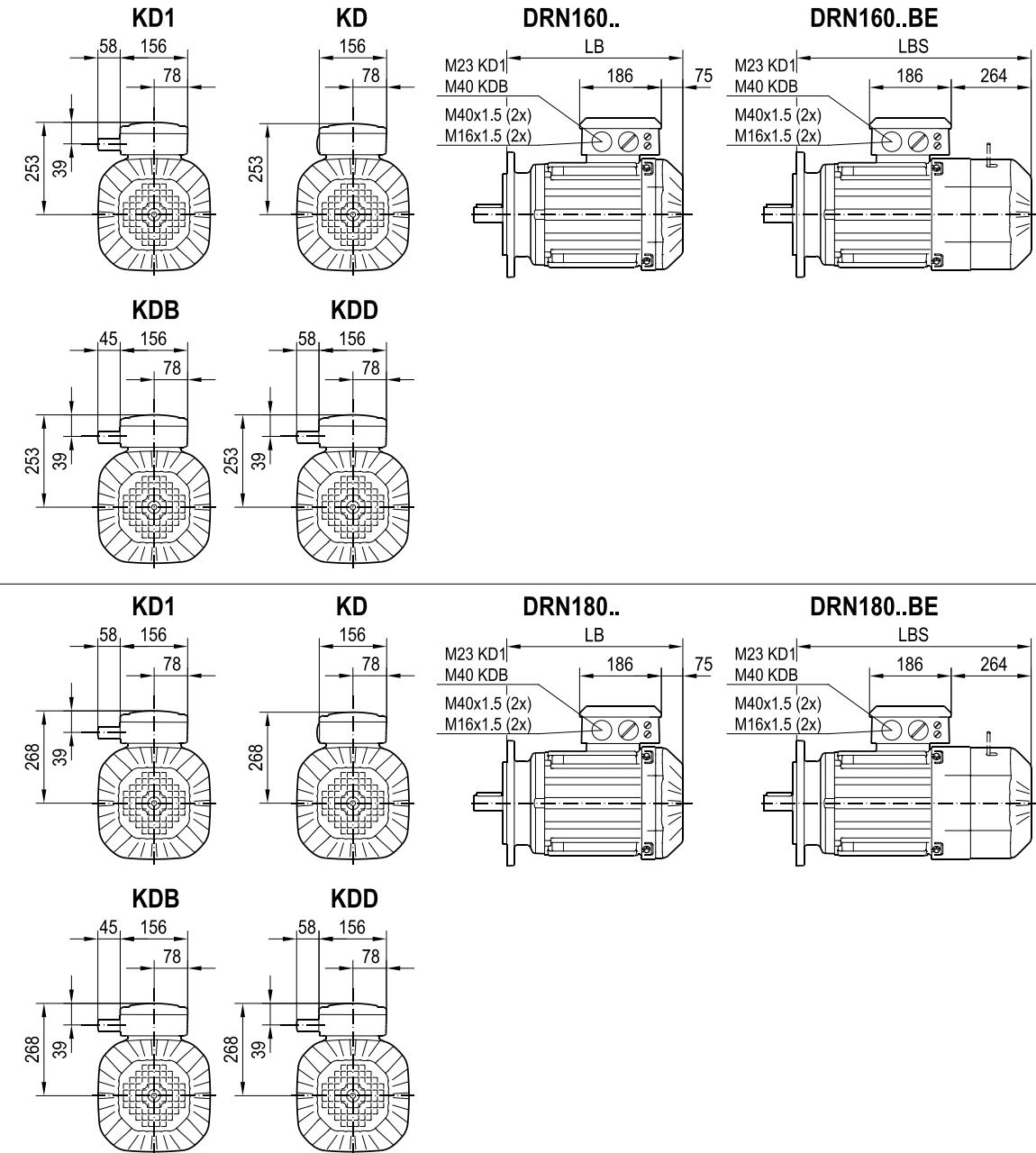
(→)	100LS	100LM	100L(R)	112M	132S	132M	132L	
LB (B5/B14)	309	359	359	387	437	439	464	
LB (B3)	307	357	357	385	435	437	462	
LBS (B5/B14)	402	452	452	499	549	576	601	
LBS (B3)	400	450	450	497	547	574	599	

