

8 MOVIMOT®

8.1 Description



INFORMATION

This catalog provides a brief overview of MOVIMOT® drive units for a quick drive selection.

For detailed descriptions, project planning information and dimension drawings, refer to the "MOVIMOT® Gearmotors" catalog.

The following figure shows the MOVIMOT® size MM03-MM15:

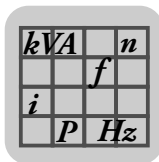


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MOVIMOT®, the combination of a DRS, DRE or DRP AC (brake) motor and a digital frequency inverter, is available in the power range 0.37 – 4.0 kW. Especially decentralized drive tasks can be solved easily and economically.

You can use the MOVIMOT® drives to equip extensive plants with a modular system or flexibly integrate them in existing plants. MOVIMOT® is also the electronic replacement for pole-changing motors or mechanical variable speed drives.

MOVIMOT® is available as motor, brake motor, gearmotors or geared brake motor in many different standard versions and mounting positions.



8.1.1 Unit properties

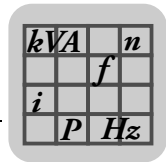
- Power range from 0.37 to 4 kW
- Voltage range: 3 x 380 - 500 V
- Frequency inverter with vector-oriented motor control
- Application-specific parameterization is possible
- Pluggable parameter memory for data backup
- Comprehensive protection and monitoring functions
- Low-noise thanks to 16 kHz PWM switching frequency
- Status LED for fast diagnostics
- Diagnostic interface with plug connector as a standard feature
- Diagnostics and manual operation via MOVITOOLS® MotionStudio
- 4Q operation as standard
- Integrated brake management:
 - For motors with mechanical brake, the brake coil is used as braking resistor.
 - For motors without brake, MOVIMOT® is supplied with internal braking resistor as standard.
- The units are controlled either via binary signals, via the serial interface RS-485, or optionally via AS-Interface or all common fieldbus interfaces (PROFIBUS, PROFINET IO, INTERBUS, DeviceNet).
- MOVIMOT® can be supplied with UL approval (UL listed) on request.

MOVIMOT® options (/MO)

MOVIMOT® can be supplemented by many different options (page 265).

The type designation contains "/MO" no matter whether one or several of the following options are used.

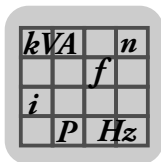
Designation	Description
BEM	Brake control
URM	Voltage relay
MLU13A	Internal DC 24 V voltage supply (380 – 500 V)
MNF21A	Internal line filter option (MM03 – MM15)
MLU11A	DC 24 V voltage supply (380 - 500 V)
MLU21A	DC 24 V voltage supply (200 - 240 V)
MLG11A	Setpoint generator with DC 24 V voltage supply (380 – 500 V)
MLG21A	Setpoint generator with DC 24 V voltage supply (200 – 240 V)
MFP...	PROFIBUS interface
MFE...	PROFINET IO interface
MFI...	INTERBUS interface
MFD...	DeviceNet interface



<i>AS-Interface</i>	MOVIMOT® drives are available with integrated AS-Interface. There are the following designs: • MLK30A option (slave on AS-Interface) • MLK31A option (double slave on AS-Interface) for drives with several speed setpoints and ramps. The AS-Interface slave is located on the connection board in the connection box.
<i>MLK30A</i>	Connected to the AS-Interface, the MLK30A slave works like a module with 4 inputs and 4 outputs. The cyclic output bits control the MOVIMOT® inverter. The input bits transmit the status of the drive and 2 additional sensor signals to the AS-Interface master. The acyclic parameter bits are used to select speed scaling factors. The MLK30A option is compatible with MOVIMOT® MM..C with integrated AS-Interface.
<i>MLK31A</i>	The MLK31A option works as a double slave on the AS-Interface according to AS-Interface specification 3.0. The serial AS-Interface data transmission (analog profile) allows for MOVIMOT® parameters and display values to be written and read. The MOVIMOT® inverter is controlled via the cyclic output bits. The coding of the data bits is specified in different function modes. The MOVIMOT® inverter interprets these bits as different control and status codes. With the acyclic parameter bits, you can switch between the function modes. The input bits transmit the status of the drive and 2 additional sensor signals to the AS-Interface master.

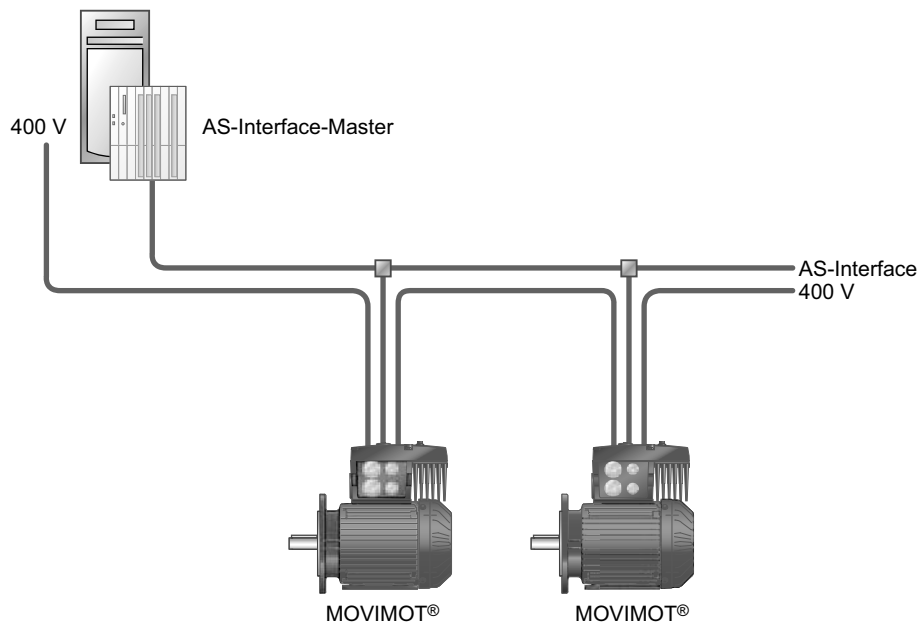
8.1.2 Advantages of MOVIMOT®

- Small total volume
- Interference-free connection between inverter and motor
- Closed design with integrated protection functions
- Inverter cooling independent of the motor speed
- No space required in the control cabinet
- Optimally preset parameters for the expected applications
- Easy installation, startup and maintenance
- Easy to service for retrofitting and replacement



