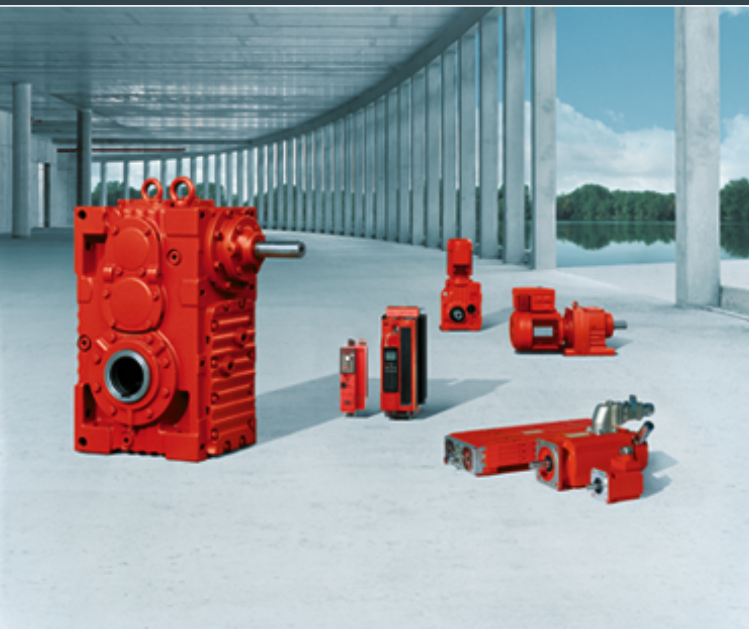




Type Code



Product Training

Type Code Volume 2

Control Cabinet Inverters, Drives, Roller Drives,
Industrial Gear Units



Contents

1	MOVI-C®	5
1.1	Product description	5
1.2	Nameplates of MOVIDRIVE® modular	7
1.3	Type code of MOVIDRIVE® modular	10
1.4	Nameplate of MOVIDRIVE® system	11
1.5	Type code of MOVIDRIVE® system	12
1.6	Nameplate of MOVIDRIVE® technology	13
1.7	Type code of MOVIDRIVE® technology	14
1.8	MOVI-C® CONTROLLER standard UHX25A	15
1.9	MOVI-C® CONTROLLER advanced UHX45A	15
1.10	MOVI-C® CONTROLLER power/power eco UHX85A/ UHX84A	16
2	MOVIDRIVE® B	17
2.1	Description	17
2.2	Nameplates of MOVIDRIVE® MDX60B/61B	19
2.3	Type designation	20
2.4	MOVIDRIVE MDR60B/61B type designation	21
3	MOVIAXIS®	22
3.1	Description	22
3.2	Structure of the nameplate	22
3.3	Axis module nameplate	23
3.4	Nameplate of the power supply module	23
3.5	Type designation for MOVIAXIS® basic devices	23
3.6	Type designation for MOVIAXIS® optional assemblies	26
4	MOVITRAC® B	27
4.1	MOVITRAC® B – compact, versatile and universal	27
4.2	Type designation	27
4.3	Nameplate	28
5	MOVITRAC® LTE-B+	29
5.1	Technology	29
5.2	Type designation	30
6	MOVITRAC® LTP-B	31
6.1	Markets and applications	31
6.2	Type designation	31
7	Asynchronous AC Motors	32
7.1	Description of DR../DRN.. and EDR../EDRN.. AC motors	32
7.2	DRN.. motor nameplate	33
7.3	DR.., DRN.. AC brakemotor type designation	34
7.4	Designation of the motors	34
7.5	Nameplates of EDR../EDRN.. motors	35
7.6	Type designation of EDR.., EDRN.. motors	38
7.7	Designs and options	39

7.8	Description of DRL.. asynchronous servomotors	42
8	Synchronous Servomotors	43
8.1	CMP.. motors	43
8.2	CMS../CMSM.. electric cylinders	47
8.3	SL2 synchronous linear motors	52
9	Synchronous Servo Gearmotors	59
9.1	Description	59
9.2	Servo gearmotor nameplate	60
9.3	Type designation	61
10	Gear Units and Adapters	62
10.1	Description of R, F, K, S, W gear units	62
10.2	Variants and options of R, F, K, S, W gear units	62
10.3	Nameplate/type designation	65
10.4	Description of BS.F, PS.F, PS.C gear units	67
10.5	Variants and options of BS.F, PS.F and PS.C gear units ..	68
10.6	Nameplate/unit designation	70
10.7	Components on the input side	72
10.8	Description of gear units for electrified monorail systems ..	74
11	ECDrives®	76
11.1	Characteristics and features	76
11.2	Type code	76
11.3	Overview of the roller drives	78
11.4	Overview of the hardware of the ECC-DFC fieldbus controller 80	
11.5	Overview of the hardware of the ECC-DBC binary control 81	
12	Industrial Gear Units	82
12.1	X.. series	82
12.2	MC.. Series	88
12.3	P.002 – P.102 Series	91

1 MOVI-C®

1.1 Product description

With its brand MOVI-C®, SEW-EURODRIVE is launching a new generation of drive and automation technology. MOVI-C® is the modular automation system that enables the highest level of system and machine automation.

MOVI-C® comprises drive technology, MotionControl, control technology and visualization.

MOVIDRIVE® modular is the modular application inverter for all types of applications, ranging from open-loop speed control to servo drives with kinematic model.

MOVIDRIVE® modular consists of:

- Supply and regenerative modules.
- Single-axis and double-axis modules.
- Capacitor and buffer modules.
- 24 V switched-mode power supply module.
- Assembly modules for integrating MOVI-C® CONTROLLER advanced into the axis system.
- Accessories for EMC-compliant installation.
- Cards for connecting other I/Os or an additional encoder.
- Cards for functional safety in functionally different versions.
- Accessories for connecting and controlling of motors and brakes, as well as prefabricated motor and encoder cables.

MOVIDRIVE® modular can be supplemented by connecting MOVIDRIVE® system single-axis units. These possess comparable functionalities as axis modules, but have their own line connection.

Especially in the upper power range up to 588 A/315 kW, MOVIDRIVE® system supplements the modular application inverter. For additional information, refer to the MOVIDRIVE® system product manual.

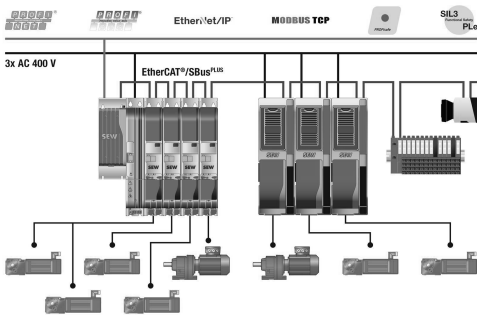
The key features of MOVIDRIVE® modular and MOVIDRIVE® system are:

- A maximum of 15 axis modules at a power supply module, a maximum of 30 drives for double-axis modules.
- Control mode:
 - U/f: for simple applications with asynchronous motors.
 - VFC^{PLUS}: for precise control of asynchronous motors.
 - CFC: for asynchronous and synchronous servomotors.
 - ELSM®: for synchronous motors without encoders.
- Multi-encoder input in basic unit.
- Speed control, torque control, position control.
- Expansion slots for I/O, multi-encoder, functional safety.
- Very compact device size, reduced space requirements in the control cabinet.

MOVIDRIVE® modular and system are intended for operation at the MOVI-C® CONTROLLER, the controller from SEW-EURODRIVE.

They offer a powerful clock-synchronous connection via the integrated EtherCAT®/SBus^{PLUS} communication interface. Other EtherCAT® clients from SEW-EURODRIVE or other manufacturers can be controlled and diagnosed by the MOVI-C® CONTROLLER.

- Freely programmable sequence control in accordance 6with IEC 6-1131-3 for automating drive and logic tasks.
- Central data storage for all MOVI-C® inverters from SEW-EURODRIVE at the EtherCAT®/SBus^{PLUS}.
- Plug-and-play unit replacement through automatic data recovery.
- Central setpoint input for clock-synchronous drives and for auxiliary drives.
- Motion functions: Speed control, torque specification, position specification, phase-synchronous operation, cams, application modules, kinematic models.
- EtherCAT®/SBus^{PLUS} master for SEW-EURODRIVE components and for third-party components.
- Fieldbus device connection to higher-level control systems.
- Diagnostics and visualization of the automation system.



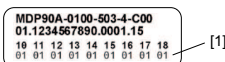
The new engineering software MOVISUITE® is the central module of the MOVI-C® modular automation system. MOVISUITE® allows for intuitive operation with modern operating concepts.

- Network scan.
- Unit startup and parameterization.
- Data storage and data management.
- Scope and diagnostics.
- Programming environment for the MOVI-C® CONTROLLER.
- Programming environment for functional safety.
- Parameterization and diagnostics environment for application modules.

