

7 MOVIMOT®

7.1 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 as an example:



11908340235

MOVIMOT®, the combination of a DRS.., DRE.. or DRN.. 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 gear units.

MOVIMOT® is available as motor, brakemotor, gearmotor or geared brakemotor in many different standard variants and mounting positions.

7.1.1 MOVIMOT® device properties

- Frequency inverter with vector-oriented motor control mode
- Power range: 0.37 – 4.0 kW (0.37 – 2.2 kW)
- Voltage range: 3 × 380 – 500 V (3 × 200 – 240 V)
- Application-specific parameterization is possible
- Pluggable parameter memory for data backup (drive ID module)
- Comprehensive protection and monitoring functions
- Low-noise thanks to PWM switching frequency 16 kHz
- Status LED for fast diagnostics
- Diagnostic interface with plug connector as a standard feature
- Diagnostics and manual operation using MOVITOOLS® MotionStudio
- 4Q operation as standard
- Integrated brake management:
 - For motors with a mechanical brake, the brake coil is used as the braking resistor.
 - For motors without a brake, MOVIMOT® is supplied with an internal braking resistor as standard.
- The units are controlled either via binary signals, via the serial interface RS485, or optionally with AS-Interface or one of the common fieldbus interfaces (PROFIBUS, DeviceNet™, PROFINET IO, EtherNET/IP™, EtherCAT®).
- MOVIMOT® can be supplied with UL approval (UL listed) on request.

7.1.2 MOVIMOT® options (/MO)

MOVIMOT® can be supplemented by many different "options" (→ 375).

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 (MM03 – MM15)
MLU11A	DC 24 V voltage supply (380 – 500 V)
MLU21A	DC 24 V voltage supply (200 – 240 V)
MLG11A	Setpoint adjuster with DC 24 V voltage supply (380 – 500 V)
MLG21A	Setpoint adjuster with DC 24 V voltage supply (200 – 240 V)
MFP...	PROFIBUS interface
MFE...	PROFINET IO, EtherNet/IP™, or EtherCAT® interface
MFD...	DeviceNet™ interface

AS-Interface

MOVIMOT® drives are also available with integrated AS-Interface. The AS-Interface option is located on the connection board in the connection box.

The following AS-Interface options are available:

- Binary slave MLK30A
- Double slave MLK31A
- Binary slave MLK32A in AB technology

The following table shows the main differences between the AS-Interface options:

AS-Interface option	Stations at the AS-Interface	Number of speed setpoints	Number of ramps	Can be parameterized via AS-Interface	24 V supply for MOVIMOT®
MLK30A	Max. 31	2 (16 ¹⁾)	1 × t _{UP} 1 × t _{DOWN}	No	AS-Interface or AUX PWR
MLK31A	Max. 31	6	3 × t _{UP} 3 × t _{DOWN}	Yes	AS-Interface or AUX PWR
MLK32A	Max. 62	6	3 × t _{UP} 3 × t _{DOWN}	No	AUX PWR

1) Due to the parameterization of scaling factors, 16 fixed setpoints are available.

MLK30A

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.

MLK31A

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.

MLK32A

The MLK32A option works as a slave on the AS-Interface according to AS-Interface specification 3.0.

The MOVIMOT® inverter is controlled via the cyclic output bits. The coding of the data bits is specified in different function modules. The MOVIMOT® inverter interprets these bits as different control and status codes. You can switch between the function modules using acyclic parameter bits.

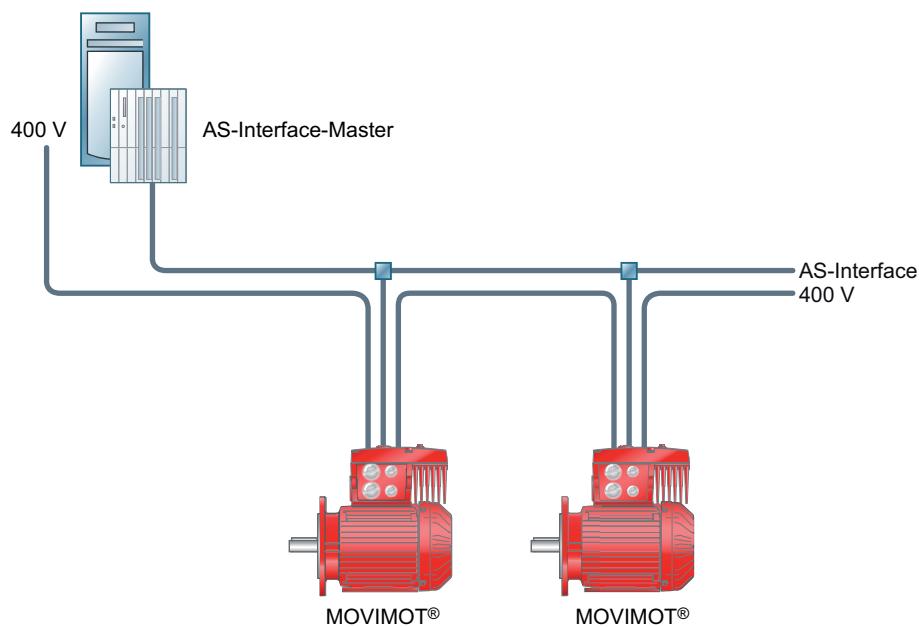
The input bits transmit the status of the drive and 2 additional sensor signals to the AS-Interface master.

7.1.3 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

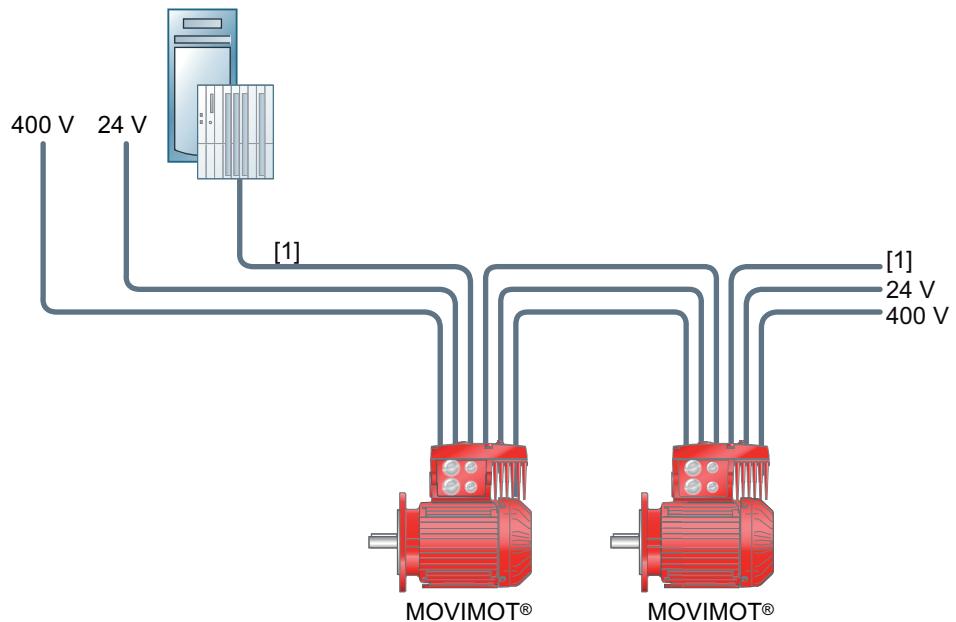
7.2 MOVIMOT® installation topology

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



5255090315

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



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[1] Control: Binary (+ RS485)

7.3 Available MOVIMOT® motor combinations

7.3.1 Motor identification for MOVIMOT® (/MI)

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

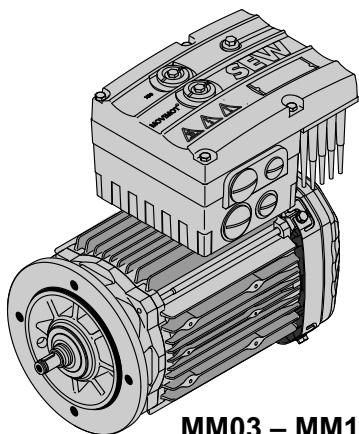
When a DR.. motor/brakemotor is ordered without a MOVIMOT® inverter, a drive ID module suitable for the energy efficiency class of the motor can be included in the delivery. The drive ID module is attached in the standard terminal box of the DR.. motor or DR...BE brakemotor. On the type designation of the DR.. motor/brakemotor, the drive ID module is indicated by /MI.

Assignment of the drive ID module

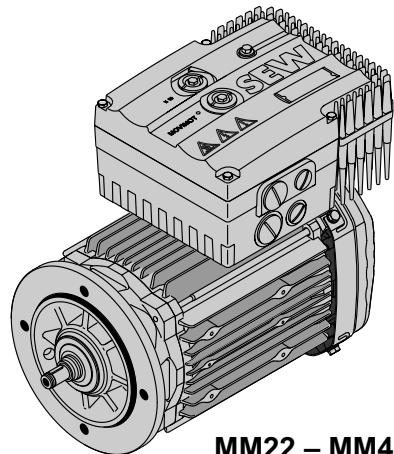
Type	Motor		Drive ID module		
	Line voltage V	Line frequency Hz	Identification	Identifica- tion color	Part number
DR2S..	230/400	50	DR2S/400/50	Light gray/ white striped	28249720
DR2S..	266/460	60	DR2S/460/60	Yellow/ white striped	28249739
DRE..	230/400	50	DRE/400/50	Orange	18214398
DRE..	266/460	60	DRE/460/60 ¹⁾	Yellow	18214401
DRE..	266/460	60	DRE/460/60 ¹⁾	Green	18214428
DRS../DRE..	220/380	60	DRS/DRE/380/60 ¹⁾	Red	18234933
DRS../DRE..	220 – 240/380 – 415 254 – 277/440 – 480	50 60	DRS/DRE/50/60	Violet	18214444
DRE...J..	230/400	50	DRE...J/400/50	Orange	28203816
DRU...J..	230/400	50	DRU...J/400/50	Gray	28203194
DRN..	220/380	60	DRN/380/60	Red/white striped	28240227
DRN..	230/400	50	DRN/400/50	Light blue	28222040
DRN..	266/460	60	DRN/460/60	Blue/white striped	28241819
DRS../DRN..	220 – 230/380 – 400 266/460	50 60	DRS/DRN/50/60	Green/ white striped	28241827
DRN..	220 – 230/380 – 400 266/460	50 60	DRN/50/60	Purple/ white striped	28249747

1) This drive ID module can also be combined with MOVIMOT® MM..D-233.