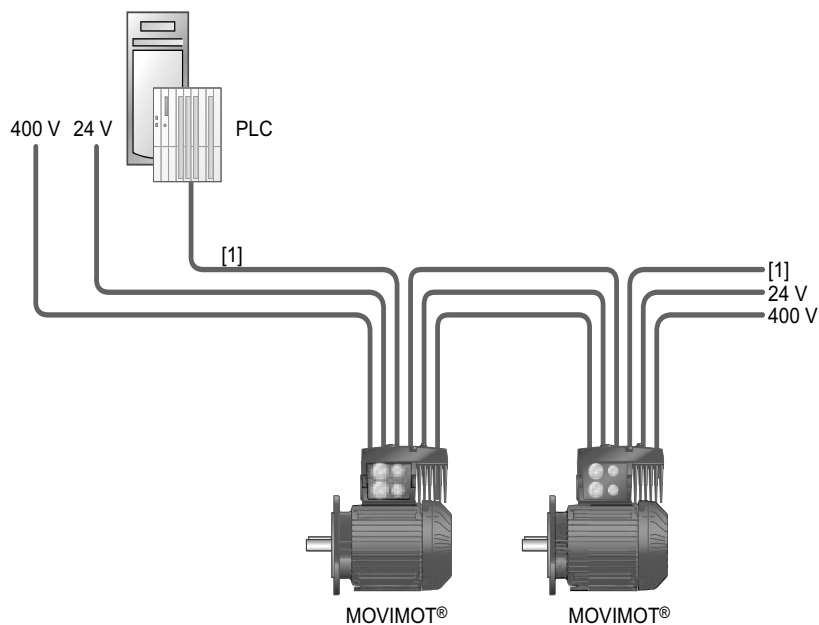
8.2 Installation topology of MOVIMOT®

The following figure shows the basic installation topology of the MOVIMOT® drive with AS-Interface (DC 24 V supply via AS-Interface):



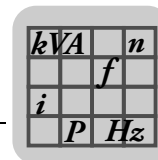
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The following figure shows the basic installation topology of MOVIMOT®:



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[1] Control: Binary (+ RS485)



8.3 Available MOVIMOT® motor combinations

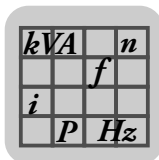
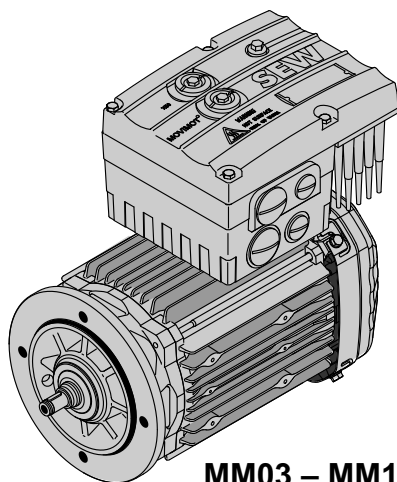
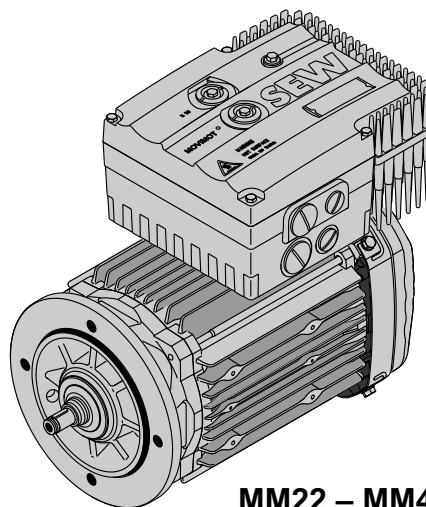
8.3.1 Motor identification for MOVIMOT® (/MI)

Each MOVIMOT® contains a motor identification module (DIM) for easy and fast startup. The DIM is included in the scope of delivery of the MOVIMOT® motor or MOVIMOT® gearmotor.

If a DR. motor / brakemotor is ordered without MOVIMOT®, a DIM can be supplied for the DR. motor according to its energy efficiency class. The DIM is attached in the standard terminal box of the DR. motor or DR...BE brakemotor. In the unit designation of the DR. motor / brakemotor, the DIM is indicated by /MI.

Assignment of the Drive-ID module

Type	Motor		Drive-ID module		
	Line voltage [V]	Line frequency [Hz]	Identification	ID color	Part number
DRS	230 / 400	50	DRS/400/50	White	1 821 437 1
DRE	230 / 400	50	DRE/400/50	Orange	1 821 439 8
DRS	266 / 460	60	DRS/460/60	Yellow	1 821 440 1
DRE	266 / 460	60	DRE/460/60	Green	1 821 442 8
DRS / DRE	220 / 380	60	DRS/DRE/380/60	Red	1 823 493 3
DRS / DRE	220 – 240 / 380 – 415 254 – 277 / 440 – 480	50	DRS/DRE50/60	Violet	1 821 444 4
		60			
DRP	230 / 400	50	DRP/230/400	Brown	1 821 790 7
DRP	266 / 460	60	DRP/266/460	Beige	1 821 791 5

**8.3.2 MOVIMOT® drives with DRE motors****MM03 – MM15****MM22 – MM40**

1409434251

280 – 1400 rpm $\curvearrowright$ 3 x 380 – 500 V (400 V)

IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRE80S4 /../MM03	0.37	2.52	1.5	1400	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /../MM05	0.55	3.75	1.5	1400	1.6	0.99	21.5	23	10	15.5	18.5
DRE80M4 /../MM07	0.75	5.1	1.5	1400	1.9	0.99	21.5	23	10	15.5	18.5
DRE90M4 /../MM11	1.1	7.5	1.5	1400	2.4	0.99	35.5	40	20	19.6	24.2
DRE90L4 /../MM15	1.5	10.2	1.5	1400	3.5	0.99	43.5	48.5	20	22.6	27.2
DRE100M4 /../MM22	2.2	15	1.5	1400	5.0	0.99	56	62	28	28.3	34.2
DRE100LC4 /../MM30	3.0	20.5	1.5	1400	6.7	0.99	90	96	40	33.5	39.4
DRE132S4 /../MM40	4.0	27.3	1.5	1400	7.3	0.99	190	195	55	49.2	56.4

290 – 2900 rpm $\triangle$ 3 x 380 – 500 V (400 V)

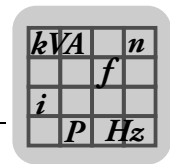
IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRE80S4 /../MM03	0.37	1.22	1.5	2900	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80S4 /../MM05	0.55	1.81	1.5	2900	1.6	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /../MM07	0.75	2.47	1.5	2900	1.9	0.99	21.5	23	10	15.5	18.5
DRE80M4 /../MM11	1.1	3.62	1.5	2900	2.4	0.99	21.5	23	10	15.5	18.5
DRE90M4 /../MM15	1.5	4.95	1.6	2900	3.5	0.99	35.5	40	20	19.6	24.2
DRE90L4 /../MM22	2.2	7.25	1.6	2900	5.0	0.99	43.5	48.5	20	23.7	28.2
DRE100M4 /../MM30	3.0	9.9	1.6	2900	6.7	0.99	56	62	28	28.3	34.2
DRE100LC4 /../MM40	4.0	13.2	1.6	2900	7.3	0.99	90	96	40	34.1	40.0

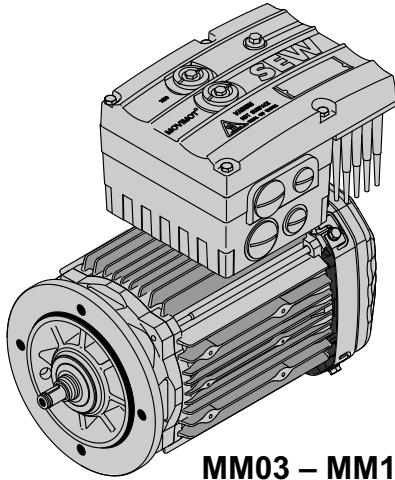
1) Mass of motor without brake

2) Mass of motor with brake

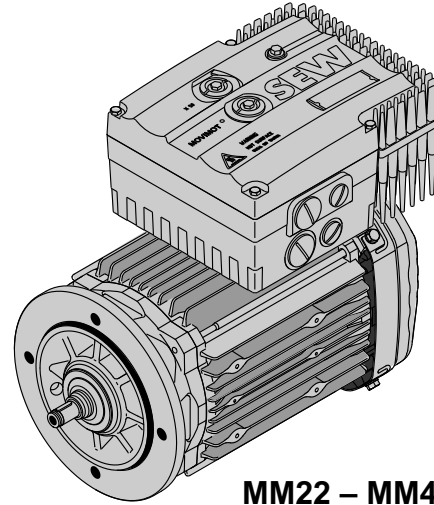
Thermal classification F as standard



8.3.3 MOVIMOT® drives with DRE motors and increased short-term torque



MM03 – MM15



MM22 – MM40

1409434251

280 – 1400 rpm $\curvearrowright$ 3 x 380 – 500 V (400 V)

IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRE80S4 /.../MM05	0.37	2.52	2.1	1400	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /.../MM07	0.55	3.75	2.1	1400	1.6	0.99	21.5	23	10	15.5	18.5
DRE80M4 /.../MM11	0.75	5.1	2.1	1400	1.9	0.99	21.5	23	10	15.5	18.5
DRE90M4 /.../MM15	1.1	7.5	2.1	1400	2.4	0.99	35.5	40	20	19.6	24.2
DRE90L4 /.../MM22	1.5	10.2	2.1	1400	3.5	0.99	43.5	48.5	20	23.7	28.3
DRE100M4 /.../MM30	2.2	15.0	2.1	1400	5.0	0.99	56	62	28	28.3	34.2
DRE100LC4 /.../MM40	3.0	20.5	2.1	1400	6.7	0.99	90	96	40	34.1	40.0

290 – 2900 rpm $\triangle$ 3 x 380 – 500 V (400 V)

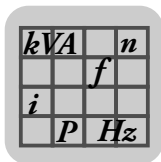
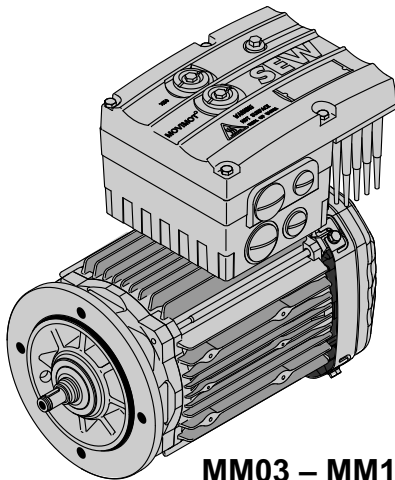
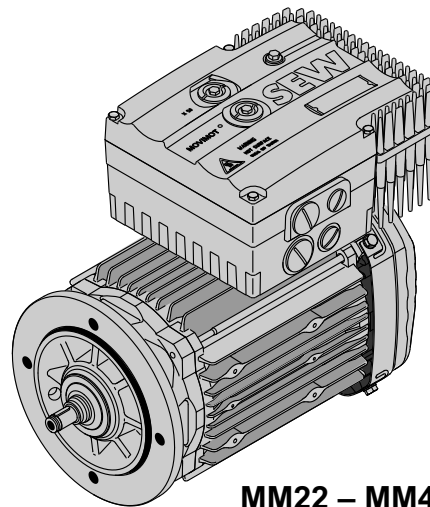
IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRE80S4 /.../MM05	0.37	1.22	2.2	2900	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80S4 /.../MM07	0.55	1.81	2.2	2900	1.6	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /.../MM11	0.75	2.47	2.2	2900	1.9	0.99	21.5	23	10	15.5	18.5
DRE80M4 /.../MM15	1.1	3.62	2.2	2900	2.4	0.99	21.5	23	10	15.5	18.5
DRE90M4 /.../MM22	1.5	4.95	2.2	2900	3.5	0.99	35.5	40	20	20.7	25.3
DRE90L4 /.../MM30	2.2	7.25	2.2	2900	5.0	0.99	43.5	48.5	20	23.7	28.3
DRE100M4 /.../MM40	3.0	9.9	2.2	2900	6.7	0.99	56	62	28	28.9	34.8