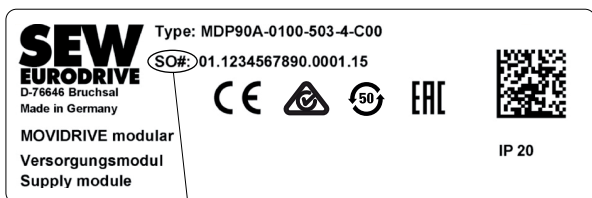
1.2 Nameplates of MOVIDRIVE® modular

1.2.1 Power supply module

System nameplate



[1]



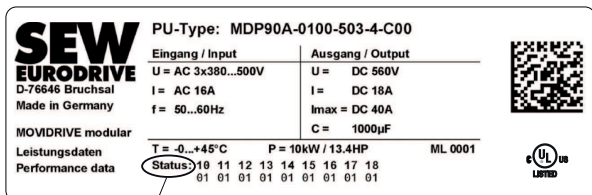
[2]

9007214313636491

[1] Device status

[2] Serial number

Performance data nameplate



[1]

9007214313645451

[1] Device status

1.2.2 Single-axis module

System nameplate

MDA90A-0240-503-X-S00/CES11A/CID21A
01.1234567890.0001.15
10 11 12 13 14 15 16 17 18
01 01 01 01 01 01 01 01 01

[1]

SEW EURODRIVE
D-76646 Bruchsal
Made in Germany
MOVIDRIVE modular
Einachsmodul
Single axis module

Type: MDA90A-0240-503-X-S00/CES11A/CID21A
SO#: 01.1234567890.0001.15

CE

50

EAC

IP 20

[2]

9007214313687563

[1] Device status

[2] Serial number

Performance data nameplate

SEW EURODRIVE
D-76646 Bruchsal
Made in Germany
MOVIDRIVE modular
Leistungsdaten
Performance data

PU-Type: MDA90A-0240-503-X-S00

Eingang / Input	Ausgang / Output
U = DC 560V	U = 3x 0V...U Netz
I = DC 24A	I = AC 24A
	I _{max} = AC 60A
	f = 0...599Hz
	P(ASM) = 11.0kW / 15.0HP

T = 0...+45°C S = 17.0kVA ML 0001

Status: 10 11 12 13 14 15 16 17 18
01 01 01 01 01 01 01 01 01

[1]

UL LISTED

9007214313691915

[1] Device status

1.2.3 Double-axis module

System nameplate

MDD90A-0020-503-X-S00
01.1234567890.0001.15
10 11 12 13 14 15 16 17 18
01 01 01 01 01 01 01 01 01

[1]


SEW
EURODRIVE
D-76646 Bruchsal
Made in Germany


MOVIDRIVE modular
Doppelachsmodul
Double axis module

Type: MDD90A-0020-503-X-S00


SO# 01.1234567890.0001.15

CE





EAC



IP 20

[2]

9007214313696523

- [1] Device status
- [2] Serial number

Performance data nameplate

SEW
EURODRIVE
D-76646 Bruchsal
Made in Germany

MOVIDRIVE modular

Leistungsdaten
Performance data

PU-Type: MDD90A-0020-503-X-S00


Eingang / Input	Ausgang / Output
U = DC 560V	U = 2x(3x 0V...U Netz)
I = DC 4A	I = 2x(AC 2A)
	I _{max} = 2x(AC 5A)
	f = 2x(0...599Hz)
	P(ASM) = 2x(0.55kW / 0.74HP)


T = 0...+45°C

S = 2x(1.4kVA)

ML 0001

Status 10 11 12 13 14 15 16 17 18
01 01 01 01 01 01 01 01 01





[1]

9007214314814475

- [1] Device status

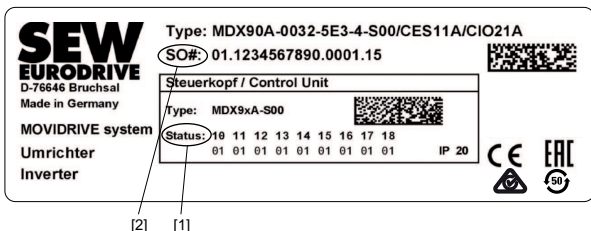
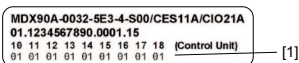
1.3 Type code of MOVIDRIVE® modular

The following type code applies to MOVIDRIVE® modular.

Example: MDA90A-0080-503-X-S00		
Product name	MD	• MD = MOVIDRIVE®
Device type	A	<ul style="list-style-type: none"> • A = Single-axis module • D = Double-axis module • P = Power supply module with brake chopper • M = Master module UHX45A/MDM90A
Series	90	• 90 = Standard design
Version	A	• A = Version status A
Performance class	00 80	<ul style="list-style-type: none"> • MDA: Nominal output current – e.g. 0080 = 8 A • MDD: Nominal output current – e.g. 0020 = 2 × 2 A • MDP: Nominal power – e.g. 0100 = 10 kW
Connection voltage	5	• 5 = AC 380 – 500 V
EMC variant of power section	0	• 0 = Interference suppression integrated
Number of phases	3	• 3 = 3-phase connection type
Operating mode	X	<ul style="list-style-type: none"> • 4 = 4Q operation (with brake chopper) • X = Not relevant
Variants	0	<ul style="list-style-type: none"> • 0 = Not relevant • S = Control MOVI-C® CONTROLLER • C = Power supply module with integrated braking resistor and capacitor • E = Inverter with CiA402 drive profile
Designs	00	<ul style="list-style-type: none"> • 00 = Standard design • 01 = Axis module MDA90A-0640-.. in size 5
Options		<ul style="list-style-type: none"> • /X = MOVIDRIVE® modular without card slots <p>The following list serves as an example:</p> <ul style="list-style-type: none"> • /CES11A = Multi-encoder card • /CID21A, /CIO21A = I/O expansion card • /CS..A = Safety card

1.4 Nameplate of MOVIDRIVE® system

1.4.1 System nameplate

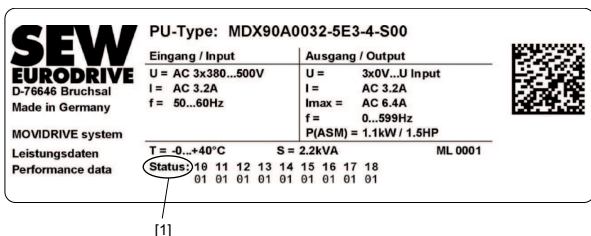


9007214313201675

[1] Device status

[2] Serial number

1.4.2 Performance data nameplate



15058465035

[1] Device status

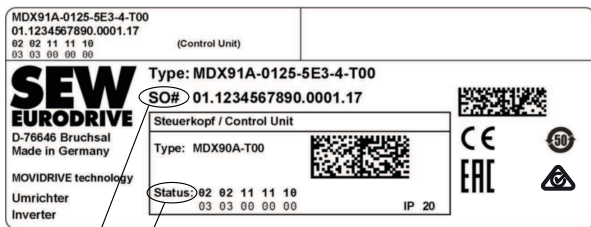
1.5 Type code of MOVIDRIVE® system

The following type code applies to MOVIDRIVE® system.

Example: MDX90A-0125-5E3-X-S00		
Product name	MD	MOVIDRIVE®
Device type	X	• X = Single-axis inverter
Series	90	• 90 = Without DC 24 V switched-mode power supply • 91 = With DC 24 V switched-mode power supply
Version	A	• A = Version status of the device series
Performance class	0125	• 0125 = nominal output current – e.g. 0125 = 12.5 A
Connection voltage	5	• 2 = AC 200 – 240 V • 5 = AC 380 – 500 V
EMC variant of power section	E	• 0 = Basic interference suppression integrated • E = EMC filter limit value category C2 acc. to EN 61800-3
Number of phases	3	• 3 = 3-phase connection type
Operating mode	X	• 4 = 4-quadrant operation • X = Not relevant
Variants	S	• 0 = not relevant • S = MOVIDRIVE® system: Control via MOVI-C® CONTROLLER • T = MOVIDRIVE® technology: Control via field-bus • E = Inverter with CiA402 drive profile
Designs	00	• 00 = Standard variant
Options		The following list serves as an example: • /CES11A = Multi-encoder card • /CID21A, /CIO21A = Input/output cards • /CS..A = Safety card MOVISAFE® CS..A

1.6 Nameplate of MOVIDRIVE® technology

1.6.1 System nameplate

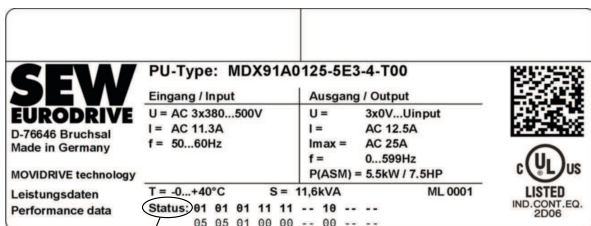


9007220804983691

[1] Serial number

[2] Device status

1.6.2 Performance data nameplate



9007220804986123

[1] Device status

1.7 Type code of MOVIDRIVE® technology

The following type code applies to MOVIDRIVE® technology.