7.3.2 MOVIMOT® drives with DRN.. motors



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V, 50 Hz)

IEC or UL

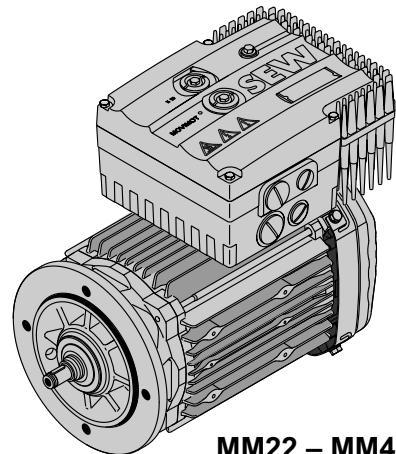
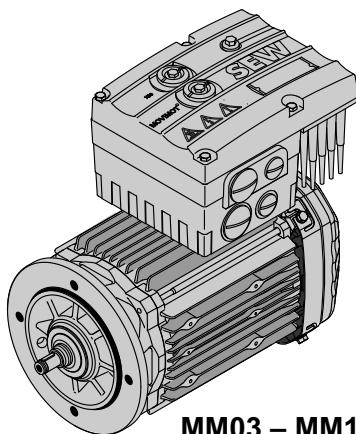
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRN71M4/..MM03	0.37	2.5	1.5	1400	1.3	0.99	7.1	8.4	5	9.6	11.6
DRN80MK4/..MM05	0.55	3.65	1.5	1400	1.6	0.99	17.1	18.6	10	12.6	15.6
DRN80M4/..MM07	0.75	5.1	1.5	1400	1.9	0.99	24.7	26.2	10	15.6	19.6
DRN90S4/..MM11	1.1	7.5	1.5	1400	2.4	0.99	54.0	58.7	20	21.6	26.2
DRN90L4/..MM15	1.5	10.2	1.5	1400	3.5	0.99	67.2	71.9	20	24.6	29.2
DRN100LS4/..MM22	2.2	15.0	1.5	1400	5.0	0.99	81.4	87.4	28	29.3	35.2
DRN100L4/..MM30	3.0	20.5	1.5	1400	6.7	0.99	112	118	40	36.3	42.2
DRN112M4/..MM40	4.0	27.3	1.5	1400	7.3	0.99	178	183	55	48.2	55.4

290 – 2900 min⁻¹ △ 3 × 380 – 500 V (400 V, 50 Hz)

IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRN71MS4/..MM03	0.37	1.22	1.5	2900	1.3	0.99	5.4	6.1	5	8.4	10.2
DRN71M4/..MM05	0.55	1.81	1.5	2900	1.6	0.99	7.1	8.4	5	9.6	11.6
DRN80MK4/..MM07	0.75	2.47	1.5	2900	1.9	0.99	17.1	18.6	10	12.6	15.6
DRN80M4/..MM11	1.1	3.62	1.5	2900	2.4	0.99	24.7	26.2	10	15.6	19.6
DRN90S4/..MM15	1.5	4.95	1.5	2900	3.5	0.99	54.0	58.7	20	21.6	26.2
DRN90L4/..MM22	2.2	7.25	1.5	2900	5.0	0.99	67.2	71.9	20	25.3	29.9
DRN100LS4/..MM30	3.0	9.9	1.5	2900	6.7	0.99	81.4	87.4	28	29.3	35.2
DRN100L4/..MM40	4.0	13.2	1.5	2900	7.3	0.99	112	118	40	37.2	43.1

7.3.3 MOVIMOT® drives with DRN.. motors and increased short-term torque



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280 – 1400 min⁻¹ △ 3 × 380 – 500 V (400 V, 50 Hz)

IEC or UL

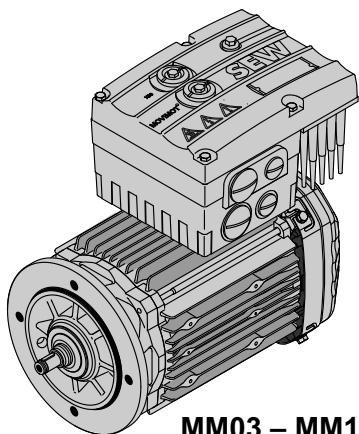
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRN71MS4/..MM03	0.25	1.69	2.1	1400	1.0	0.99	5.42	6.72	5	8.4	10.8
DRN71M4/..MM05	0.37	2.5	2.1	1400	1.3	0.99	7.1	8.4	5	9.6	11.6
DRN80MK4/..MM07	0.55	3.65	2.1	1400	1.6	0.99	17.1	18.6	10	12.6	15.6
DRN80M4/..MM11	0.75	5.1	2.1	1400	1.9	0.99	24.7	26.2	10	15.6	19.3
DRN90S4/..MM15	1.1	7.5	2.1	1400	2.4	0.99	54.0	58.7	20	21.6	26.2
DRN90L4/..MM22	1.5	10.2	2.1	1400	3.5	0.99	67.2	71.9	20	25.3	29.9
DRN100LS4/..MM30	2.2	15.0	2.1	1400	5.0	0.99	81.4	87.4	28	29.3	35.2
DRN100L4/..MM40	3.0	20.5	2.1	1400	6.7	0.99	112	118	40	37.2	43.1

290 – 2900 min⁻¹ △ 3 × 380 – 500 V (400 V, 50 Hz)

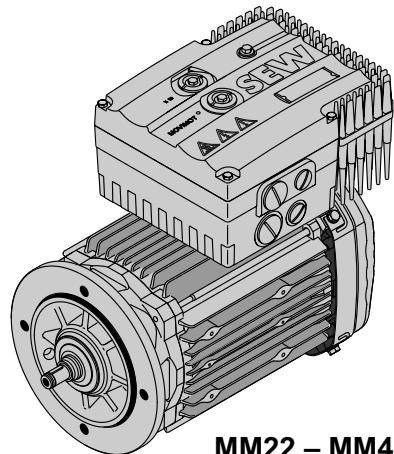
IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRN71MS4/..MM05	0.37	1.22	2.2	2900	1.3	0.99	5.4	6.1	5	8.4	10.2
DRN71M4/..MM07	0.55	1.81	2.2	2900	1.6	0.99	7.1	8.4	5	9.6	11.6
DRN80MK4/..MM11	0.75	2.47	2.2	2900	1.9	0.99	17.1	18.6	10	12.6	15.6
DRN80M4/..MM15	1.1	3.62	2.1	2900	2.4	0.99	24.7	26.2	10	15.6	19.3
DRN90S4/..MM22	1.5	4.95	2.1	2900	3.5	0.99	54.0	58.7	20	22.3	26.9
DRN90L4/..MM30	2.2	7.25	2.1	2900	5.0	0.99	67.2	71.9	20	25.3	29.9
DRN100LS4/..MM40	3.0	9.9	2.1	2900	6.7	0.99	81.4	87.4	28	30.2	36.1

7.3.4 MOVIMOT® drives with DRE.. motors



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V)

IEC or UL

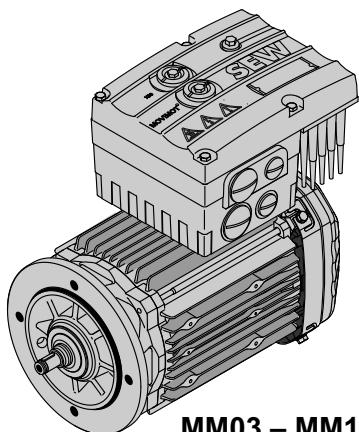
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRE80S4 /..MM03	0.37	2.52	1.5	1400	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /..MM05	0.55	3.75	1.5	1400	1.6	0.99	21.5	23	10	15.5	18.5
DRE80M4 /..MM07	0.75	5.1	1.5	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 min⁻¹ △ 3 × 380 – 500 V (400 V)

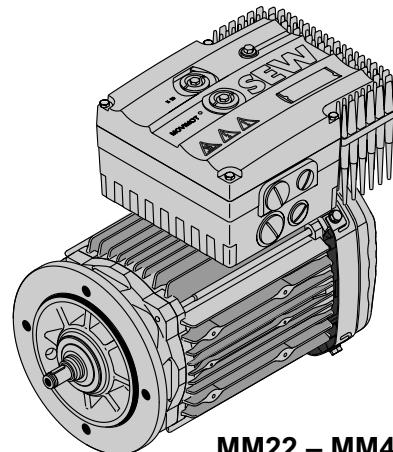
IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
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

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



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ △ 3 × 380 – 500 V (400 V)

IEC or UL

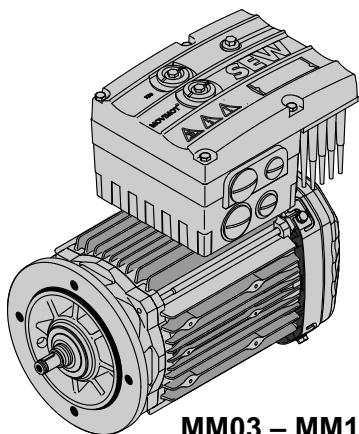
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRE80S4 /.../MM05	0.37	2.52	2.1	1400	1.3	0.99	14.9	16.4	5	12.7	15.7
DRE80M4 /.../MM07	0.55	3.75	2.1	1400	1.6	0.99	21.5	23	10	15.5	18.5
DRE80M4 /.../MM11	0.75	5.1	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 min⁻¹ △ 3 × 380 – 500 V (400 V)

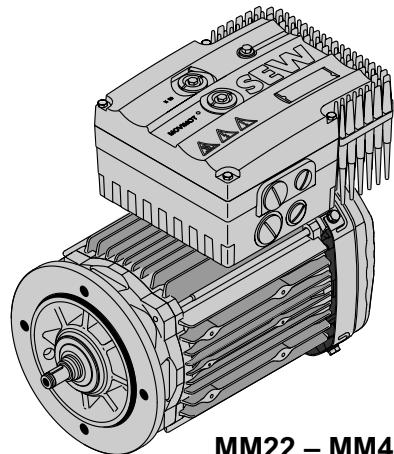
IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
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

7.3.6 MOVIMOT® drives with DRS.. motors



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V)

IEC or UL

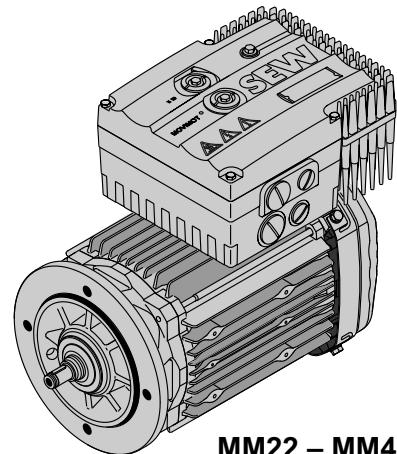
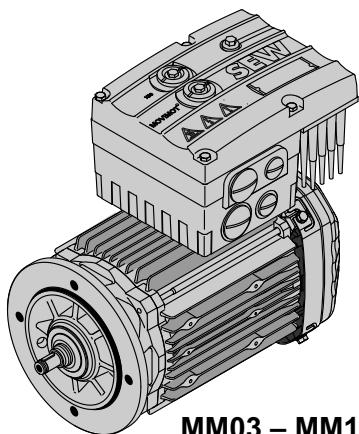
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRS71S4 /..MM03	0.37	2.52	1.5	1400	1.3	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /..MM05	0.55	3.75	1.5	1400	1.6	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /..MM07	0.75	5.1	1.5	1400	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 min⁻¹ △ 3 × 380 – 500 V (400 V)

IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
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

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



280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V)