1) Mass of motor without brake

2) Mass of motor with brake

Thermal classification F as standard

**8.3.4 MOVIMOT® drives with DRS motors****MM03 – MM15****MM22 – MM40**

1409434251

280 – 1400 rpm $\curvearrowright$ 3 x 380 – 500 V (400 V)

IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRS71S4 /../MM03	0.37	2.52	1.5	1400	1.3	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /../MM05	0.55	3.75	1.5	1400	1.6	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /../MM07	0.75	5.1	1.5	1400	1.9	0.99	14.9	16.4	10	12.7	15.7
DRS80M4 /../MM11	1.1	7.5	1.5	1400	2.4	0.99	21.5	26	14	15.5	19.2
DRS90M4 /../MM15	1.5	10.2	1.5	1400	3.5	0.99	35.5	40	20	19.6	24.2
DRS90L4 /../MM22	2.2	15.0	1.5	1400	5.0	0.99	43.5	49.5	40	23.7	29.6
DRS100M4 /../MM30	3.0	20.5	1.5	1400	6.7	0.99	56	62	40	28.3	34.2
DRS100LC4 /../MM40	4.0	27.3	1.5	1400	7.3	0.99	90	96	50	34.1	40.0

290 – 2900 rpm $\triangle$ 3 x 380 – 500 V (400 V)

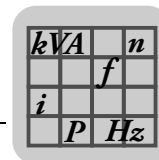
IEC or c US

Type	P _n [kW]	M _n [Nm]	M _a /M _n f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ¹⁾ [kg]	m ²⁾ [kg]
							Without brake	With brake			
DRS71S4 /../MM05	0.55	1.81	2.0	2900	1.6	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /../MM07	0.75	2.47	2.0	2900	1.9	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /../MM11	1.1	3.62	2.0	2900	2.4	0.99	14.9	16.4	10	12.7	15.7
DRS80M4 /../MM15	1.5	4.95	1.6	2900	3.5	0.99	21.5	26	14	15.5	19.2
DRS90M4 /../MM22	2.2	7.25	1.6	2900	5.0	0.99	35.5	40	20	20.7	25.3
DRS90L4 /../MM30	3.0	9.9	1.6	2900	6.7	0.99	43.5	49.5	40	23.7	29.6
DRS100M4 /../MM40	4.0	13.2	1.6	2900	7.3	0.99	56	62	40	28.9	34.8

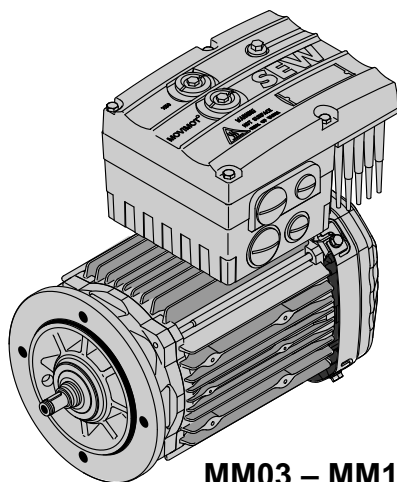
1) Mass of motor without brake

2) Mass of motor with brake

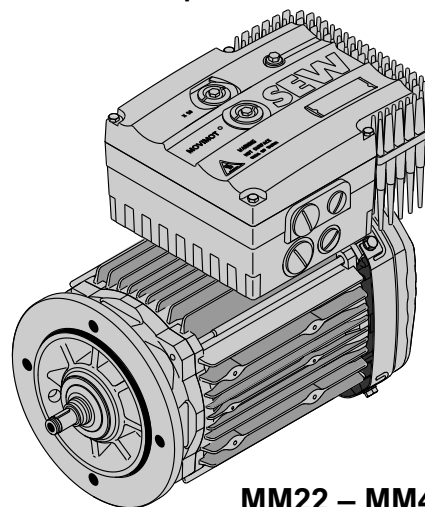
Thermal classification F as standard



8.3.5 MOVIMOT® drives with DRS motors and increased short-term torque



MM03 – MM15



MM22 – MM40

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280 – 1400 rpm $\curvearrowright$ 3 x 380 – 500 V (400 V)

IEC or C US

Type	P _n [kW]	M _n [Nm]	M _a /M _n ¹⁾ f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ²⁾ [kg]	m ³⁾ [kg]
							Without brake	With brake			
DRS71S4 /../MM05	0.37	2.52	2.1	1400	1.3	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /../MM07	0.55	3.75	2.1	1400	1.6	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /../MM11	0.75	5.1	2.1	1400	1.9	0.99	14.9	16.4	10	12.7	15.7
DRS80M4 /../MM15	1.1	7.5	2.1	1400	2.4	0.99	21.5	26	14	15.5	19.2
DRS90M4 /../MM22	1.5	10.2	2.1	1400	3.5	0.99	35.5	40	20	20.7	25.3
DRS90L4 /../MM30	2.2	15.0	2.1	1400	5.0	0.99	43.5	49.5	40	23.7	29.6
DRS100M4 /../MM40	3.0	20.5	2.0	1400	6.7	0.99	56	62	40	28.9	34.8