Example: MDX90A-0125-5E3-X-T00		
Product name	MD	MOVIDRIVE®
Device type	X	• X = Single-axis inverter
Series	90	• 90 = Without DC 24 V switched-mode power supply • 91 = With DC 24 V switched-mode power supply
Version	A	• A = Version status of the device series
Performance class	0125	• 0125 = nominal output current – e.g. 0125 = 12.5 A
Connection voltage	5	• 2 = AC 200 – 230 V • 5 = AC 380 – 500 V
EMC variant of power section	E	• 0 = Basic interference suppression integrated • E = EMC filter limit value category C2 acc. to EN 61800-3
Number of phases	3	• 3 = 3-phase connection type
Operating mode	X	• 4 = 4-quadrant operation • X = Not relevant
Variants	T	• 0 = not relevant • S = MOVIDRIVE® system: Control via MOVI-C® CONTROLLER • T = MOVIDRIVE® technology: Control via field-bus • E = Inverter with CiA402 drive profile
Designs	00	• 00 = Standard variant
Options		The following list serves as an example: • /CES11A = Multi-encoder card • /CID21A, /CIO21A = Input/output cards • /CFE21A = EtherNet/IP™ and Modbus TCP • /CFN21A = PROFINET • /CFP21A = PROFIBUS

1.8 MOVI-C® CONTROLLER standard UHX25A

The MOVI-C® CONTROLLER in the performance class "standard" is a motion controller for demanding automation tasks. The real-time operating system guarantees very short response times as well as a high-performance connection of system buses from SEW-EURODRIVE and standard fieldbuses.

The MOVI-C® CONTROLLER is suitable for automating machines and cells for up to 2 interpolating axes and 6 auxiliary axes depending on the size of the application program. It can be used as a module controller for complex motion functions such as electronic cams and robotics.

1.9 MOVI-C® CONTROLLER advanced UHX45A

The MOVI-C® CONTROLLER in the performance class "advanced" is a motion controller for demanding automation tasks. The real-time operating system guarantees very short response times as well as a high-performance connection of system buses from SEW-EURODRIVE and standard fieldbuses.

The MOVI-C® CONTROLLER is suitable for automating machines and cells for up to 8 interpolating axes and 8 auxiliary axes depending on the size of the application program. It can be used as a module controller for complex motion functions such as electronic cams and robotics.

1.10 MOVI-C® CONTROLLER power/power eco UHX85A/UHX84A

1.10.1 Freely programmable MOVI-C® CONTROLLER

The MOVI-C® CONTROLLER can be programmed freely by using OM-H85A type CFast memory cards. It allows drive solutions, logic processes and sequence controls to be automated simply and efficiently using IEC 61131-3 compliant programming languages.

- The freely programmable MOVI-C® CONTROLLER is a **universal** solution because it is able to control the entire portfolio of SEW-EURODRIVE inverters and offers a simple upgrade to a more powerful controller due to universal execution of the programs.
- The freely programmable MOVI-C® CONTROLLER is **scalable** due to several different hardware platforms (standard, advanced, etc.) and modular software concepts (libraries for numerous applications).
- The freely programmable MOVI-C® CONTROLLER is **powerful** due to extensive technologies (such as electronic cam, synchronous operation) and the control of demanding applications (such as material handling).

Performance class "power eco"

The MOVI-C® CONTROLLER power eco UHX84A is characterized by a higher level of performance and is suitable for automating machines and cells for up to 16 interpolating axes and 16 auxiliary axes.

Performance class "power"

The MOVI-C® CONTROLLER power UHX85A is the high-end motion controller for demanding automation tasks. The real-time operating system guarantees very short response times as well as a high-performance connection of system buses from SEW-EURODRIVE and standard fieldbuses. Demanding visualization solutions can be realized via the Windows® operating system that is running in parallel.

The MOVI-C® CONTROLLER power eco UHX84A is suitable for automating machines and cells for up to 32 interpolating axes and 32 auxiliary axes. It is suited as a module controller for complex motion functions such as electronic cams and robotics, as well as for the complete automation of machines and systems.

2 MOVIDRIVE® B

2.1 Description

This documentation describes the **MOVIDRIVE® MDX60B/61B** drive inverters by SEW-EURODRIVE. The drive inverters of the MOVIDRIVE® B series impress with their proven basic functions and the modular device concept.

Three-phase drives in the power range 0.55 – 315 kW can be flexibly operated in combination with inverter technology. The levels of dynamic performance and control quality that can now be achieved with MOVIDRIVE® for asynchronous AC motors were only possible using servo drives or DC motors in the past. The integrated control functionality and the option to extend the drive using technology and communication options creates drive systems that are designed to be particularly cost-effective with regards to the diversity of applications, project planning, startup and operation.

2.1.1 Product family

The **MOVIDRIVE®** device family includes three series:

- **MOVIDRIVE® MDX60B:** Drive inverter for asynchronous AC motors without encoder feedback. The devices are not option-capable.
- **MOVIDRIVE® MDX61B:** Drive inverter for asynchronous AC motors with or without encoder feedback, or for asynchronous and synchronous servomotors. The devices are option-capable.
- **MOVIDRIVE® MDR60A/61B:** Regenerative power supply; MOVIDRIVE® drive inverters (400/500 V devices) operate in regenerative mode to feed energy back into the supply system.

2.1.2 MOVIDRIVE® MDX61B device family, sizes 0 to 7

The following figure shows the MOVIDRIVE® MDX61B drive inverter, sizes 0 to 7



3193709067

2.1.3 MOVIDRIVE® MDR60A/61B device family, sizes 2 to 7

The following figure shows the MOVIDRIVE® MDR60A/61B regenerative power supply units, sizes 2 to 7



9007200709048587

2.1.4 Unit variants

MOVIDRIVE® MDX60B/61B size 0 – 6 drive inverters are available in two variants, namely the standard design and the technology version. MOVIDRIVE® MDX60B/61B size 7 drive inverters are only available as technology version with coated PCBs (-0T/L).

Standard design

The devices are equipped with integrated IPOS^{PLUS}® positioning and sequence control as standard. MOVIDRIVE® MDX61B can be expanded with the available options.

The standard version is indicated by the "00" digits at the end of the type designation.

Technology version

In addition to the features of the standard design, these devices include the electronic cam and internal synchronous operation technology functions. Furthermore, you can use all the application modules available in the MOVITOOLS® MotionStudio engineering software with the devices in application version.

The technology version is indicated by "0T" following the type designation.

Variants with coated printed circuit boards








The devices are designed for use in harsh environments. The coating of the printed circuit boards increases their resistivity against environmental influences.

The design with coated PCBs is indicated by "L" at the end of the type designation.

2.2 Nameplates of MOVIDRIVE® MDX60B/61B

2.2.1 System nameplate size 0

The **system nameplate** for MDX60B/61B size 0 is attached to the side of the device.

Type: MDX61B0011-5A3-4-00			
SO#: 01.1234567890.0001.14			
			
SEW EURODRIVE D-76646 Bruchsal Made in Germany MOVIDRIVE B Umrichter Inverter	Type: MDX61B0011-5A3-4-00/DFP21B SO#: 01.1234567890.0001.14 P#: 08275661		    LISTED IND. CONT. EQ. 2D06 
	Eingang / Input	Ausgang / Output	
	U = 3x380...500V AC	U = 3x0...Uinput	
	I = 2.8A AC	I = 3.1A AC	
	f = 50...60Hz	f = 0...599Hz	
	T = 0...+50°C	P = 1.1kW / 1.5HP IP 20	
Status: 12 10 11 -- 12 12 16 -- --		ML 0001	
			

27021599563947147

2.2.2 System nameplate for sizes 1 – 7

The **system nameplate** is attached to MDX61B.. as follows:

- On the side of the device in size 1 – 6
- On the upper front cover of size 7

Type: MDX61B0040-5A3-4-00			
SO#: 01.1234567890.0001.14			
			
SEW EURODRIVE D-76646 Bruchsal Made in Germany MOVIDRIVE B Umrichter Inverter	Type: MDX61B0040-5A3-4-00/DFP21B SO#: 01.1234567890.0001.14 P# 08279608		    LISTED IND. CONT. EQ. 2D06 
	Steuerkopf / Control Unit		
			
	Type: MDX61B-00		
	P#: 08243492	1234567 IP 20	
	Status: 10 11 12 13 14 15 16 17 18 19	ML 0001	
			

18014400309212299







2.3 Type designation

Example: MDX61B0011-5A3-4-00		
Product name	M DX	<ul style="list-style-type: none"> MDX = MOVIDRIVE®
Device type	60	<ul style="list-style-type: none"> 60 = No options can be installed 61 = Options can be installed
Version	B	<ul style="list-style-type: none"> B = Version status B
Recommended motor power	00 11	<ul style="list-style-type: none"> 0011 = 1.1 kW
Connection voltage	5	<ul style="list-style-type: none"> 2 = AC 200 – 230 V 5 = AC 380 – 500 V
Radio interference suppression	A	<ul style="list-style-type: none"> 0 = No radio interference suppression A = Radio interference suppression C2 B = Radio interference suppression C1
Number of phases	3	<ul style="list-style-type: none"> 1 = 1-Phase 3 = 3-Phase
Quadrants	4	<ul style="list-style-type: none"> 4 = 4-Quadrant operation
Designs	00	<ul style="list-style-type: none"> 00 = Standard 0T = Technology XX = Special unit XX/L = Coated PCBs

2.4 MOVIDRIVE MDR60B/61B type designation

2.4.1 Example: Nameplate sizes 2 to 4

With MDR60A sizes 2 to 4, the nameplate is located on the front of the device.