IEC or UL

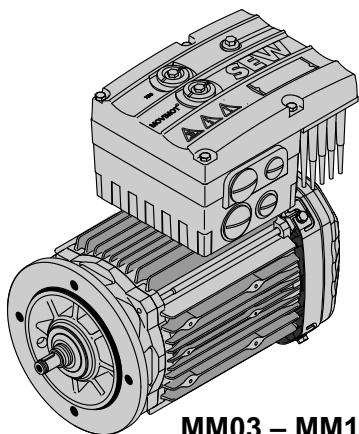
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DRS71S4 /..MM05	0.37	2.52	2.1	1400	1.3	0.99	4.9	6.2	5	9.0	11.4
DRS71M4 /..MM07	0.55	3.75	2.1	1400	1.6	0.99	7.1	8.4	10	10.3	12.9
DRS80S4 /..MM11	0.75	5.1	2.1	1400	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 min⁻¹ △ 3 × 380 – 500 V (400 V)

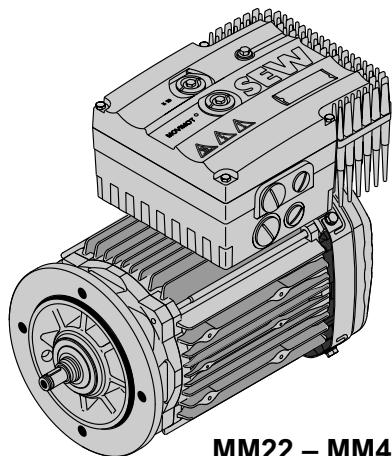
IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
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

7.3.8 MOVIMOT® drives with DR2S.. motors



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V)

IEC or UL

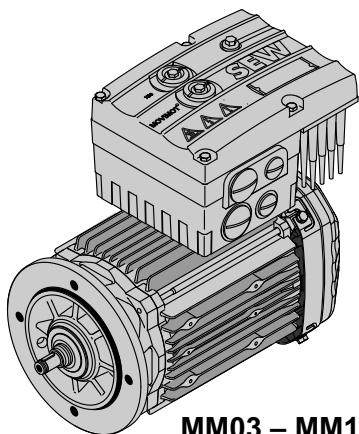
Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DR2S71MS4/..MM03	0.37	2.6	1.5	1400	1.3	0.99	5.42	6.72	5	8.4	10.8
DR2S71M4/..MM05	0.55	3.85	1.5	1400	1.6	0.99	7.14	8.44	10	9.6	12.6
DR2S80MK4/..MM07	0.75	5.1	1.5	1400	1.9	0.99	17.1	18.6	10	12.6	15.6
DR2S80M4/..MM11	1.1	7.4	1.5	1400	2.4	0.99	24.7	29.2	14	15.6	19.6

290 – 2900 min⁻¹ △ 3 × 380 – 500 V (400 V)

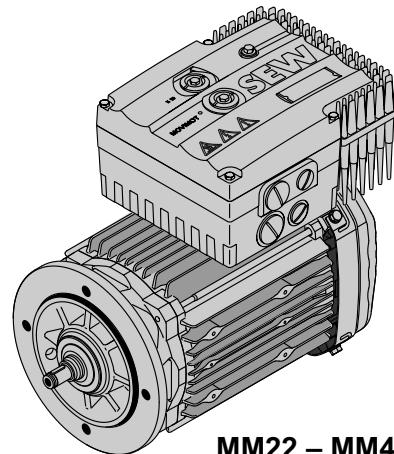
IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DR2S71MS4/..MM05	0.55	1.81	2	2900	1.6	0.99	5.42	6.72	5	8.4	10.8
DR2S71M4/..MM07	0.75	2.47	2	2900	1.9	0.99	7.14	8.44	10	9.6	12.6
DR2S80MK4/..MM11	1.1	3.62	2	2900	2.4	0.99	17.1	18.6	10	12.6	15.6
DR2S80M4/..MM15	1.5	4.95	1.6	2900	3.5	0.99	24.7	29.2	14	15.6	19.6

7.3.9 MOVIMOT® drives with DR2S.. motors and increased short-term torque



MM03 – MM15



MM22 – MM40

280 – 1400 min⁻¹ ▲ 3 × 380 – 500 V (400 V)

IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DR2S71MS4/..MM05	0.37	2.6	2.1	1400	1.3	0.99	5.42	6.72	5	8.4	10.8
DR2S71M4/..MM07	0.55	3.85	2.1	1400	1.6	0.99	7.14	8.44	10	9.6	12.6
DR2S80MK4/..MM11	0.75	5.1	2.1	1400	1.9	0.99	17.1	18.6	10	12.6	15.6
DR2S80M4/..MM15	1.1	7.4	2.1	1400	2.4	0.99	24.7	29.2	14	15.6	19.6

290 – 2900 min⁻¹ △ 3 × 380 – 500 V (400 V)

IEC or UL

Type	P _N kW	M _N Nm	M _A /M _N f > 5 Hz	n _N min ⁻¹	I _N A	cosφ	J _{Mot} 10 ⁻⁴ kgm ²	J _{BMot} 10 ⁻⁴ kgm ²	M _B Nm	m _{Mot} kg	m _{BMot} kg
DR2S71MS4/..MM07	0.55	1.81	2.4	2900	1.6	0.99	5.42	6.72	5	8.4	10.8
DR2S71M4/..MM011	0.75	2.47	2.4	2900	1.9	0.99	7.14	8.44	10	9.6	12.6
DR2S80MK4/..MM15	1.1	3.62	2.4	2900	2.4	0.99	17.1	18.6	10	12.6	15.6
DR2S80M4/..MM22	1.5	4.95	2.2	2900	3.5	0.99	24.7	29.2	14	22.3	26.3

7.4 Functional safety

7.4.1 Order information

INFORMATION



- The SafetyDRIVE design must be ordered explicitly. (Order note: "– Safety-DRIVE").
- In safety applications, only components may be used that were supplied by SEW-EURODRIVE in this design and that are marked with the FS logo for functional safety.

7.4.2 Permitted SafetyDRIVE designs

Only the following combinations with MOVIMOT® are permitted for safety-relevant applications:

Permitted designs	MOVIMOT® type designation
MOVIMOT® with binary control (control via terminals)	
MOVIMOT® with AS-Interface option MLK32A	
MOVIMOT® with MBG11A option	
MOVIMOT® with MWA 21A option	
MOVIMOT® with MBK11A or MBK12A option	
MOVIMOT® with BEM option	
MOVIMOT® with URM option	D../MM.. – SafetyDRIVE
MOVIMOT® with MNF21A option	MM..D-503-00 – SafetyDRIVE
MOVIMOT® and MOVIFIT® MC with FS logo and externally switched 24 V supply (STO)	
MOVIMOT® and MOVIFIT® MC with FS logo and PROFIsafe option S11	
MOVIMOT® and MOVIFIT® MC with FS logo and safety option S12	
MOVIMOT® with field distributors Z.6, Z.7, Z.8 or Z.9	

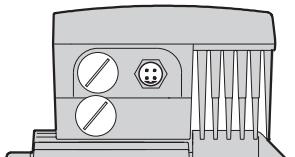
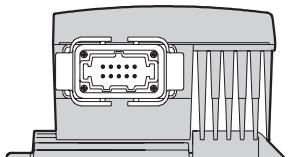
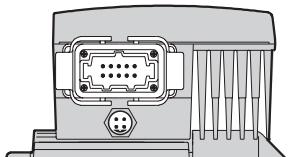
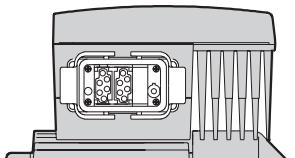
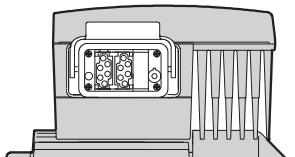
For information on the safety function and the safety-related requirements, refer to the "MOVIMOT® MM..D – Functional Safety" manual.

7.5 Connection technology

7.5.1 Overview of MOVIMOT® standard design connection technology

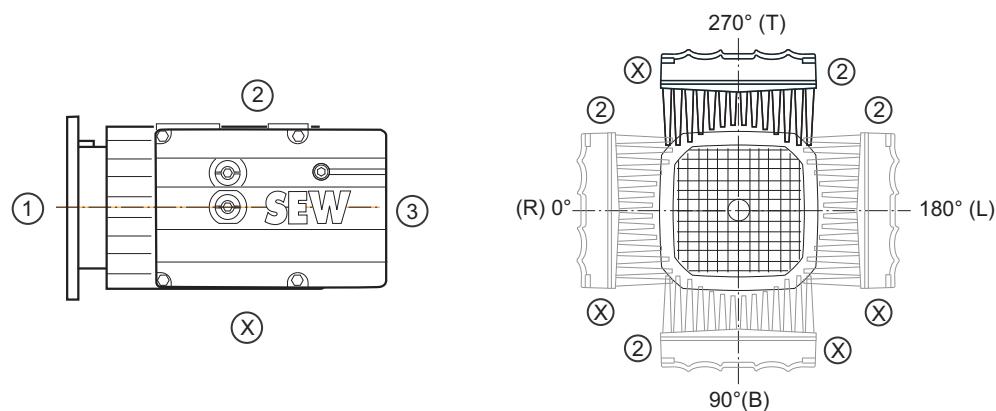
MOVIMOT® MM..D is supplied without plug connector if not specified otherwise in the order.

The following table shows the available plug connector variants:

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

Possible 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	X (standard)
AMD6	2

7.5.2 Overview of connection technology MOVIMOT® with integrated AS-Interface

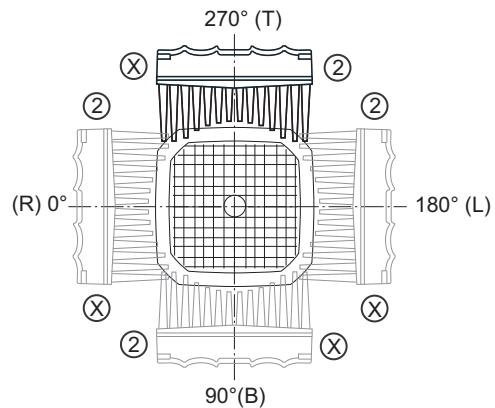
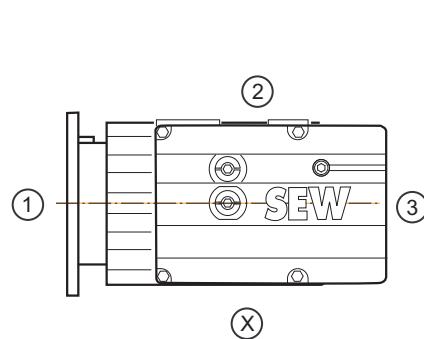
MOVIMOT® MM..D with integrated AS-Interface is supplied with the AVSK plug connector if not specified otherwise in the order.