290 – 2900 rpm $\triangle$ 3 x 380 – 500 V (400 V)

IEC or C US

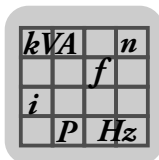
Type	P _n [kW]	M _n [Nm]	M _a /M _n ¹⁾ f > 5 Hz	n _n [rpm]	I _{n1} [A]	cosφ	J _{mot} [10 ⁻⁴ kgm ²]		M _{Bmax} [Nm]	m ²⁾ [kg]	m ³⁾ [kg]
							Without brake	With brake			
DRS71S4 /../MM07	0.55	1.81	2.4	2900	1.6	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /../MM11	0.75	2.47	2.4	2900	1.9	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /../MM15	1.1	3.62	2.4	2900	2.4	0.99	14.9	16.4	10	12.7	15.7
DRS80M4 /../MM22	1.5	4.95	2.2	2900	3.5	0.99	21.5	26	14	16.6	20.3
DRS90M4 /../MM30	2.2	7.25	2.2	2900	5.0	0.99	35.5	40	20	20.7	25.3
DRS90L4 /../MM40	3.0	9.9	2.0	2900	6.7	0.99	43.5	49.5	40	24.3	30.2

1) Increased short-term torque in S3 operation, 25 % cdf

2) Mass of motor without brake

3) Mass of motor with brake

Thermal classification F as standard



8.4 Functional safety

8.4.1 Order information



INFORMATION



- The SafetyDrive design must be ordered explicitly. (Order note: "SafetyDrive").
- Use only those components in safety applications that were designed and delivered for this purpose by SEW-EURODRIVE and that are marked with the Functional Safety logo.

8.4.2 Permitted SafetyDrive variants

Only the following unit combinations with MOVIMOT® MM..DD are permitted in applications with safe disconnection of the drive (STO) up to performance level d according to EN ISO 13849-1 and SIL 2 according to IEC 61800-5-2.

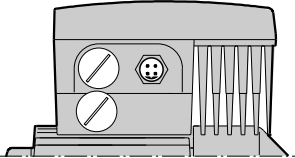
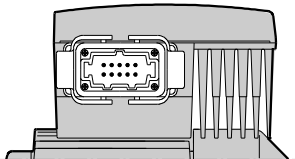
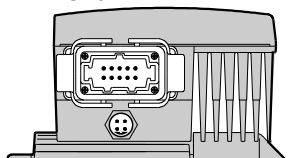
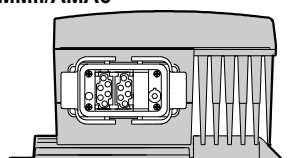
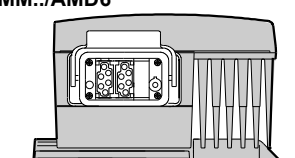
For additional information on the safety function and the safety-related requirements, refer to the "MOVIMOT® MM..DD – Functional Safety" manual.

Permitted designs	MOVIMOT® type
MOVIMOT® with binary control (Control via terminals)	D../MM.. SafetyDrive MM..D-503-00 – SafetyDrive
MOVIMOT® with MBG11A option	
MOVIMOT® with MWA 21A option	
MOVIMOT® with MOVIFIT® MC	
MOVIMOT® with field distributor (page 227)	

8.5 Connection technology

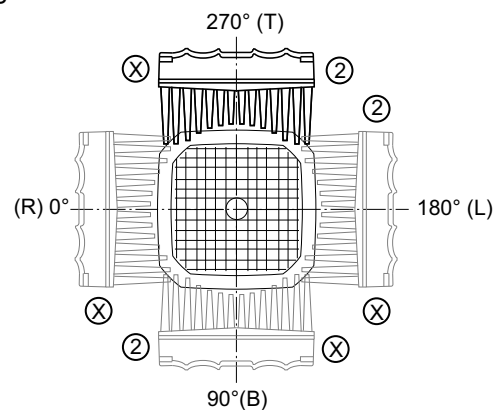
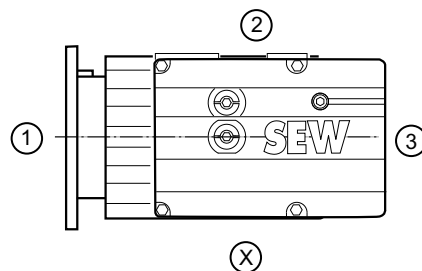
8.5.1 Connection technology – MOVIMOT® standard design – overview

MOVIMOT® MM...D is supplied without plug connector if not specified otherwise in the order. The plug connectors listed in the following table are available as standard. For other types, please contact SEW-EURODRIVE.

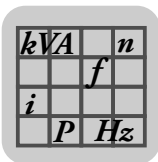
Order designation	Function	Manufacturer designation
MM../AVT1 	RS485	Round plug connector M12 x 1
MM../ASA3 	Power rating	Harting Han® 10 ES pin element (built-on housing with 2 clips)
MM../ASA3/AVT1 	- Power rating - RS485	Harting Han® 10 ES pin element (built-on housing with 2 clips) + Round plug connector M12 x 1
MM../AMA6 	Power/RS485	Harting HAN Modular® pin element (built-on housing with 2 clips)
MM../AMD6 	Power/RS485	Harting HAN Modular® pin element (built-on housing with 1 clip)

Available plug connector positions
(MOVIMOT® standard design)

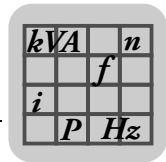
The following positions are possible for plug connectors:



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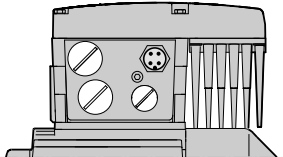
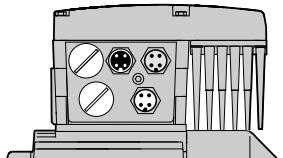
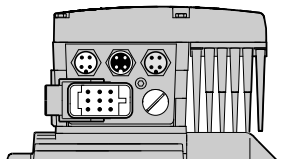
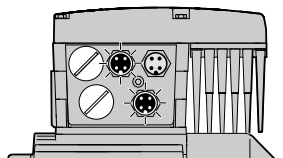
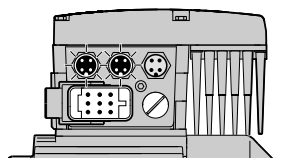