Typ MDR60A0370-503-00		SACH-NR ET 8144311	
Sach.Nr. 8266581 Serien Nr. 0006202			
			
SEW EURODRIVE D-76646 Bruchsal Netzrückspeisung MOVIDRIVE Made in Germany	Typ MDR60A0370-503-00		   LISTED IND.CONT.EQ. 2D06  
	Sach.Nr. 8266581	Serien Nr. 0006202	
	Eingang / Input	Ausgang / Output	
	U = 3*380...500V +/-10%	U = 560...780V DC	
	f = 50/60Hz	I = 70A DC	
I = 66A AC (400V)	P = 51kVa		
T = 0...45°C	IP20		

9007201131741707

2.4.2 Type designation

Example: MDR60A0370-5A3-00		
Product name	MDR	• MDR = MOVIDRIVE® regenerative power supply unit
Device type	60	• 60 = Type designation up to size 6 • 61 = Type designation for size 7
Version	A	• A = Version status up to size 6 • B = Version status for size 7
Recommended inverter	0370	• 0370 = 37 kW
Connection voltage	5	• 2 = AC 200 – 230 V • 5 = AC 380 – 500 V
Radio interference suppression	A	• 0 = No radio interference suppression
Number of phases	3	• 3 = 3-Phase
Quadrants	4	• 4 = 4-Quadrant operation
Designs	00	• 00 = Standard • 00/L = Coated PCBs

3 MOVIAXIS®

3.1 Description

MOVIAXIS® multi-axis servo inverters have been designed for compact machine and plant automation systems at the highest stage. Productivity and intelligence are combined in an ideal way, allowing for a wide range of application.

3.2 Structure of the nameplate

The nameplate is divided into up to three parts depending on the module.

- Part "I" of the nameplate indicates the type designation, production number and status.
- Part "II" of the nameplate indicates the factory-installed options and the version status.
- Part "III" of the nameplate (system nameplate) contains the technical data of the module.

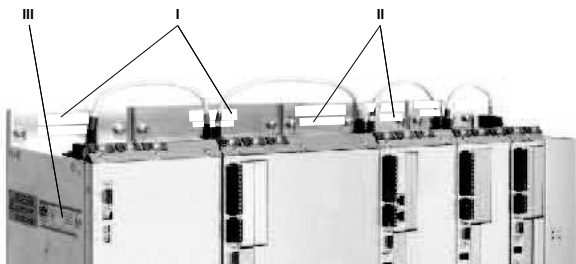
The **system nameplate** is located on the side of the unit for the power supply module and axis module.

The nameplate contains a description of the version and the scope of supply of the multi-axis servo inverter at the time of delivery.

There may be deviations if:

- Option cards are installed or removed at a later time, for example
- The unit firmware is updated

Location of the nameplate.

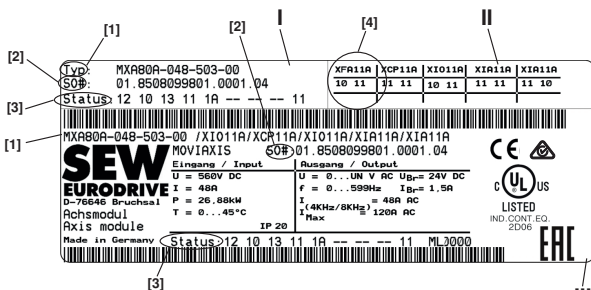


1402316683

- I Part "I" of the nameplate
- II Part "II" of the nameplate
- III Part "III" of the nameplate (system nameplate)

3.3 Axis module nameplate

The following figure shows the nameplate of the axis module:

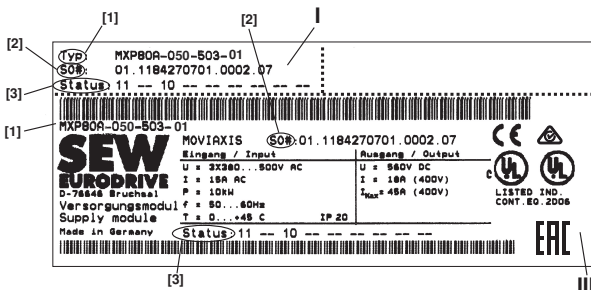


27021599166542091

- I Part "I" of the nameplate: Located on the upper fastening plate of the module
- II Part "II" of the nameplate: Located on the upper fastening plate of the module
- III Part "III" of the nameplate: Located on the side of the module housing
- [1] Type designation
- [2] Production number
- [3] Status
- [4] Communication slots, firmware status

3.4 Nameplate of the power supply module

The following figure shows the nameplate of the power supply module:



18014399911932555

- I Part "I" of the nameplate: Located on the upper fastening plate of the module
- III Part "III" of the nameplate: Located on the side of the module housing
- [1] Type designation
- [2] Production number
- [3] Status

3.5 Type designation for MOVIAXIS® basic devices

Example: MXA80A--004-503-00		
Product name	MX	• MX = MOVIAXIS®

Device type	A	<ul style="list-style-type: none"> • A = Axis module • B = Buffer module • C = Capacitor module • M = Master module • P = Master module with brake chopper • R = Power supply module with supply and regenerative power supply • S = 24 V switched-mode power supply module • Z = DC link discharge module
Series	80	<ul style="list-style-type: none"> • 80 = Standard design • 80 = Sinusoidal regenerative power supply • 81 = Design with one safety relay in the axis module • 81 = Compact power supply module (integrated BW and capacitor) • 81 = Block-shaped regenerative power supply unit MXR • 82 = Design with two safety relays in the axis module
Version	A	<ul style="list-style-type: none"> • A = Version status A
Performance class	004	<ul style="list-style-type: none"> • 004 = For axis modules the nominal current, such as 004 = 4 A • 050 = For DC link discharge modules the energy quantity that can be dissipated, such as 050 = 5000 Ws • 010 = For power supply modules the nominal power, such as 010 = 10 kW • 050 = For capacitor, buffer and damping modules the capacity, such as 050 = 5000 µF • 060 = Power for 24 V switched-mode power supply modules, such as 060 = 600 W
Connection voltage	50	<ul style="list-style-type: none"> • 50 = AC 380 – 500 V
Number of phases	3	<ul style="list-style-type: none"> • 3 = 3-phase connection type
Designs		<ul style="list-style-type: none"> • 00 = Standard design • 01 - 99 = Special design

Type designation for the axis module:

MX- = Axis module with 4 A nominal current
A80A-004-503-00

MX- = Axis module with 4 A nominal current and integrated SBus^{plus} system bus
A80A-004-503-0E

Type designation for the buffer module component

MXB80A-050-503-00 = Buffer module with a capacity of 5000 µF

Type designation for the capacitor module component

MX- = Capacitor module with a capacity of 5000 µF
C80A-050-503-00

Type designation for master module with fieldbus gateway component:

MXM80A-000-000-00 = Master module with PROFIBUS/DeviceNet
UFF41B

MXM80A-000-000-00 = Master module with EtherNet/IP™ / PROFINET
UFR41B Modbus TCP

Type designation for master module with controller component:

MXM80A-000-000-00 = Master module with PROFIBUS/DeviceNet
DHF41B/OM-H41B

MXM80A-000-000-00 = Master module with EtherNet/IP™ / PROFINET
DHR41B/OM-H41B Modbus TCP

Designs: T0 – T25

Type designation of power supply module:

MX- = 10 kW compact power supply module with integrated C and BW
P81A-010-503-00

MX- = 10 kW power supply module
P80A-010-503-00

MXR80A-075-503-00 = 50/75 kW supply and regenerative power supply module, sinusoidal

MXR81A-075-503-00 = 50/75 kW supply and regenerative power supply module, block-shaped

Type designation for the 24 V switched-mode power supply module component

MX- = 24 V switched-mode power supply module
S80A-060-503-00

Type designation DC link discharge module component:

MXZ80A-050-503-00 = DC link discharge module with a dissipatable energy quantity of 5000 Ws

3.6 Type designation for MOVIAXIS® optional assemblies

Example: XGH11A		
Product name	X	• X = Optional assemblies for MOVIAXIS®
Device type	GH	<ul style="list-style-type: none"> • GH = Multi-encoder card • GS = PROFIBUS DP V1 fieldbus interface • FP = K-Net fieldbus interface • FA = EtherCAT® fieldbus interface • FE = EtherCAT®-compatible system bus • SE = EtherCAT®-compatible system bus • IO = Input/output card • IA = Input/output card
Series	11	• 11 = 11 series
Version	A	• A = Version status A

4 MOVITRAC® B

4.1 MOVITRAC® B – compact, versatile and universal

The percentage of adjustable-speed three-phase drives with inverter technology is constantly increasing. In addition to machine-conserving drive technology, these units offer all options to optimize system and machine concepts in correspondence with the process sequences. The expanse of these different fields of application shows that it is difficult to meet the technological and economic requirements with one universal inverter class.