The following table shows the available plug connector designs:

Order designation	Function	Manufacturer's designation
MM../AVSK 	<ul style="list-style-type: none"> AS-Interface 	1 × round plug connector M12 × 1
MM../AZSK 	<ul style="list-style-type: none"> AS-Interface AUX PWR Sensor port 	3 × round plug connector M12 × 1
MM../AND3/AZSK 	<ul style="list-style-type: none"> Power AS-Interface AUX PWR Sensor port 	Harting Han® Q8/0 pin insert (built-on housing with 1 clip) + 3 × round plug connector M12 × 1
MM../AZZK 	<ul style="list-style-type: none"> AS-Interface/AUX PWR Sensor port Sensor port 	3 × round plug connector M12 × 1
MM../AND3/AZZK 	<ul style="list-style-type: none"> Power AS-Interface/AUX PWR Sensor port Sensor port 	Harting Han® Q8/0 pin insert (built-on housing with 1 clip) + 3 × round plug connector M12 × 1
MM../AZFK 	<ul style="list-style-type: none"> AUX PWR AS-Interface Sensor port 	3 × M12 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.



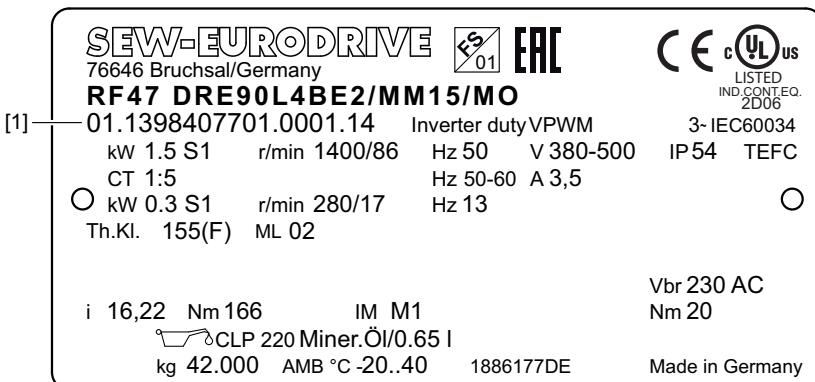
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7.6 Sample type designation

7.6.1 Standard design

Nameplate

The following figure gives an example of a MOVIMOT® drive nameplate. The nameplate is attached to the motor.



18014399029659147

[1] Serial number

Type designation

The following table shows an example of the type designation of the MOVIMOT® drive RF47 DRE90L4BE2/MM15/MO:

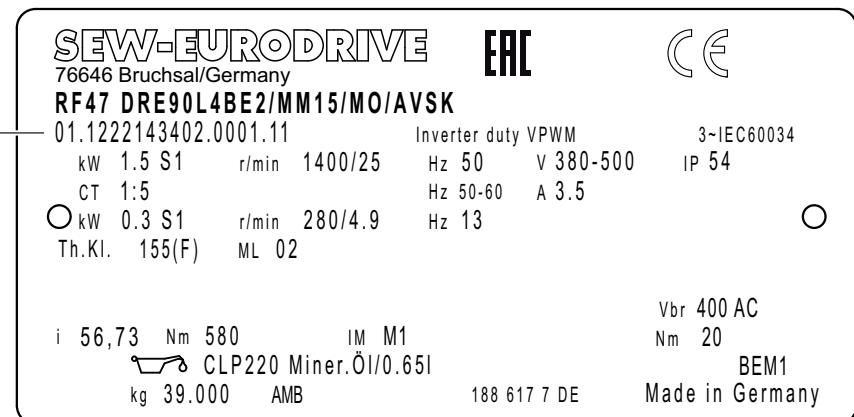
RF	Gear unit series	
47	Gear unit size	
DRE	Motor series (DRS..., DRE..., DRN...)	
90L	Motor size	
J	Rotor	C = copper rotor J = LSPM rotor
4	Number of motor poles	
BE2	Additional feature motor (brake)	
/		
MM15	MOVIMOT® inverter	
/		
MO	Additional feature: inverter¹⁾	

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

7.6.2 MOVIMOT® with integrated AS-interface

Nameplate

The following figure gives an example of a MOVIMOT® drive nameplate. The nameplate is attached to the motor.



[1] Serial number

Type designation

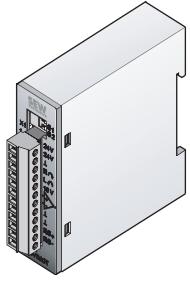
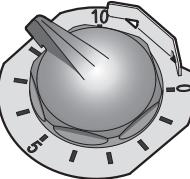
The following table shows an example of the type designation of the MOVIMOT® drive **RF47 DRE90L4BE2 /MM15/MO/AVSK**:

RF	Gear unit series	
47	Gear unit size	
DRE	Motor series (DRS..., DRE..., DRN...)	
90L	Motor size	
J	Rotor	C = copper rotor J = LSPM rotor
4	Number of motor poles	
BE2	Additional feature motor (brake)	
/		
MM15	MOVIMOT® inverter	
/		
MO	Additional feature: inverter ¹⁾ (e.g. MLK30A)	
/		
AVSK	Plug connector for AS-Interface	

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

7.7 Options

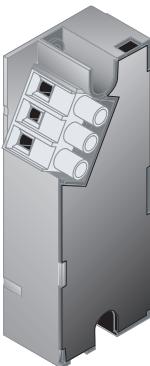
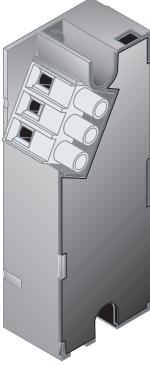
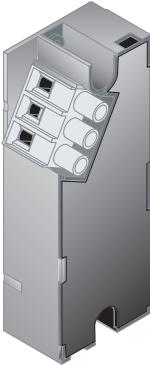
The following tables show the options for MOVIMOT® MM..D.

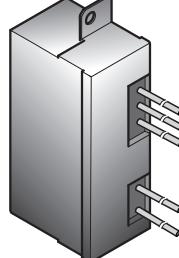
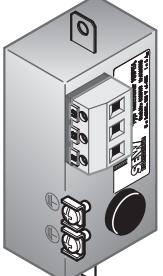
Option	Image	Description
DC 24 V supply MLU11A (input voltage AC 380 – 500 V) part number: 08233837		The MLU.1A option is mounted with a MOVIMOT® cable gland. The option provides the DC 24 V voltage supply for the MOVIMOT® inverter, including one option with a maximum power consumption of 70 mA (MBG11A, MWA21A). An external 24 V auxiliary voltage is not required.
Setpoint adjuster with DC 24 V supply MLG11A (input voltage AC 380 – 500 V) part number: 08233845		The MLG.1A option is mounted with a MOVIMOT® cable gland. The option allows to set the input speed in the range of -100% – +100% f_{max} (potentiometer f1). An external 24 V auxiliary voltage is not required.
Setpoint adjuster MBG11A part number: 08225478		The MBG11A setpoint adjuster has 2 keys and a display. The keys allow for remote speed control in the range of -100% – +100% f_{max} (potentiometer f1). Up to 31 MOVIMOT® drives can be controlled simultaneously (broadcasting).
Setpoint converter MWA21A part number: 08230064		The MWA21A setpoint converter converts an analog setpoint and control signals into an RS485 protocol. This allows to control of the MOVIMOT® drive from the control cabinet remotely. Up to 31 MOVIMOT® drives can be controlled simultaneously (broadcasting).
Rotary button MBK11A (for MOVIMOT® MMD03 – MMD15..) Part number: 28230035		The drive speed can be set in the range of 0 – 100% using the adjusting knob. The MBK.. adjusting knob is mounted onto the setpoint potentiometer f1 of the MOVIMOT® inverter instead of the screw plug.
MBK12A (for MOVIMOT® MMD22 – MMD40..) Part number: 28230043		NOTICE The MOVIMOT® inverter with adjusting knob has the degree of protection IP54.

7.7.1 Options integrated in connection box

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	Image	Description
BEM brake control Part number: 08296111		<p>The BEM brake rectifier serves to control the brake of the MOVIMOT® drive.</p> <p>The BEM brake control implements fast release and application of the mechanical brake.</p> <p>NOTICE: The brake coil must correspond to the connection voltage.</p>
BES brake control Part number: 08298475		<p>The BES brake rectifier serves to control the DC 24 V brake (not standard) of the MOVIMOT® drive.</p> <p>The brake is controlled by means of parameter setting or activating additional function 7 or 9.</p> <p>The BES brake control implements normal release and fast application of the mechanical brake.</p> <p>NOTICE: The brake coil must be designed as a DC 24 V coil.</p>
URM voltage relay Part number: 08276013		<p>The URM voltage relay implements rapid application of the mechanical brake.</p> <p>NOTICE: The brake coil must correspond to the MOVIMOT® standard (AC 120 V or AC 230 V).</p>

Option	Image	Description
Internal DC 24 V voltage MLU13A Part number: 18205968		<p>The MLU13A option is installed in the modular connection box of the MOVIMOT® drive as standard.</p> <p>The option provides the DC 24 V voltage supply for the MOVIMOT® inverter, including one option with a maximum power consumption of 70 mA (MBG11A, MWA21A). An external 24 V auxiliary voltage is not required.</p> <p>Note that the height of the terminal box is higher for MOVIMOT® MM03 to MM15 by 18 mm.</p>
MNF21A internal line filter Part number: 08042659		<p>The MNF21A option is mounted in the connection box of the MOVIMOT® (MM03 – MM15).</p> <p>The option allows for implementing a drive system that complies with category C1 in accordance with EN 61800-3 with respect to interference emission.</p> <p>The option requires the modular terminal box with increased dimensions.</p> <p>Note that the height of the terminal box is higher for MOVIMOT® MM03 to MM15 by 18 mm.</p>

7.7.2 Factory-installed external options

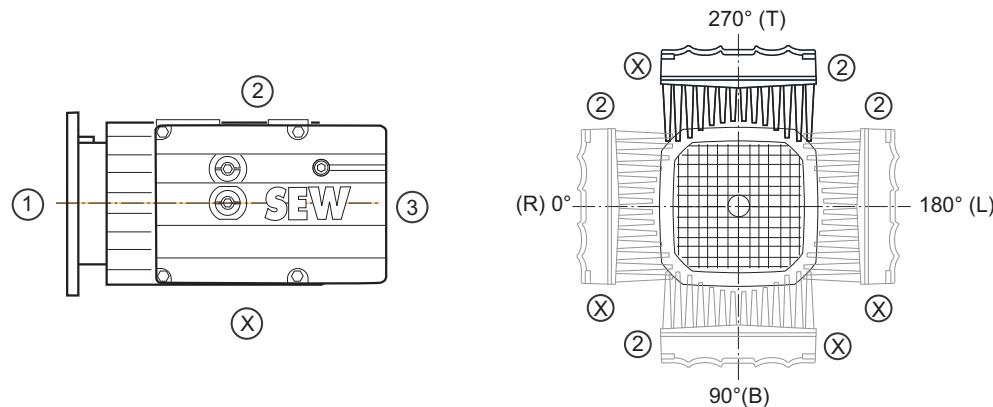
On request, the following options can be installed at the connection box at the factory (mounted, wired, and ready for operation):