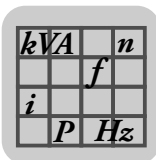
Plug connector	Possible positions
AVT1	X (standard)
	2
ASA3	X (standard)
	2
ASA3/AVT1	ASA3 = X (standard) + AVT1 = X (standard)
	ASA3 = 2 + AVT1 = 2
AMA6 AMD6	X (standard)
	2



8.5.2 Connection technology – MOVIMOT® with integrated AS-Interface – overview

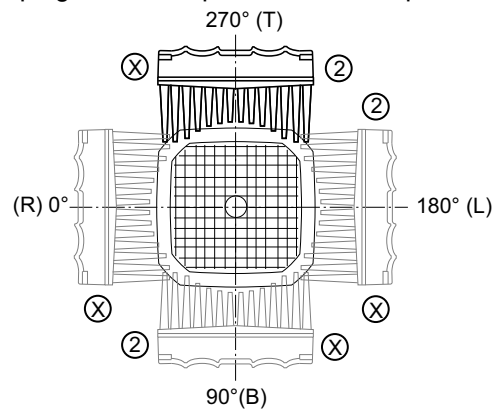
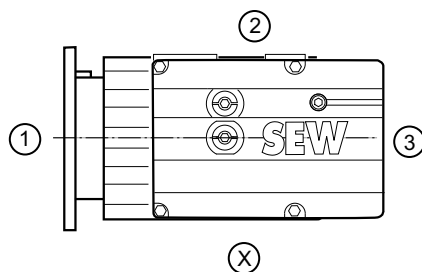
MOVIMOT® MM..D with integrated AS-Interface is supplied with AVSK plug connector (for AS-Interface) if not specified otherwise in the order. The plug connectors listed in the following table are available as standard. For other types, please contact SEW-EURODRIVE.

Order designation	Function	Manufacturer designation
MM../AVSK 	AS-Interface	1 x M12 x 1 round plug connector
MM../AZSK 	- AS-Interface - AUX PWR - Sensor connection	3 x M12 x 1 round plug connector
MM../AND3/AZSK 	- Power rating - AS-Interface - AUX PWR - Sensor connection	Harting Han® Q8/0 pin element (built-on housing with one clip) + 3 x M12 x 1 round plug connector
MM../AZZK 	- AS-Interface / AUX-PWR - Sensor connection - Sensor connection	3 x M12 x 1 round plug connector
MM../AND3/AZZK 	- Power rating - AS-Interface / AUX-PWR - Sensor connection - Sensor connection	Harting Han® Q8/0 pin element (built-on housing with one clip) + 3 x M12 x 1 round plug connector

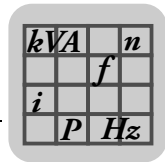


Possible plug connector positions
 (MOVIMOT® with
 integrated AS-
 Interface)

Positions "X" or "2" are possible for plug connectors. The plug connectors are always located on one connection side. Combined plug connector positions are not possible.



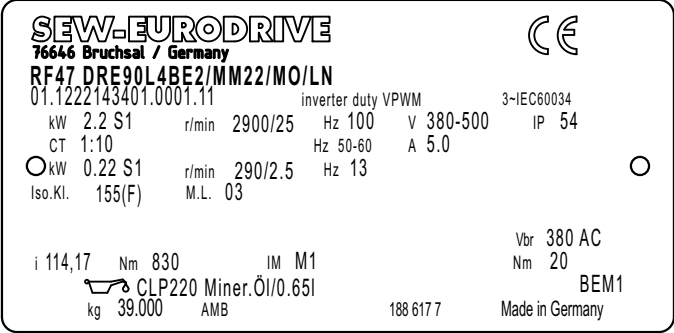
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8.6 Sample type designation

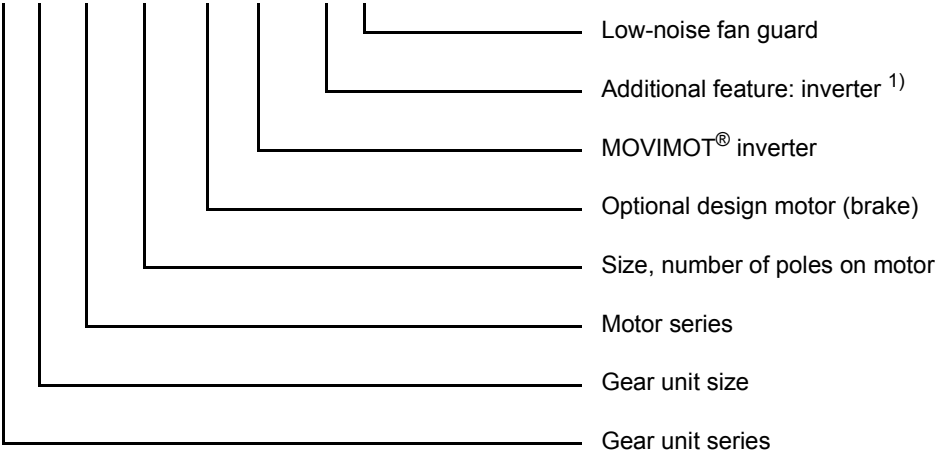
8.6.1 Standard variant

The type designation of the MOVIMOT® gearmotor starts from the component on the output end.

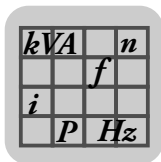


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RF 47 DRE 90L4 BE2/MM22/MO/LN



1) The nameplate only displays options installed at the factory.