The drive electronics in asynchronous AC motors are separated into standard inverters, for simple applications, e.g. materials handling, and application inverters, for more complex technological applications, e.g. positioning and handling applications. This differentiation of the units facilitates scaling to different applications while staying with a certain budget.

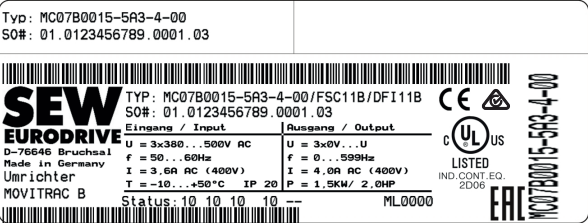
Operation, parameter setting, diagnostics and integration in automation concepts must offer unit-comprehensive and therefore universal engineering and communication support. Engineering tools for project planning, parameter setting and startup as well as the availability of communication interfaces (fieldbuses and Industrial Ethernet) offer users a solution-oriented and unit-independent user interface.

4.2 Type designation

Example: MC07B0022-2B1-4-00/T		
Product name	MC	• MC = MOVITRAC®
Device type	07	• Series 07
Version	B	• B = Version status B
Recommended motor power	00 22	• 0022 = 2.2 kW
Connection voltage	2	• 2 = AC 200 – 240 V • 5 = AC 380 – 500 V
Radio interference suppression	B	• 0 = No radio interference suppression • A = Radio interference suppression C2 • B = Radio interference suppression C1
Number of phases	1	• 1 = 1-Phase • 3 = 3-Phase
Quadrants	4	• 4 = 4-Quadrant operation
Designs	00	• 00 = Standard • S0 = Safe stop
Options	/T	• /T = Technology unit • /L = Partially coated PCBs • /S = SBus address 1

4.3 Nameplate

The following figure shows a nameplate:



Input	U	Nominal line voltage	T	Ambient temperature
	I	Nominal line current	P _{motor}	Recommended motor power
		100% operation		100% operation
	f	Nominal line frequency		
Output	U	Output voltage		
		100% operation		
	I	Nominal output current		
		100% operation		
	f	Output frequency		

The unit status is indicated above the lower barcode. It documents the hardware and software states of the unit.

5 MOVITRAC® LTE-B+

5.1 Technology

The MOVITRAC® LTE-B+ device family is the entry level product series of the powerful frequency inverter portfolio from SEW-EURODRIVE. The devices are characterized by a simple installation and startup philosophy, together with a powerful range of functions for this class.

The power spectrum ranges from 0.37 kW up to a maximum rating of 11 kW for the IP20 design.

Inverters are available with an IP66 degree of protection for use in environments that are heavily subjected to dust and splash water. These inverters are available with and without integrated switches.

All variants feature an integrated keypad as standard, which, in combination with the removable "Helpcard", enables simple and intuitive startup and operating procedures.

In addition to a simple V/f voltage control system, all LTE-B+ devices are also equipped with a field-oriented open-loop vector control unit, which enables both the optimized operation of AC asynchronous motors, as well as the additional operation of other motor types, such as the LSPM (Line Start Permanent Magnet Motor) IE4 drive from SEW-EURODRIVE:

Extensive diagnostics methods are available to the user to guarantee smooth operation of the system and to ensure minimal downtime. In addition to 40 diagnostics parameters, MOVITRAC® LTE-B+ also offers a powerful scope function, which can be operated via the LT Shell software.

The extensive functionality is rounded off by the standard bus systems, namely Modbus RTU, CANopen, and SEW-EURODRIVE SBus, which enable the MOVITRAC® LTE-B+ to be easily integrated into the field-bus network on the system side.

5.2 Type designation

Example: MCLTE-1-B 0015-201-1-00		
Product name	MCLTE	MOVITRAC® LTE-B
Version	B	Version status of the device series
Motor	1	Only single-phase motors
Recommended motor power	0015	0015 = 1.5 kW
Connection voltage	2	<ul style="list-style-type: none"> • 1 = 115 V • 2 = 200 – 240 V • 5 = 380 – 480 V
Interference suppression on the input	0	<ul style="list-style-type: none"> • 0 = Class 0 • A = C2 (class A) • B = C1 (class B)
Connection type	1	<ul style="list-style-type: none"> • 1 = 1-Phase • 3 = 3-Phase
Quadrants	1	<ul style="list-style-type: none"> • 1 = 1-Quadrant operation without brake chopper • 4 = 4-Quadrant operation with brake chopper
Design	00	<ul style="list-style-type: none"> • 00 = Standard IP20 housing • 30 = IP66/NEMA-4X housing without switch • 40 = IP66/NEMA-4X housing with switch
Country-specific variant	(60 Hz)	60 Hz = 60 Hz design

6 MOVITRAC® LTP-B

6.1 Markets and applications

Frequency inverters of the MOVITRAC® LTP-B series are optimally matched to meet the requirements of indoor applications outside a control cabinet.

They have been designed and developed for controlling the speed of asynchronous and synchronous motors without encoder and are particularly economical in conveyor applications, hoists, as well as in fans and pumps.

For applications in dirty or moist environments indoors, MOVITRAC® LTP-B is also available in degree of protection IP55 in the power range from 0.75 kW to 160 kW. Optionally, it is available up to 11 kW with a control cabinet housing in degree of protection IP20.

6.2 Type designation

Example: MCLTP-B 0015-2B1-4-00 (60 Hz)		
Product name	MCLT P	MOVITRAC® LTP-B
Version	B	Version status of the device series
Recommended motor power	0015	0015 = 1.5 kW
Connection voltage	2	2 = 200 – 240 V 5 = 380 – 480 V 6 = 500 – 600 V
Interference suppression on the input	B	0 = Class 0 A = Class C2 B = Class C1
Connection type	1	1 = 1-Phase 3 = 3-Phase
Quadrants	4	4 = 4-Quadrant operation
Design	00	00 = Standard IP20 housing 10 = IP66/NEMA-4X housing 10 = IP55/NEMA-12K housing 15 = Devices for operation on IT systems
Country-specific variant	(60 Hz)	60 Hz design

7 Asynchronous AC Motors

7.1 Description of DR.../DRN.. and EDR.../EDRN.. AC motors

7.1.1 Motor

The asynchronous motor consists of a stator with a three-phase winding and a laminated rotor. The rotor slots are usually lined with aluminum and short-circuited at the front ends using a short-circuit ring. Variants with die-cast copper are also available. The nominal speed at line frequency can be defined by the number of poles.