- Local DC 24 V supply (MLU.1A)
- Local speed control module with DC 24 V supply (MLG.1A)
- PROFIBUS fieldbus interface (MFP..../MQP..)
- PROFINET IO fieldbus interface (MFE52..)
- EtherNet/IP™ fieldbus interface (MFE62..)
- EtherCAT® fieldbus interface (MFE72..)
- DeviceNet™ fieldbus interface (MFD..../MQD..)
- Hybrid cable for connection between MF.../Z.3. or MF.../6. field distributor and MOVIMOT® (1–5 m)

Important order information

The external options can be installed in the following positions as standard:

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

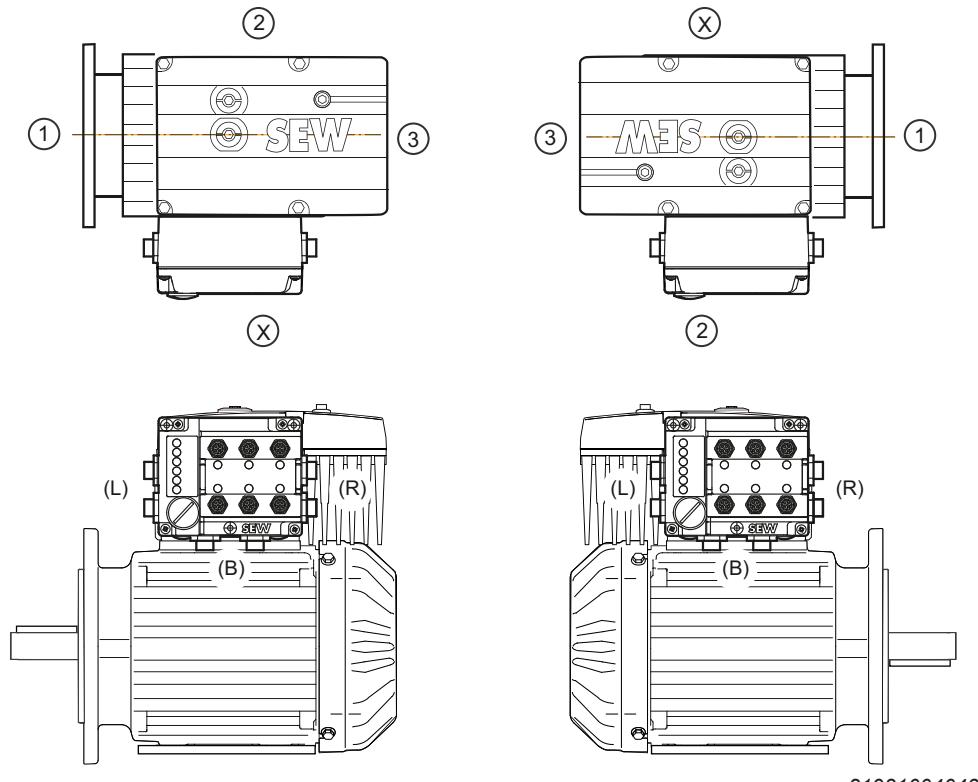


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Possible plug connector locations on the fieldbus interface

It is possible to install the fieldbus interface in location "X" or location "2" on the MOVIMOT® connection box.

The plug connectors on the fieldbus interface are available in positions (L), (B), or (R) in accordance with the following figure:



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7.8 Braking resistors

7.8.1 Assignment of internal braking resistors

The following table shows the assignments of internal braking resistors to MOVIMOT®.

MOVIMOT® type	Braking resistor	Part number
MM03D-503-00 – MM15D-503-00	BW1	08228973 ¹⁾
MM03D-233-00 – MM07D-233-00		
MM22D-503-00 – MM40D-503-00	BW2	08231362 ¹⁾
MM11D-233-00 – MM22D-233-00		

1) 2 screws M4 × 8 included in the delivery.

7.8.2 Assignment of external braking resistors

The following table shows the assignments of external braking resistors to MOVIMOT®.

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	08282919	0813152X
	BW200-005/K-1.5	08282838	–
	BW150-006/T	17969565	–
MM22D-503-00 – MM40D-503-00 MM11D-233-00 – MM22D-233-00	BW100-003/K-1.5	08282935	0813152X
	BW100-005/K-1.5	08282862	–
	BW068-006/T	17970008	–
	BW068-012/T	17970016	–

7.9 Brake coil assignment

The following table shows the assignment of the brake coil to the respective motor. For the regenerative current-carrying capacity of the brake coil, refer to the chapter "4Q operation with motors with mechanical brake" (→ 453).

Motor	Brake coil assignment	
	Standard brake	Optional brake
DR63L4	BR03	–
DR2S63M4	BE03	BE03
DRN71MS4	BE03	BE05
DR2S71MS4	BE05	BE1
DRS71S4		
DRE80S4		
DRN71M4		
DR2S71M4	BE1	BE05
DR2S80MK4		
DRS71M4		
DRS80S4		
DRE80M4		
DRN80M4		
DRN80MK4		
DRS80M4	BE2	BE1
DRE90M4		
DRN90S4		
DR2S80M4	BE2	BE1
DRS90M4		
DRE90L4		
DRN90L4		
DRS90L4	BE5	BE2
DRE100M4		
DRE100L4		
DRN100LS4		
DRS100M4	BE5	BE2
DRS100L4		
DRS100LC4		
DRE100LC4		
DRN100L4		
DRE132S4	BE5	BE11
DRN112M4		

8 MOVIMOT® mounting close to the motor (remote)

8.1 Description

The following figure shows the MOVIMOT® design for mounting close to the motor (left: size MM03 to MM15, right: size MM22 to MM40):

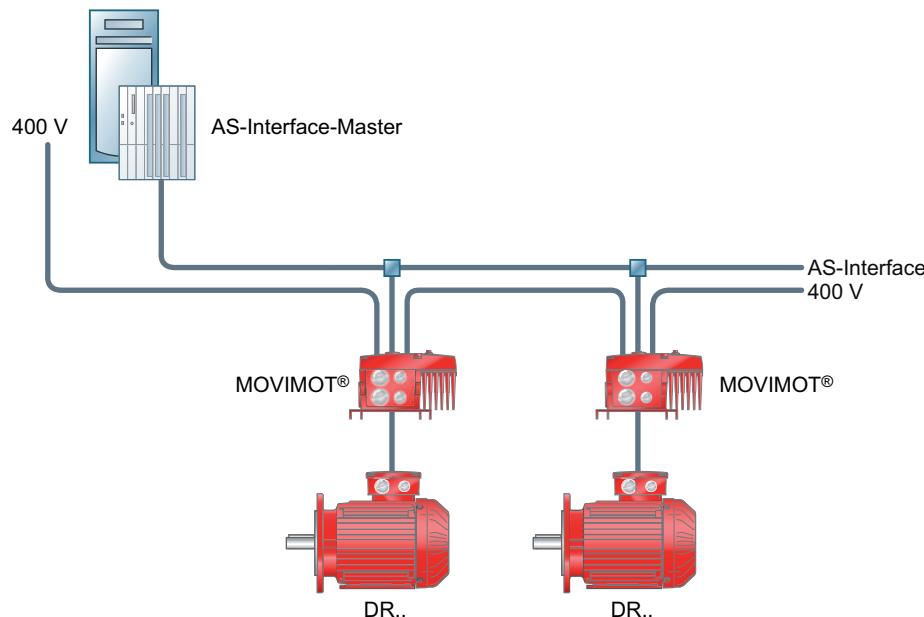


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- The P2.A option is used to mount the MOVIMOT® inverter in close proximity to the motor (i.e. separate from the motor).
- The inverter is connected to the "assigned motor" (→ 388) using a prefabricated "hybrid cable" (→ 392).
- MOVIMOT® with option P2.A is with IP65 degree of protection.

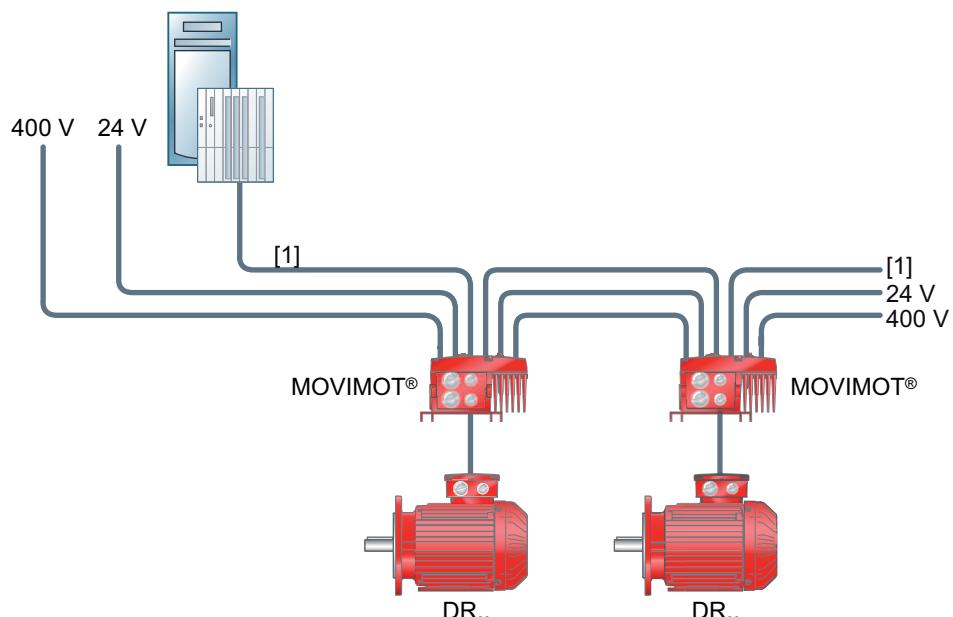
8.2 Installation topology of MOVIMOT®, mounting close to the motor

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



5254113291

The following figure shows the basic installation topology of the MOVIMOT® drive when mounted close to the motor:

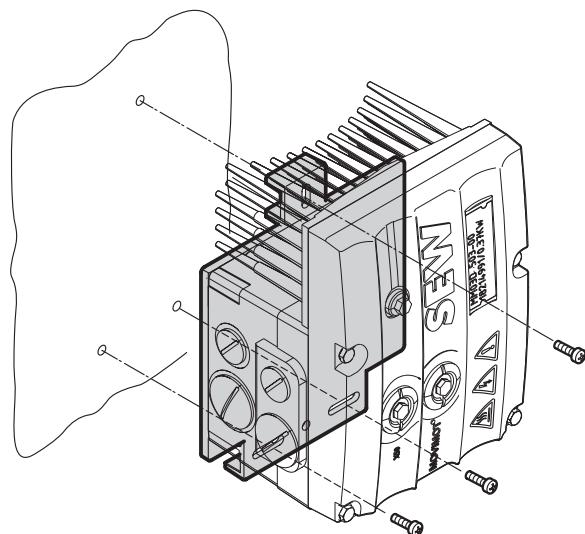


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[1] Control: Binary (+ RS485)

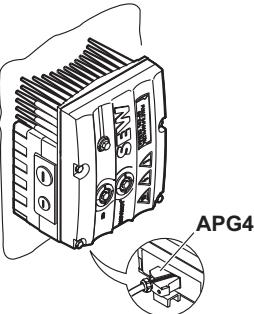
8.3 Available variants

The following figure shows an example of the P21A option for MOVIMOT® sizes MM03 to MM15:



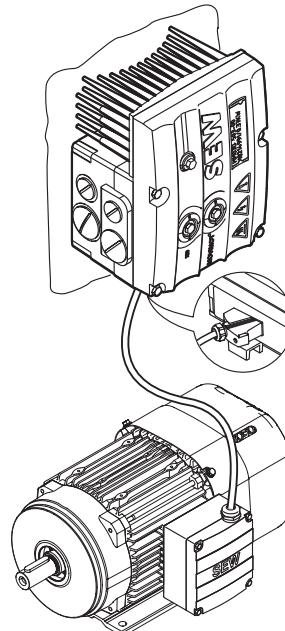
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The following designs are available:

Connection to motor	MOVIMOT® size	¹⁾	MOVIMOT® standard design	MOVIMOT® with integrated AS-interface
APG4 	MM03 to MM15	✗	MM..D-503-00/0/P21A/ RO1A/APG4	MM..D-503-00/0/P21A/ RR3A/AVSK/APG4/MLK
		△	MM..D-503-00/1/P21A/ RO1A/APG4	MM..D-503-00/1/P21A/ RR3A/AVSK/APG4/MLK
	MM22 to MM40	✗	MM..D-503-00/0/P22A/ RO2A/APG4	MM..D-503-00/0/P22A/ RR4A/AVSK/APG4/MLK
		△	MM..D-503-00/1/P22A/ RO2A/APG4	MM..D-503-00/1/P22A/ RR4A/AVSK/APG4/MLK

1) Connection type of connected motor

8.4 Type designation of MOVIMOT® MM..D, mounting close to the motor



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8.4.1 Type designation

The following table shows the type designation for the MOVIMOT® inverter **MM15D-503-00/0/P21/RO1A/APG4** with mounting close to the motor:

MM15D-503-00	MOVIMOT® inverter
/	
0	Connection type 0 = \triangle 1 = Δ
/	
P21A	Adapter for mounting close to the motor
/	
RO1A	Connection box design
/	
APG4	Plug connector for connection to motor

8.4.2 Ordering of an integrated braking resistor

MM22D-503-00/0/BW./P22A/RO2A/APG4

MM03 – MM15: **BW1**
 MM22 – MM40: **BW2**

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For the regenerative current-carrying capacity of the braking resistors, refer to the chapter "4Q operation with integrated BW.. braking resistor" (\rightarrow 452).

8.5 Motor assignment

8.5.1 Motor requirements

The following table lists the basic requirements and restrictions for assigned motors. Observe these specifications without fail when ordering the drive assigned to MOVIMOT® drive (design for installation close to the motor):

Characteristics	Requirements for the assigned AC motor		
Permitted motors	Only motors listed in the chapters "Motor assignment 1400 min ⁻¹ " (→ 388) and "Motor assignment 2900 min ⁻¹ " (→ 390) are approved.		
Permitted nominal voltage	Depending on motor series:		
Motor type	Nominal voltage V	Line frequency Hz	
DR2S..	230/400	50	
DRS..	230/400	50	
DRE..	230/400	50	
DRS../DRE..	230/400	50	
DRN..	230/400	50	
Permitted brakes	Depending on motor series:		
Motor type	Standard brake type	Optional brake type	
DR63L4	BR03	–	
DR2S63M4	BE03	BE03	
DRN71MS4	BE03	BE05	
DR2S71MS4	BE05	BE1	
DRS71S4	BE05	BE1	
DRE80S4			
DRN71M4			
DR2S71M4	BE1	BE05	
DR2S80MK4			
DRS71M4			
DRS80S4			
DRE80M4			
DRN80M4			
DRN80MK4			
DR2S80M4	BE2	BE1	
DRS80M4			
DRE90M4			
DRN90S4			

Characteristics	Requirements for the assigned AC motor				
	DRS90M4 DRE90L4 DRN90L4	BE2	BE1		
	DRS90L4 DRE100M4 DRE100L4 DRN100LS4	BE5	BE2		
	DRS100M4 DRS100L4 DRS100LC4 DRE100LC4 DRN100L4	BE5	BE2		
	DRE132S4 DRN112M4	BE5	BE11		
Preferred brake voltage	MM..D-503, size 1 (MM03.. – MM15..)	230 V			
	MM..D-503, size 2 (MM22.. – MM40..)	120 V			
Brake rectifier	Always order the assigned motor without brake rectifier .				
Permitted plug connectors	MM../P2.A/RO.A/APG4: <ul style="list-style-type: none"> • ASB4 plug connector • ISU4 plug connector 	See the chapter "Hybrid cables" (→ 392) for additional information.			
Permitted motor protection	SEW-EURODRIVE recommends that you always order the motor with TH thermostat (bimetallic switch). Motor protection can also be implemented in the Expert mode of the MOVIMOT® inverter.				
Permitted encoder system	EI76 incremental encoder (can be evaluated only via fieldbus interface with integrated MQ.. minicontroller).				

8.5.2 Motor assignment 1400 min⁻¹

Power kW	Motor (230/400 V, 50 Hz) ↗	MOVIMOT® with option P.2A
0.25	DR63L4/TH DR2S63M4/TH DRE80S4/TH. DRN71MS4/TH.	MM03D-503-00/0/BW1/P21A.. ¹⁾
	DR63L4/BR../TH. DR2S63M4/BE../TH. DRE80S4/BE../TH. DRN71MS4/BE../TH.	MM03D-503-00/0/P21A.. ¹⁾
0.37	DR2S71MS4/TH. DRS71S4/TH. DRE80S4/TH. DRN71M4/TH.	MM03D-503-00/0/BW1/P21A.. MM05D-503-00/0/BW1/P21A.. ¹⁾
	DR2S71MS4/BE../TH. DRS71S4/BE../TH. DRE80S4/BE../TH. DRN71M4/BE../TH.	MM03D-503-00/0/P21A.. MM05D-503-00/0/P21A.. ¹⁾
0.55	DR2S71M4/TH. DRS71M4/TH. DRE80M4/TH. DRN80MK4/TH.	MM05D-503-00/0/BW1/P21A.. MM07D-503-00/0/BW1/P21A.. ¹⁾
	DR2S71M4/BE../TH. DRS71M4/BE../TH. DRE80M4/BE../TH. DRN80MK4/BE../TH.	MM05D-503-00/0/P21A.. MM07D-503-00/0/P21A.. ¹⁾
0.75	DR2S80MK4/TH. DRS80S4/TH. DRE80M4/TH. DRN80M4/TH.	MM07D-503-00/0/BW1/P21A.. MM11D-503-00/0/BW1/P21A.. ¹⁾
	DR2S80MK4/BE../TH. DRS80S4/BE../TH. DRE80M4/BE../TH. DRN80M4/BE../TH.	MM07D-503-00/0/P21A.. MM11D-503-00/0/P21A.. ¹⁾

Power kW	Motor (230/400 V, 50 Hz) ↗	MOVIMOT® with option P.2A
1.1	DR2S80M4/TH.	MM11D-503-00/0/ BW1 /P21A..
	DRS80M4/TH.	MM15D-503-00/0/ BW1 /P21A.. ¹⁾
	DRE90M4/TH.	
	DRN90S4/TH.	
	DR2S80M4/ BE. /TH.	MM11D-503-00/0/P21A..
	DRS80M4/ BE. /TH.	MM15D-503-00/0/P21A.. ¹⁾
	DRE90M4/ BE. /TH.	
	DRN90S4/ BE. /TH.	
1.5	DRS90M4/TH.	MM15D-503-00/0/ BW1 /P21A..
	DRE90L4/TH.	MM22D-503-00/0/ BW2 /P22A.. ¹⁾
	DRN90L4/TH.	
	DRS90M4/ BE. /TH.	MM15D-503-00/0/P21A..
	DRE90L4/ BE. /TH.	MM22D-503-00/0/P22A.. ¹⁾
	DRN90L4/ BE. /TH.	
2.2	DRS90L4/TH.	MM22D-503-00/0/ BW2 /P22A..
	DRE100M4/TH.	MM30D-503-00/0/ BW2 /P22A.. ¹⁾
	DRN100LS4/TH.	
	DRS90L4/ BE. /TH.	MM22D-503-00/0/P22A..
	DRE100M4/ BE. /TH.	MM30D-503-00/0/P22A.. ¹⁾
	DRN100LS4/ BE. /TH.	
3.0	DRS100M4/TH.	MM30D-503-00/0/ BW2 /P22A..
	DRE100LC4/TH.	MM40D-503-00/0/ BW2 /P22A.. ¹⁾
	DRN100L4/TH.	
	DRS100M4/ BE. /TH.	MM30D-503-00/0/P22A..
	DRE100LC4/ BE. /TH.	MM40D-503-00/0/P22A.. ¹⁾
	DRN100L4/ BE. /TH.	
4.0	DRS100LC4/TH.	
	DRE132S4/TH.	MM40D-503-00/0/ BW2 /P22A..
	DRN112M4/TH.	
	DRE100LC4/ BE. /TH.	
	DRE132S4/ BE. /TH.	MM40D-503-00/0/P22A..
	DRN112M4/ BE. /TH.	