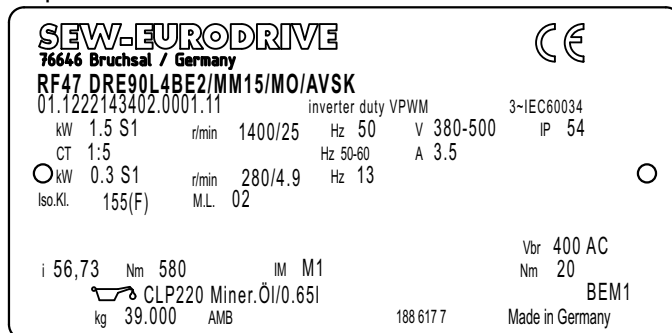


MOVIMOT®

Sample type designation

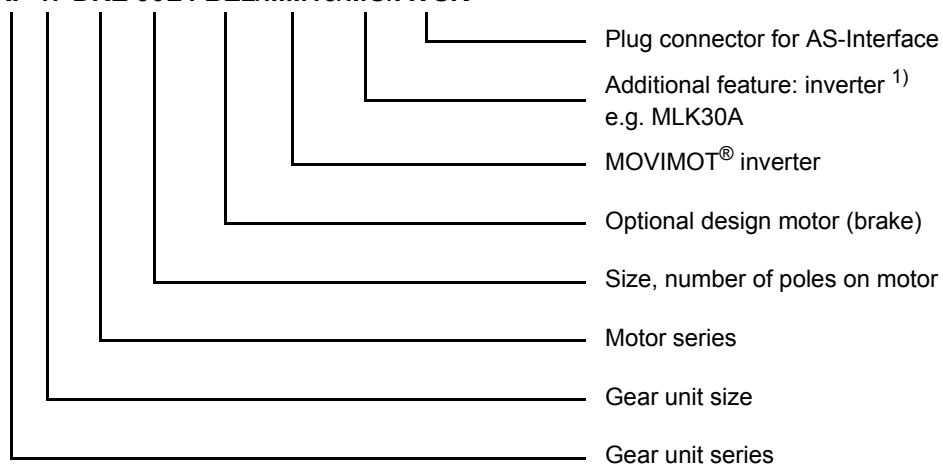
8.6.2 MOVIMOT® with integrated AS-Interface

The type designation of the MOVIMOT® gearmotor starts from the component on the output end.



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RF 47 DRE 90L4 BE2/MM15/MO/AVSK



1) The nameplate only displays options installed at the factory.

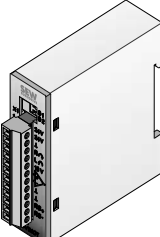
8.7 Options

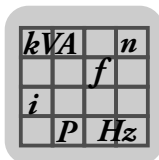
**INFORMATION**

The following tables show the options for MOVIMOT® MM..D.

For detailed information on MOVIMOT® options, refer to the "MOVIMOT® Gearmotors" catalog.

For detailed information about the optional MOVIMOT® fieldbus interfaces, refer to chapter "Fieldbus interfaces and field distributors" (page 190).

Option	Figure	Description
DC 24 V supply MLU11A (Input voltage AC 380 – 500 V) Part number: 0 823 383 7 MLU21A (Input voltage AC 200 – 240 V) Part number: 0 823 387 X		The MLU.1A option is mounted in a cable gland of MOVIMOT® and offers the opportunity to operate one MOVIMOT® including one option with a current consumption of max. 70 mA (MBG11A, MWA21A) without external 24 V auxiliary power supply.
Setpoint adjuster with DC 24 V supply MLG11A (Input voltage AC 380 – 500 V) Part number: 0 823 384 5 MLG21A (Input voltage AC 200 – 240 V) Part number: 0 823 388 8		The MLG.1A option is mounted in a cable gland of MOVIMOT® and lets you adjust the input speed in the –100% to +100% f_{max} range (potentiometer f1) and power the inverter using the DC 24 V auxiliary voltage.
MBG11A setpoint adjuster Part number: 0 822 547 8		The MBG11A setpoint adjuster has 2 keys and a display. They allow for remote speed control in the range of –100% – +100% f_{max} (potentiometer f1). Up to 31 MOVIMOT® units can be controlled at the same time (broadcasting).
MWA21A setpoint converter Part number: 0 823 006 4		The MWA21A setpoint converter converts an analog setpoint and control signals into an RS485 protocol. This conversion allows for remote control of the MOVIMOT® from the control cabinet. Up to 31 MOVIMOT® units can be controlled at the same time (broadcasting).



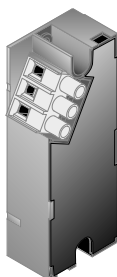
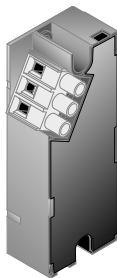
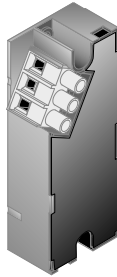
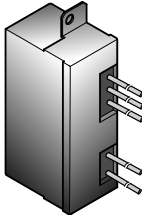
8.7.1 Options integrated in terminal box

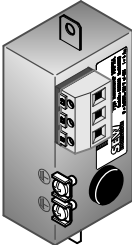


INFORMATION

The following table shows the options for MOVIMOT® MM..D that are installed in the connection box:

- The options BEM, BES, URM, MLU13A and MNF21A are integrated in the MOVIMOT® terminal box.
- The MLU13A and MNF21A options can only be ordered in combination with the modular terminal box.
- The modular terminal box is assigned depending on the ordered option and the MOVIMOT® size.