The main advantages can be described as follows:

- Long service life
- Low maintenance (no brush wear)
- Temporary high overload capacity
- Nearly constant speed (no "overspeed" in no-load operation)
- Comparatively low production costs

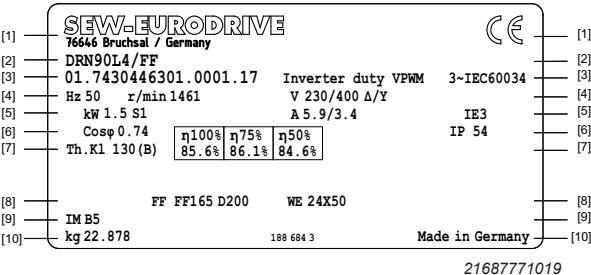
The following image shows a DR.. AC motor:



2998238987

7.2 DRN.. motor nameplate

The following figure shows an example of a nameplate:



Line	Information
[1]	<ul style="list-style-type: none"> • Manufacturer, address • CE marking
[2]	<ul style="list-style-type: none"> • Type designation
[3]	<ul style="list-style-type: none"> • Serial number • Suitability for inverter operation • Number of phases and underlying rating and performance standards (IEC 60034-X and/or equivalent national standard)
[4]	<ul style="list-style-type: none"> • Rated frequency • Rated speed • Nominal voltage
[5]	<ul style="list-style-type: none"> • Rated power, operating mode • Rated current • IE class
[6]	<ul style="list-style-type: none"> • Power factor for AC motors • Degree of protection according to IEC 60034-5
[7]	<ul style="list-style-type: none"> • Thermal class • Rated efficiency for motors included in the scope of the IEC 60034-30-1 standard
[10]	<ul style="list-style-type: none"> • Flange • Shaft end
[11]	<ul style="list-style-type: none"> • Mounting position
[12]	<ul style="list-style-type: none"> • Weight • Part number nameplate • Country of manufacture

7.3 DR.., DRN.. AC brakemotor type designation

The following diagram shows a type designation example:

DRN132M4/BE11/HR/FI/TF	
DR	Product family
N	Code for product line identification
132M	Size
4	Number of poles
/BE11	Brake
/HR	Manual brake release
/FI	Output option
/TF	Thermal motor protection

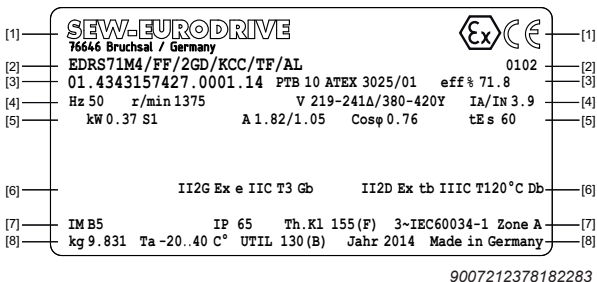
7.4 Designation of the motors

Designation	
DRS..	Standard motor, Standard efficiency IE1
DR2S..	Standard motor, Standard efficiency IE1 (second generation)
DRE..	Energy-efficient motor, High Efficiency IE2
DRP..	Energy-efficient motor, Premium Efficiency IE3
DRN..	Energy-efficient motor, Premium Efficiency IE3
DRU..	Energy-efficient motor, Super Premium Efficiency IE4
DRL..	Asynchronous servomotor
DRK..	Single-phase operation with running capacitor
DRM..	Torque motor: AC motor for operation at speed $n = 0$
DR..J	Line Start Permanent Magnet motor
63 – 315	Nominal sizes: 63, 71, 80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315
K, S, M, L, MC, LC, ME, MS, MK, H, LS, LM	Lengths
2, 4, 6, 8, 8/2, 8/4, 4/2, 12	Number of poles

7.5 Nameplates of EDR../EDRN.. motors

7.5.1 EDR../EDRN.. motor nameplate

The following figure shows an example of the nameplate of an EDRS motor in design 2GD:





Line	Information
[1]	<ul style="list-style-type: none"> • Manufacturer, address • Explosion protection mark, CE mark <p>The identification on the upper edge of the nameplate are only present when the motor has been certified accordingly or when it includes the relevant components.</p>
[2]	<ul style="list-style-type: none"> • Type designation • Number of the approval authority
[3]	<ul style="list-style-type: none"> • Serial number • EU type examination certificate for line operation • Rated efficiency for motors included in the scope of the IEC 60034-30-1 standard
[4]	<ul style="list-style-type: none"> • Rated frequency • Rated speed • Nominal voltage • Relation between starting current and rated current
[5]	<ul style="list-style-type: none"> • Rated power, operating mode • Rated current • Power factor for AC motors • Heating time

Line	Information
[6]	<ul style="list-style-type: none"> • II = Equipment group II (above ground) 2 = Equipment category 2 G = Areas containing potentially explosive mixtures of gas, steam, fog, and air Ex e = Protection type IIC = Gas group T3 = temperature class (gas) Gb = EPL (Equipment Protection Level) • II = Equipment group II (above ground) 2 = Equipment category 2 D = For areas where dust may create potentially explosive atmospheres Ex tb = protection type IIIC = dust group T120 °C = Surface temperature (dust) Db = EPL (Equipment Protection Level)
[7]	<ul style="list-style-type: none"> • Mounting position • Degree of protection according to IEC/EN 60034-5 • Thermal class • Number of phases and underlying rating and performance standards (IEC/EN 60034X and/or equivalent national standard) • Zone A = Section A from IEC/EN 60034-1
[8]	<ul style="list-style-type: none"> • Motor weight • Ambient temperature • Thermal capacity utilization of the motor • Year of manufacture • Country of manufacture

7.5.2 Additional nameplate for EDR../EDRN.. motors in frequency inverter operation

The following figure shows an example of the additional nameplate for an EDRS motor in design 2GD for frequency inverter operation (short additional FI nameplate):

SEW-EURODRIVE 76646 Bruchsal / Germany EDRS71M4/FF/2GD/KCC/TF/AL 01.4343157427.0001.14 PTB 11 ATEX 3002/02X Usys 400 V									
 VFC I_{max} 2.75 A					 VFC I_{max} 1.57 A				
Hz	r/min	V	A	Nm	Hz	r/min	V	A	Nm
5	90	35	1.40	1.6	5	90	60	0.80	1.6
10	200	54	1.40	1.8	10	200	93	0.80	1.8
25	590	115	1.80	2.5	25	590	200	1.04	2.5
75	2110	346	1.80	2.6	50	1370	400	1.01	2.5
					87	2110	400	1.20	1.4

9007212378184715

Line	Information
[1]	System voltage – line voltage of frequency inverter
[2]	(Voltage Mode Flux Control) Voltage controlled control mode of the frequency inverter
[3]	EU type examination certificate for frequency inverter operation
[4]	maximum permitted peak current, e.g. when accelerating with VFC control mode
[A]	The additional FI nameplate lists the thermal limit characteristic curve of the motor (item A – E) considering voltage and frequency, see chapter Limit characteristic curves of EDRS and EDRE motors in inverter operation.
[B]	
[C]	
[D]	The minimum and maximum frequency may deviate depending on the option.
[E]	

7.6 Type designation of EDR.., EDNR.. motors

The following diagram shows the structure of the motor type designation:

EDRS71S4 /BE2 /FI /3GD /KCC /TF /ES7S	
E	Explosion-proof design
DR	Product family
S	Code for product line identification
71S	Size and length
4	Number of poles
/BE2	Brake
/FI	Output options
/3GD	Explosion protection design
/KCC	Connection options
/TF	Thermal motor protection
/ES7S	Encoder

7.6.1 Designation of the motors

Designation	
EDRS..	Explosion-proof AC motor, Standard Efficiency IE1
EDRE..	Explosion-proof AC motor, High Efficiency IE2
EDRN..	Explosion-proof AC motor, Premium Efficiency IE3
71 to 315	Sizes: 71, 80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315
S, M, L, LC, ME, H, LS, LM, K	Lengths
4	Number of poles

7.7 Designs and options

7.7.1 Output variants

Designation	Description
/FI	IEC foot-mounted motor
/F.A /F.B	Universal foot-mounted motor
/FG	7series integral motor, as stand-alone motor
/FF	IEC flange-mounted motor with bore
/FT	IEC flange-mounted motor with threads
/FL	General flange-mounted motor (other than IEC)
/FM	7-series integral motor with IEC feet
/FE	IEC flange-mounted motor with bore and IEC feet
/FY	IEC flange-mounted motor with threads and IEC feet
/FK	General flange-mounted motor (deviating from IEC) with feet
/FC	C-face flange-mounted motor, dimensions in inch

7.7.2 Mechanical attachments

Designation	Description
/BE.. ¹⁾	Spring-loaded brake with specification of size
/HR	Manual brake release of the brake, re-engaging
/HF	Manual brake release, lockable
/RS	Backstop
/MSW	MOVISWITCH®
/MM03 – MM40	MOVIMOT®
/MO	MOVIMOT® option(s)
/MI	Motor identification module for MOVIMOT®

1) Also available in design for functional safety

7.7.3 Encoder

Designation	Description
/ES7S ¹⁾ /EG7S ¹⁾ /EH7S /EV7S	Add-on speed sensor with sin/cos interface
/ES7R /EG7R /EH7R	Add-on speed sensor with TTL(RS422) interface, U = 9 – 26 V
/EI7C ²⁾ /EI76 / EI72 /EI71	Built-in incremental encoder with HTL interface and 24 / 6 / 2 / 1 period(s)
/EI8R	Built-in incremental encoder with TTL (RS422) interface and 1024 periods
/EI8C	Built-in incremental encoder with HTL interface and 1024 periods
/AS7W ¹⁾ /AG7W ¹⁾	Add-on absolute encoder, RS485 interface (multi-turn) and sin/cos interface
/AS7Y ¹⁾ /AG7Y ¹⁾ / AH7Y	Add-on absolute encoder, SSI interface (multi-turn) and sin/cos interface
/ES7A /EG7A	Mounting adapter for speed sensors