1) Combination with increased short-term torque

8.5.3 Motor assignment 2900 min⁻¹

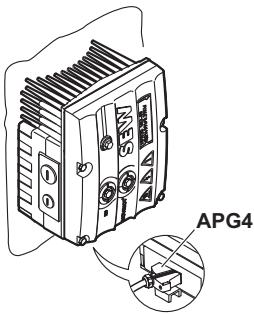
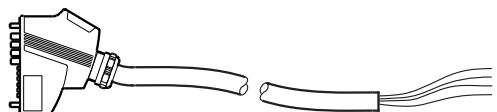
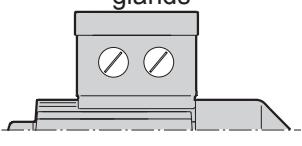
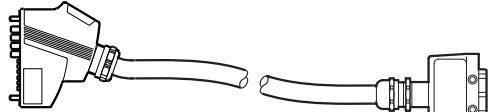
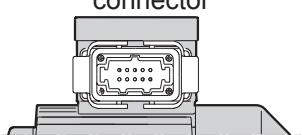
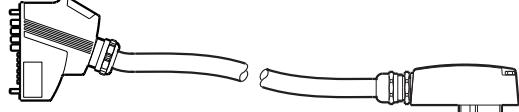
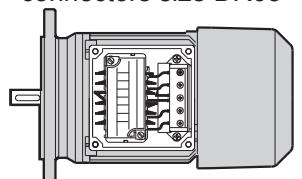
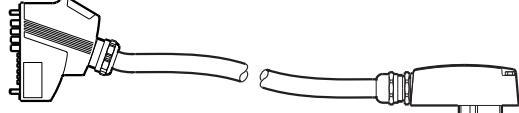
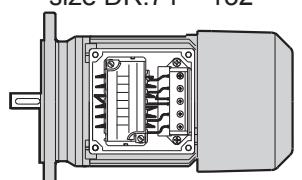
Power kW	Motor (230/400 V, 50 Hz) △	MOVIMOT® with option P2A
0.37	DR63L4/TH	MM03D-503-00/1/ BW1 /P21A..
	DR2S63M4/TH	MM05D-503-00/1/ BW1 /P21A.. ¹⁾
	DRE80S4/TH	
	DRN71MS4/TH	
	DR63L4/ BR ../TH.	MM03D-503-00/1/P21A..
	DR2S63M4/ BE ../TH.	MM05D-503-00/1/P21A.. ¹⁾
	DRE80S4/ BE ../TH.	
	DRN71MS4/ BE ../TH.	
0.55	DR2S71MS4/TH.	MM05D-503-00/1/ BW1 /P21A..
	DRS71S4/TH.	MM07D-503-00/1/ BW1 /P21A.. ¹⁾
	DRE80S4/TH.	
	DRN71M4/TH.	
	DR2S71MS4/ BE ../TH.	MM05D-503-00/1/P21A..
	DRS71S4/ BE ../TH.	MM07D-503-00/1/P21A.. ¹⁾
	DRE80S4/ BE ../TH.	
	DRN71M4/ BE ../TH.	
0.75	DR2S71M4/TH.	MM07D-503-00/1/ BW1 /P21A..
	DRS71M4/TH.	MM11D-503-00/1/ BW1 /P21A.. ¹⁾
	DRE80M4/TH.	
	DRN80MK4/TH.	
	DR2S71M4/ BE ../TH.	MM07D-503-00/1/P21A..
	DRS71M4/ BE ../TH.	MM11D-503-00/1/P21A.. ¹⁾
	DRE80M4/ BE ../TH.	
	DRN80MK4/ BE ../TH.	
1.1	DR2S80MK4/TH.	MM11D-503-00/1/ BW1 /P21A..
	DRS80S4/TH.	MM15D-503-00/1/ BW1 /P21A.. ¹⁾
	DRE80M4/TH.	
	DRN80M4/TH.	
	DR2S80MK4/ BE ../TH.	MM11D-503-00/1/P21A..
	DRS80S4/ BE ../TH.	MM15D-503-00/1/P21A.. ¹⁾
	DRE80M4/ BE ../TH.	
	DRN80M4/ BE ../TH.	

Power kW	Motor (230/400 V, 50 Hz) △	MOVIMOT® with option P2A
1.5	DR2S80M4/ BE. ./TH.	MM15D-503-00/1/ BW1 /P21A..
	DRS80M4/TH.	MM22D-503-00/1/ BW2 /P22A.. ¹⁾
	DRE90M4/TH.	
	DRN90S4/TH.	
2.2	DR2S80M4/ BE. ./TH.	MM15D-503-00/1/P21A..
	DRS80M4/ BE. ./TH.	MM22D-503-00/1/P22A.. ¹⁾
	DRE90M4/ BE. ./TH.	
	DRN90S4/ BE. ./TH.	
3.0	DRS90M4/TH.	MM22D-503-00/1/ BW2 /P22A..
	DRE90L4/TH.	MM30D-503-00/1/ BW2 /P22A.. ¹⁾
	DRN90L4/TH.	
	DRS90M4/ BE. ./TH.	MM30D-503-00/1/P22A..
4.0	DRE90L4/ BE. ./TH.	MM30D-503-00/1/P22A.. ¹⁾
	DRN90L4/ BE. ./TH.	
	DRS100M4/TH.	MM40D-503-00/1/ BW2 /P22A..
	DRE100LC4/TH.	
	DRN100L4/TH.	
	DRS100M4/ BE. ./TH.	MM40D-503-00/1/P22A..
	DRE100LC4/ BE. ./TH.	
	DRN100L4/ BE. ./TH.	

1) Combination with increased short-term torque

8.6 Hybrid cables

8.6.1 Connection between MOVIMOT® and motor when mounted close to the motor

MOVIMOT® inverter	Hybrid cables	Drive
MM..P2.A/RO.A/ APG4 	Part number DR.71 – DR.100: 01867423 Part number DR.112 – DR.132: 18116620 	AC motors with cable glands 
	Part number: 05930766 	AC motors with ASB4 plug connector 
	Part number: 05932785 (↙) Part number: 08163251 (△) 	AC motors with ISU4 plug connectors size DR63 
	Part number: 05937558 (↙) Part number: 0816326X (△) 	AC motors with ISU4 plug connectors size DR.71 – 132 

8.7 Options

8.7.1 Factory-installed external options

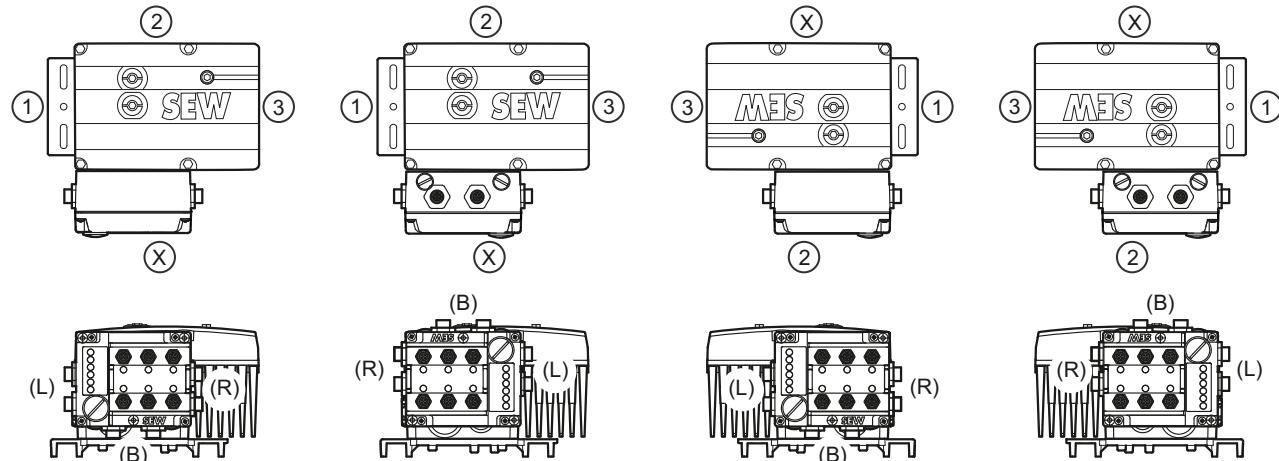
On request, the following options can be installed at the connection box at the factory (mounted, wired, and ready for operation):

- Local DC 24 V supply (MLU.1A)
- Local speed control module with DC 24 V supply (MLG.1A)
- PROFIBUS fieldbus interface (MFP../MQP..)
- PROFINET IO fieldbus interface (MFE52..)
- EtherNet/IP™ fieldbus interface (MFE62..)
- EtherCAT® fieldbus interface (MFE72..)
- DeviceNet™ fieldbus interface (MFD../MQD..)
- Hybrid cable for connection between MF.../Z.3. or MF.../.6. field distributor and MOVIMOT® (1–5 m)

Possible plug connector locations on the fieldbus interface

It is possible to install the fieldbus interface in location "X" or location "2" on the MOVIMOT® connection box.

The plug connectors on the fieldbus interface are available in positions (L), (B), or (R) in accordance with the following figure:



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Fieldbus interface

Fieldbus interface, turned by 180°

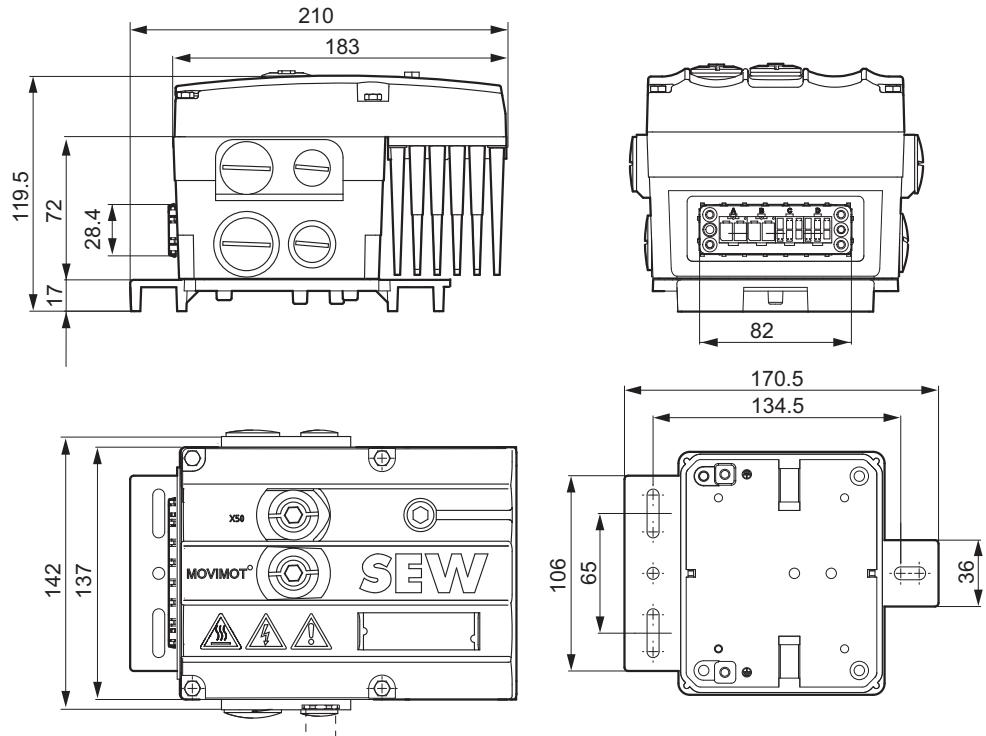
Fieldbus interface

Fieldbus interface, turned by 180°

8.8 Dimension drawings

8.8.1 Dimension drawing of MM03 to MM15 with option P21A (APG4 plug connector)

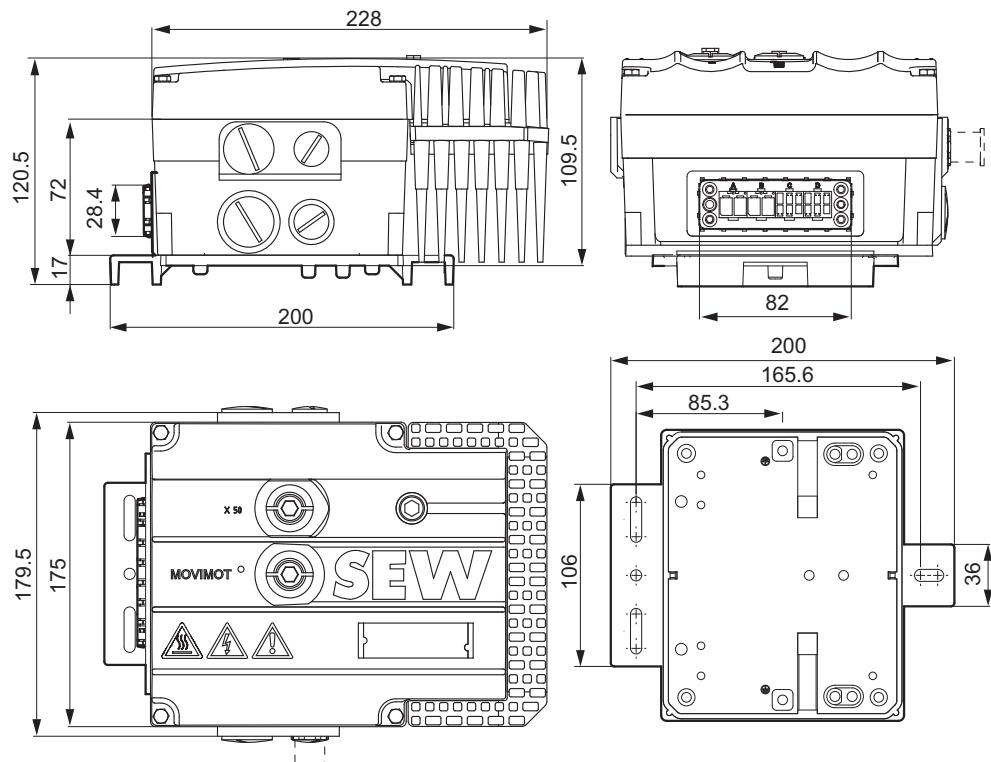
The following figure shows the dimensions of MM03 to MM15 with option P21A (APG4 plug connector):