Option	Figure	Description
BEM brake control Part number: 0 829 611 1		The BEM brake rectifier can be used with MOVIMOT® MM..D for controlling the brake (see also the MOVIMOT® operating instructions). The brake is controlled by means of parameter setting or activating additional function 7 or 9. The BEM brake controller implements fast release and application of the mechanical brake. Important: The brake coil must correspond to the connection voltage.
BES brake control Part number: 0 829 847 5		The BES brake rectifier can be used with MOVIMOT® MM..D for controlling a non-series DC 24 V brake (see also the MOVIMOT® operating instructions). The brake is controlled by means of parameter setting or activating additional function 7 or 9. The BES brake controller implements normal release and fast application of the mechanical brake. Important: The brake coil must be designed as DC 24 V coil.
URM voltage relay Part number: 0 827 601 3		The URM voltage relay ensures rapid application of the mechanical brake. Important: The brake coil must correspond to the MOVIMOT® standard (AC 120 V or 230 V).
Internal DC 24 V voltage supply MLU13A Part number: 1 820 596 8		The MLU13A option is integrated in the terminal box of MOVIMOT® and allows for operating a MOVIMOT® unit including one option with a maximum current consumption of 70 mA (MBG11A, MWA21A) without external 24 V auxiliary voltage. The option is installed in the modular terminal box as standard. Note that the height of the terminal box is higher for MOVIMOT® MM03 to MM15 by 18 mm.

Option	Figure	Description
MNF21A internal line filter Part number: 0 804 265 9		The MNF21A option is integrated in the terminal box of MOVIMOT® (MM03 – MM15) and allows for implementing a drive system that complies with category C1 according to EN 61800-3 with respect to interference emission. The option requires the modular terminal box with increased dimensions. Note that the height of the terminal box is higher for MOVIMOT® MM03 to MM15 by 18 mm .

8.7.2 Factory installed options

The following options can be installed and supplied if required (mounted and wired ready for operation):

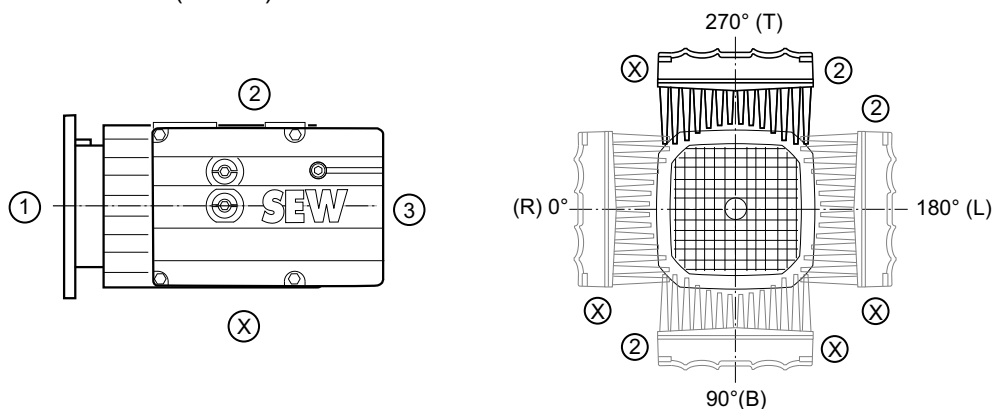
- Local DC 24 V supply (MLU...)
- Local speed control module with DC 24 V supply (MLG.1A)
- PROFIBUS fieldbus interface (MFP../MQP..)
- PROFINET IO fieldbus interface (MFE..)
- INTERBUS fieldbus interface (MFI)
- DeviceNet fieldbus interface (MFD../MQD..)
- Hybrid cable for connection between MF../Z.3. or MF../.6. field distributor and MOVIMOT® (KPF6, 1...5 m)
- MNF21A line filter
- Brake control (BEM or BES) or voltage relay (URM)

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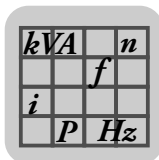
Important order information

The options can be installed in the following positions:

- Position "2"
- Position "X" (normal)



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8.8 Braking resistors

8.8.1 Integrated brake resistors – assignment

The following table shows the assignments of internal braking resistors to MOVIMOT®. For the regenerative load capacity of the braking resistors, refer to section "4Q operation with integrated BW.. braking resistor" (page 299).

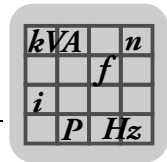
MOVIMOT® type	Braking resistor	Part number
MM03D-503-00 – MM15D-503-00 MM03D-233-00 – MM07D-233-00	BW1	0 822 897 3 ¹⁾
MM22D-503-00 – MM40D-503-00 MM11D-233-00 – MM22D-233-00	BW2	0 823 136 2 ¹⁾

1) Two screws M4 x 8, included in scope of delivery

8.8.2 Assignment of external braking resistors

The following table shows the assignments of external braking resistors to MOVIMOT®. For the regenerative load capacity of the braking resistors, refer to section "4Q operation with brake and external braking resistor" (page 302).

MOVIMOT® type	Braking resistor	Part number	Protective grid
MM03D-503-00 – MM15D-503-00 MM03D-233-00 – MM07D-233-00	BW200-003/K-1.5	0 828 291 9	0 813 152 X
	BW200-005/K-1.5	0 828 283 8	–
	BW150-006/T	1 796 956 5	–
MM22D-503-00 – MM40D-503-00 MM11D-233-00 – MM22D-233-00	BW100-003/K-1.5	0 828 293 5	0 813 152 X
	BW100-005/K-1.5	0 828 286 2	–
	BW068-006/T	1 797 000 8	–
	BW068-012/T	1 797 001 6	–



8.9 Brake coil assignment

The following table shows the assignments of the brake coil to the respective motor. For the regenerative load capacity of the brake coils, refer to section "4Q operation with motors with mechanical brake" (page 301).

Motor	Assigning the brake coil	
	Standard brake	Optional brake
DR63L4	BR03	–
DR.71S4	BE05	BE1
DR.71M4	BE1	BE05
DRS80S4	BE1	BE05
DRE80S4	BE05	BE1
DRS80M4	BE2	BE1
DRE80M4	BE1	BE05
DRS90M4	BE2	BE1
DRE90M4	BE2	BE1
DRS90L4	BE5	BE2
DRE90L4	BE2	BE1
DRS100M4	BE5	BE2
DRE100M4	BE5	BE2
DR.100L4	BE5	BE2
DR.100LC4	BE5	BE2
DR.132S4	BE5	BE11