7 Asynchronous AC Motors

Designs and options

Designation	Description
/EV2T /EV2R /EV2S /EV2C	Add-on incremental encoder with solid shaft
/XV.A	Mounting adapter for third-party speed sensors
/XV..	Mounted third-party speed sensors
/XH.A	Mounting adapter for third-party hollow-shaft encoders

1) Also available in design for functional safety

2) Also available in design for functional safety

7.7.4 Temperature sensor / temperature detection

Designation	Description
/TF	Temperature sensor (PTC thermistor or PTC resistor)
/TH	Thermostat (bimetallic switch)
/KY	1 KTY84 – 130 sensor
/PT	1 or 3 PT100 sensor(s)
/PK	PT1000 temperature sensor

7.7.5 Connection alternatives

Designation	Description
/IS	Integrated plug connector
/ISU	Integrated plug connector – Design with only the lower part of the plug connector
/ASE.	HAN 10ES plug connector on terminal box with single locking latch (cage clamp contacts on the motor side)
/ASB.	HAN 10ES plug connector on terminal box with double locking latch (cage clamp contacts on the motor side)
/ACE.	HAN 10E plug connector on terminal box with single locking latch (crimp contacts on the motor side)
/ACB.	HAN 10E plug connector on terminal box with double locking latch (crimp contacts on the motor side)
/AME. /ABE. /ADE. /AKE.	HAN Modular 10B plug connector on terminal box with single locking latch (crimp contacts on the motor side)
/AMB. /ABB. /ADB. /AKB.	HAN Modular 10B plug connector on terminal box with double locking latch (crimp contacts on the motor side)
/KCC	6 or 10-pole terminal strip with cage clamp contacts
/KC1	C1-profile-compliant connection of the electrified monorail drive (VDI guideline 3643), for more compact connection areas.
/IV	Other industrial plug connectors according to customer specifications

7.7.6 Ventilation

Designation	Description
/V	Forced cooling fan

24770132/EN – 12/2017

Designation	Description
/Z	Additional inertia (flywheel fan)
/AL	Metal fan
/U	Non-ventilated (without fan)
/OL	Non-ventilated (closed B-side)
/C	Canopy for the fan guard
/LF	Air filter
/LN	Low-noise fan guard

7.7.7 Bearing

Designation	Description
/NS	Relubrication device
/ERF	Reinforced bearings on A-side with rolling bearing
/NIB	Insulated bearing B-side

7.7.8 Condition monitoring

Designation	Description
/DUB	Mount-on microswitch for monitoring function and wear of the brake (Diagnostic Unit Brake)
/DUE	Eddy-current sensor for function and wear monitoring of the brake (Diagnostic Unit Eddy Current)

7.7.9 Explosion-proof motors

Designation	Description
/2GD	Motors according to 94/9/EC, category 2 (gas / dust)
/3GD	Motors according to 94/9/EC, category 3 (gas / dust)
/3D	Motors according to 94/9/EC, category 3 (dust)
/VE	Forced cooling fan for motors according to 94/9/EC, category 3 (gas / dust)

Explosion-proof motors are dealt with in separate operating instructions.

7.7.10 Other additional features

Designation	Description
/DH	Condensation drain hole
/RI	Reinforced winding insulation
/RI2	Reinforced winding insulation with increased resistance against partial discharge
/2W	2nd shaft end on the motor/brakemotor

7.8 Description of DRL.. asynchronous servomotors

7.8.1 Description

Asynchronous servomotors are the link between the classical asynchronous AC asynchronous motors for supply system and inverter operation and the highly dynamic synchronous servomotors with permanent magnets.



2998238987

7.8.2 Designs of DRL.. motors

DRL.. asynchronous servomotors are a drive package made up from the many options of the modular system for asynchronous motors.

In its basic variant, the drive package always contains

- An encoder, sine signals, and electronic nameplate
- Thermal motor protection
- Dynamics package
- Various connection options
- Winding optimized with respect to speed

Depending on the application and requirements, the following elements can be added:

- Forced cooling fan
- Connection via plug connectors instead of terminals
- Temperature detection
- and other things.

Alternatives can be selected instead of the elements of the basic variant, e.g. an absolute encoder instead of the sine encoder.

8 Synchronous Servomotors

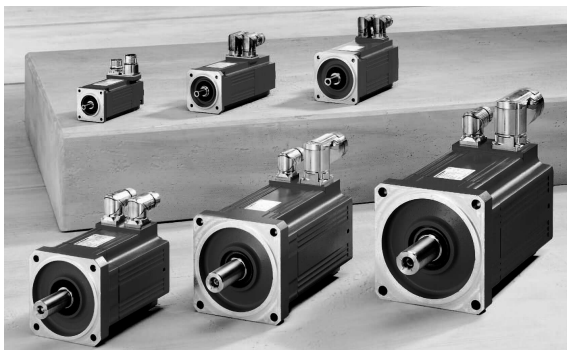
8.1 CMP.. motors

8.1.1 Description of CMP.. motors

The CMP.. servomotor series combines high dynamics, high torques, and precision in a compact design.

Their innovative design with the latest in winding and magnet technology offers a motor system with optimum dynamics and the best control characteristics at the smallest space. The cast stator protects the motor against vibrations and humidity.

CMP.. servomotors can be combined with MOVIAXIS® multi-axis servo inverters and MOVIDRIVE® drive inverters.



2997677835

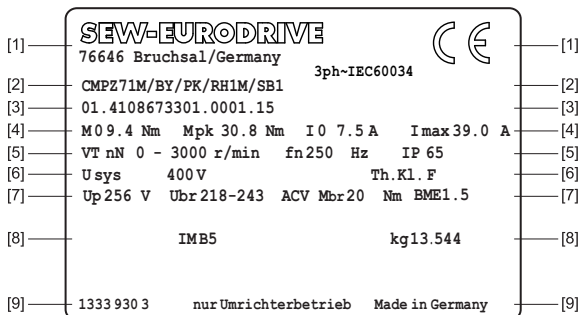
8.1.2 Description of CMPZ.. motors

CMPZ.. synchronous servomotors are equipped with an internal additional flywheel mass. These motors combine high torques and precision in a compact design and provide particularly favorable control characteristics with high external masses. Furthermore, the internal higher moment of inertia allows for a smaller gear ratio.

In addition to the above mentioned features of the CMP.. motors, CMPZ.. motors are optionally available with a powerful working brake with high working capacity and optional manual brake release.

8.1.3 Nameplate of CMP.. motors

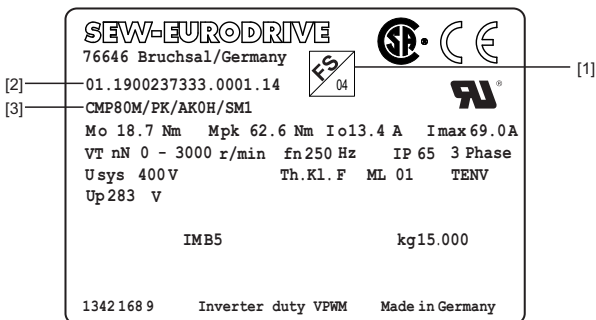
The following figure shows the nameplate of a CMP.. motor:



27021605947857931

The nameplate only contains the FS logo if safety-rated components are used.

The following figure shows a nameplate of a motor with UL and CSA approvals and safety-rated components:



27021605947859851

- [1] FS logo including number
- [2] Motor identification number
- [3] Type designation

8.1.4 Unit designation of the plug connectors

The following diagram shows a type designation:

S M 1 2	
S	S: Connector
M	M: Motor, B: Brakemotor
1	1: Connector size 1 (1.5 – 4 mm ²), B: Connector size 1.5 (6 – 16 mm ²), C: Connector size 3 (16 – 35 mm ²)
2	Cross section 1: 1.5 mm ² , 2: 2.5 mm ² , 4: 4 mm ² , 6: 6 mm ² , 10: 10 mm ² , 16: 16 mm ² , 25: 25 mm ² , 35: 35 mm ²

8.1.5 Sample type designation of a servomotor

The following table shows the example of a type designation:

Example: P6BG52-012/X/H1/99 CSC100S/BK/PK/AK0H/SB1		
Servo gear units	P6BG52	Size
	012	Gear ratio
	X	Special rotational clearance
	H1	Food-grade lubricant
	99	Identification of special measure
Synchronous servomotor	CSC100	Flange-mounted motor size 100
Length	S	Short
Mechanical attachments	/BK	BK holding brake
Standard equipment temperature sensor	/PK	PK temperature sensor
Encoder motor option	/AK0H	Absolute encoder
Plug connector motor option	/SB1	Plug connector brakemotor M23

8.1.6 Designs and options of CMP.. motors

Synchronous servomotors

Designation	
CMP...	Flange motor size 40 / 50 / 63 / 71 / 80 / 100 / 112
CMPZ...	Flange motor size 71 / 80 / 100 with additional inertia/increased mass moment of inertia
S – E	S = Small / M = Medium / L = Long / H = Huge / E = Extra long