DRN160-180

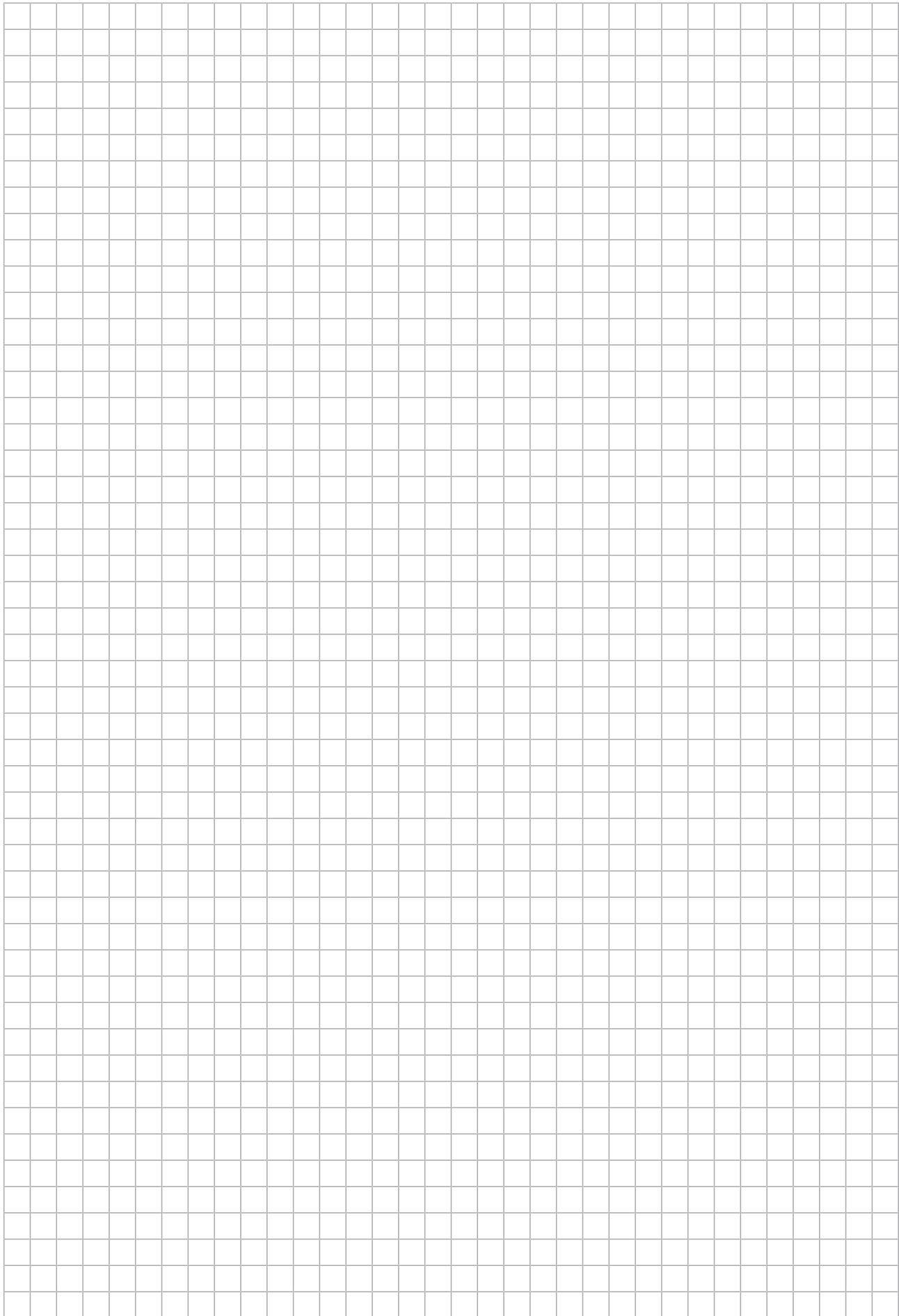
/DI

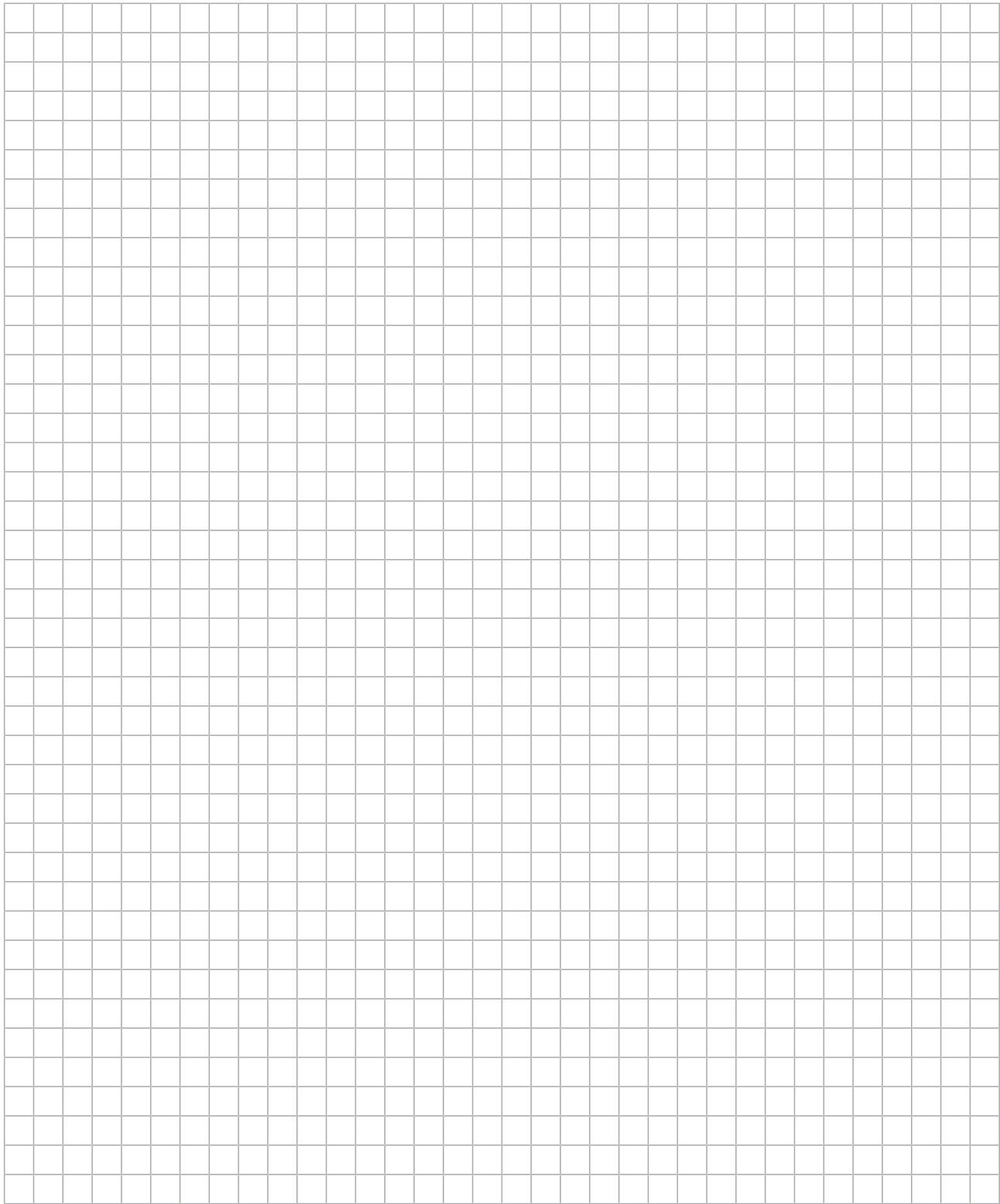
08 152 01 19

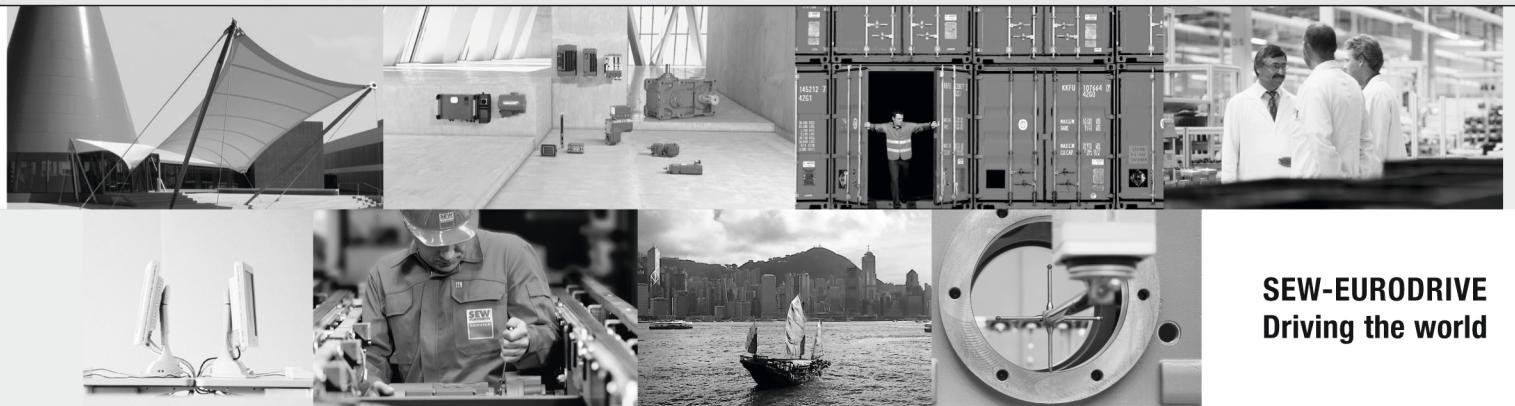
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(→)	160M	160L	180M	180L			
LB (B5/B14)	532	532	555	555			
LB (B3)	529	529	554	554			
LBS (B5/B14)	721	721	748	748			
LBS (B3)	718	718	745	745			







SEW-EURODRIVE
Driving the world

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EURODRIVE**

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