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8.8.2 Dimension drawing of MM22 to MM30 with option P22A (APG4 plug connector)

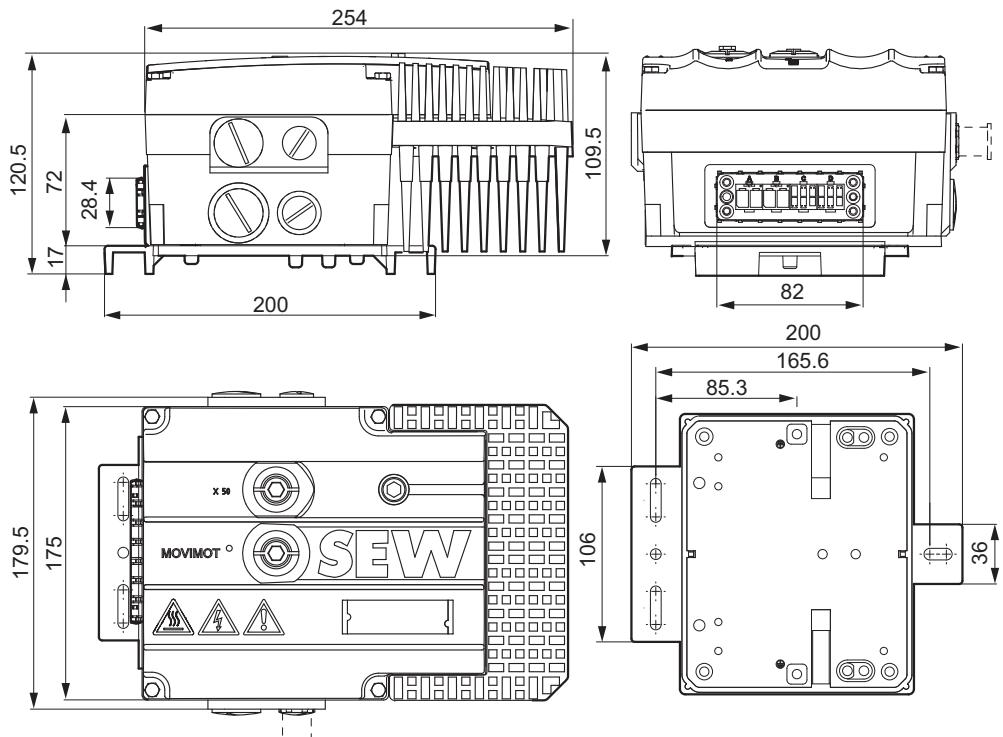
The following figure shows the dimensions of MM22 to MM30 with option P22A (APG4 plug connector):



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8.8.3 MM40 dimension drawing with option P22A (APG4 plug connector)

The following figure shows the dimensions of MM40 with option P22A (APG4 plug connector):



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9 Explosion-proof MOVIMOT® drives

9.1 Description

MOVIMOT® can also be delivered as explosion-proof drive.

The following figure shows a MOVIMOT® drive in size MM03 – MM15, and a fieldbus interface for use in potentially explosive areas:



9

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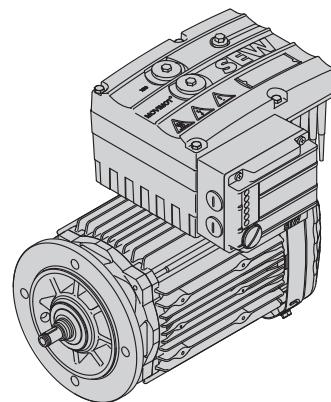
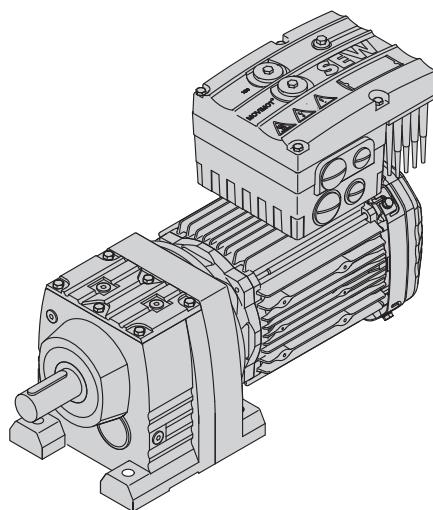
Explosion-proof MOVIMOT® drives are approved for use in potentially explosive areas of category 3D (zone 22) in compliance with standard EN 6079-0.

The following information must be adhered:

- The requirements of the type examination certificate and/or the delivered documentation must be adhered.
- Note the specifications on the nameplate.
- The MOVIMOT® inverter must be installed on the motor. Mounting the inverter close to the motor is not permitted.
- There may be no aggressive substances in the vicinity that could damage the painting and seals.
- The MOVIMOT® drive must not be operated in areas/applications that cause strong electrical charge on the motor housing.

9.2 Available MOVIMOT® motor combinations

9.2.1 MOVIMOT® MM..D in category 3D



3800507019

1400 min⁻¹ ▾ 3 × 400 – 500 V (400 V)

Type	P _N kW	M _N Nm	M _A /M _N Nm	n _N min ⁻¹	I _N A	cos φ	Brake	M _B Nm
EDRS71S4../MM03/3D	0.25	1.7	1.8	1400	1.0	0.99	BE05	5
EDRS71M4../MM05/3D	0.37	2.5	1.8	1400	1.3	0.99	BE1	10
EDRS80S4../MM07/3D	0.55	3.75	1.8	1400	1.6	0.99	BE2	20
EDRE80M4../MM11/3D	0.75	5.1	1.8	1400	1.9	0.99	BE2	20
EDRE90M4../MM15/3D	1.1	7.5	1.8	1400	2.4	0.99	BE2	20
EDRE90L4../MM22/3D	1.5	10.2	1.8	1400	3.5	0.99	BE2	20
EDRE100L4../MM30/3D	2.2	15	1.8	1400	5.0	0.99	BE5	55
EDRE112M4../MM40/3D	3.0	20.5	1.8	1400	6.7	0.99	BE5	55

2900 min⁻¹ △ 3 × 400 – 500 V (400 V)

Type	P _N kW	M _N Nm	M _A /M _N Nm	n _N min ⁻¹	I _N A	cos φ	Brake	M _B Nm
EDRS71S4../MM05/3D	0.37	1.2	1.8	2900	1.3	0.99	BE05	5
EDRS71M4../MM07/3D	0.55	1.8	1.8	2900	1.6	0.99	BE1	10
EDRS80S4../MM11/3D	0.75	2.5	1.8	2900	1.9	0.99	BE2	20
EDRE80M4../MM15/3D	1.1	3.6	1.8	2900	2.4	0.99	BE2	20
EDRE90M4../MM22/3D	1.5	4.9	1.8	2900	3.5	0.99	BE2	20
EDRE90L4../MM30/3D	2.2	7.2	1.8	2900	5.0	0.99	BE2	20
EDRE100L4../MM40/3D	3.0	9.9	1.8	2900	6.7	0.99	BE5	55

9.3 Sample type designation

9.3.1 Type designation of MOVIMOT® drives

Type designation

The following table shows an example of the type designation of the MOVIMOT® drive
RF47EDRE90M4 BE2/MM22/3D/MO

RF	Gear unit series
47	Gear unit size
E	Code letter for explosion protection of the motor
DRE	Motor series (DRS..., DRE..)
90M	Motor size
4	Number of motor poles
BE2	Optional design motor (brake)
/	
MM22	MOVIMOT® inverter
/	
3D	Category 3D (explosion protection)
/	
MO	Additional feature: inverter ¹⁾

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

9.3.2 MOVIMOT® inverter type designation

Type designation

The following table shows an example of the type designation of the MOVIMOT® inverter **MM15D-503-04/3D:**

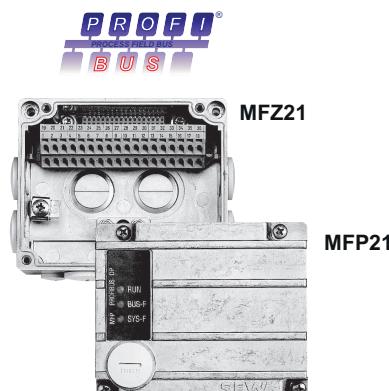
MM	Unit series	MM = MOVIMOT®
15	Inverter size	15 = 1.5 kW
D	Version D	
-		
50	Connection voltage	50 = AC 380 – 500 V
3	Connection type	3 = 3-phase
-		
04	Design	04 = Special design 04
/		
3D	Category 3D (explosion protection)	

9.4 Options

The following explosion-proof options for MOVIMOT® drives are approved for use in potentially explosive areas of category 3D (zone 22) according to EN 60079-0.

9.4.1 Fieldbus interface in category 3D

The following figure shows the available fieldbus interfaces in category 3D:



9007203048847755

Available variants

PROFIBUS variants

Fieldbus interface + module terminal box	MFP21D/Z21D/3D
Part number	08236801
Connection technology sensors/actuators	Terminals
Digital inputs	4
Digital outputs	2

Type designation of fieldbus interfaces

Type designation

The following table shows the type designation of the fieldbus interface **MFP21D/Z21D/3D**:

MFF	Fieldbus interface
MFP..	= PROFIBUS
21	Connections
	21 = 4 × I, 2 × O (connection via terminals)
D	Variant
/	
Z21	Connection module
	Z21 = For PROFIBUS
D	Variant
/	
3D	Category 3D (explosion protection)

9.4.2 Setpoint converter MLA12A in category 3D

The following figure shows the setpoint converter MLA12A in category 3D:



Setpoint converter	MLA12A
Part number	08232342

The setpoint converter MLA12A in category 3D is available mounted to the MOVIMOT® connection box only.