Mechanical attachments

Designation	Option
/BP	Holding brake for CMP71 – 100
/BK	Holding brake for CMP40 – 63
/BY	Working brake for CMPZ71 – 100, CMP112 Optionally available as safety-rated brake for CMPZ71 – 100.
/HR	BY manual brake release for CMP..71 – 100, CMP112, re-engaging

Temperature sensor/temperature detection

Designation	Option
/PK	Temperature sensor (PT1000)

Encoders

Designation	Option
/RH1M	Resolver (standard)
/EK0H	Single-turn Hiperface® encoder, cone shaft, for CMP40
/AK0H	Multi-turn Hiperface® encoder, cone shaft, for CMP40– 63, CMP..71 – 100, CMP112, optionally available as safety-rated encoder
/EK1H	Single-turn Hiperface® encoder, cone shaft, high resolution, for CMP50 – 63, CMP..71 – 100, CMP112
/AK1H	Multi-turn HIPERFACE® encoder, cone shaft, high resolution, for CMP50 – 63, CMP..71 – 100, CMP112, optionally available as safety-rated encoder

Connection options

Designation	Option
/SM1	M23 motor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/SMB	M40 motor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/SMC	M58 motor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/SB1	M23 brakemotor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/SBB	M40 brakemotor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/SBC	M58 brakemotor plug connector, socket on motor side only, pluggable motor and encoder cables (standard)
/KK	Terminal box for CMP50, CMP63, CMP..71 – 100, CMP112, clampable motor and encoder cable
/KKS	Terminal box for CMP..71 – 100, CMP112, clampable motor cable and pluggable encoder cable

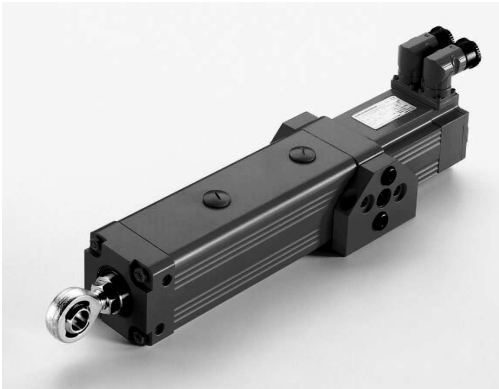
Ventilation

Designation	Option
/VR	Forced cooling fan (from size 50)

8.2 CMS../CMSM.. electric cylinders

8.2.1 Description


Electric cylinders of the CMS../CMSM.. series are equipped with permanent magnet rotors and operate particularly precise, powerful and fast. Combined with drive electronics from SEW-EURODRIVE, they provide economical, energy-efficient drive solutions that ensure a high level of process reliability in system operation and are easy to integrate into existing automation facilities, such as welding systems and robotic systems.




2997873547

8.2.2 CMS.. standard electric cylinders – Nameplate

Each electric cylinder has a nameplate that provides important information. The following figure shows an example of a CMS.. standard electric cylinder nameplate:

[1]	SEW-EURODRIVE	CE	[1]
	76646 Bruchsal/Germany		
[2]	CMSB71L/BP/KY/RH1M/SB1		[2]
[3]	01.12345678.0001.15	3ph~IEC60034	[3]
[4]	M ₀ 13.1 Nm M _{pk} 25.0 I ₀ 9.4 A I _{max} 18.7 A		[4]
[5]	VT F pk 24 kN Th.Kl. 155(F) IP 65 °C -20..40		[5]
[6]	U _{sys} 400 V n _N 3000 r/min f _n 250 Hz		[6]
[7]	U _p 287 V n _{pk} 4500 r/min IM M0		[7]
[8]	U _{br} 21.6-26.4 V M _{br} 14 Nm kg 27.9		[8]
[9]	Spindel KGT P 6 mm/r Hub 200 mm		[9]
[10]	 Mobil SHC 630 / 0.91		[10]
[11]	0594 927 0 nur Umrichterbetrieb Made in Germany		[11]

18014410760880523


Line	Information
[1]	<ul style="list-style-type: none"> • Manufacturer, address • CE marking
[2]	<ul style="list-style-type: none"> • Type designation
[3]	<ul style="list-style-type: none"> • Serial number • Number of phases and underlying rating and performance standards (IEC 60034 X and/or equivalent national standard)
[4]	<ul style="list-style-type: none"> • M₀: Standstill torque • M_{pk}: Dynamic limit torque • I_{max}: Maximum permitted motor current
[5]	<ul style="list-style-type: none"> • VT: Variable torque • F_{pk}: Peak feed force • Th. Cl.: Thermal class • IP: Degree of protection • °C: Permitted ambient temperature
[6]	<ul style="list-style-type: none"> • U_{sys}: System voltage • n_N: Rated speed • f_n: Rated frequency
[7]	<ul style="list-style-type: none"> • U_p: Internal voltage • n_{pk}: Maximum mechanically permitted speed • IM: Mounting position
[8]	<ul style="list-style-type: none"> • U_{br}: Brake voltage • M_{br}: Nominal braking torque • kg: Weight
[9]	<ul style="list-style-type: none"> • Spindle: Spindle • Stroke: Stroke length
[10]	<ul style="list-style-type: none"> • : Lubricant, lubricant quantity

24770132/EN – 12/2017

Line	Information
[11]	<ul style="list-style-type: none"> • Part number nameplate • Suitability for inverter operation • Country of manufacture


8.2.3 Nameplate of CMSM.. modular electric cylinder

CMSM.. modular electric cylinders have a nameplate attached to the modular unit. The nameplate shows the most important characteristics. The following figure shows an example of the nameplate of the modular unit.

[1]	SEW-EURODRIVE			[1]	
	76646 Bruchsal/Germany				
[2]	CMSMB63/ACA			[2]	
[3]	01.12345678.0001.15			[3]	
[4]	Me pk	11.1Nm	°C -20..40	IM M0	[4]
[5]	F pk	10kN	IP 65	kg 6.0	[5]
[6]	ne pk	4500r/min			[6]
[7]					[7]
[8]					[8]
[9]	Spindel KGT	P 6 mm/r		Hub 100 mm	[9]
[10]		Mobil SHC 630/0.241			[10]
[11]	1652 432 2			Made in Germany	[11]

27021610015623435

27021610015623435

Line	Information
[1]	• Manufacturer, address
[2]	• Type designation
[3]	• Serial number
[4]	<ul style="list-style-type: none"> • M_{epk}: Max. permitted input torque • °C: Permitted ambient temperature • IM: Mounting position
[5]	<ul style="list-style-type: none"> • F_{pk}: Peak feed force • IP: Degree of protection • kg: Weight
[6]	• n_{epk} : Maximum permitted input speed
[9]	<ul style="list-style-type: none"> • Spindle: Spindle • Stroke: Stroke length
[10]	•  : Lubricant, lubricant quantity
[11]	<ul style="list-style-type: none"> • Part number nameplate • Country of manufacture

If the modular unit is combined with a CMP motor, an additional nameplate that shows the motor characteristic data is attached to the motor.

8.2.4 Type designation CMSM.. modular electric cylinders

The following diagram shows an example of a type designation for a CMSM.. modular electric cylinder:

Example: CMSMB63/ACA		
Product	CMSM	CMSM.. modular electric cylinders
Generation	B	With oil bath lubrication
Size	63	
Mounting position	/ACA	Motor with key (CMP)
	–	Stroke length: <ul style="list-style-type: none"> • CMSMB50: 70, 100, 150, 200, 300, 400, 600 • CMSMB63: 60, 100, 160, 180, 200, 400, 600 • CMSMB71: 100, 160, 200, 400, 600, 800, 1000, 1200

8.2.5 Designs and options for the CMS.. electric cylinders

Electric cylinders

Designation	Description
CMS..	Standard electric cylinders size 50/63/71
CMSM..	Electric cylinder, modular
B	Feature of the generation: with oil bath lubrication If the designation does not include a B: with grease lubrication
S – L	S = Small M = Medium L = Long

Adapter

Designation	Description
/ACA	For mounting on motor with key (CMP)
/ACH	For mounting on motor smooth shaft (CMP)
/AP	Design with parallel axes

Mechanical attachments

Designation	Description
/BP	Holding brake for CMSB71
/BK	Holding brake for CMSB..50 – 63
/BS	Holding brake for CMS71

Temperature sensor / temperature detection

Designation	Description
/KY	Temperature sensor for CMS..50 – 71 (standard)
/TF	Temperature sensor for CMS71 (standard)
/TH	Thermostat (bimetallic switch) for CMS71

Designation	Description
/PK	Temperature sensor PT1000 for CMS..50 – 71

Encoders

Designation	Description
/RH1M	Resolver (standard)
/AK0H	Multi-turn HIPERFACE® encoder, cone shaft, for CMSB50/63/71, CMS71
/EK1H	Single-turn HIPERFACE® encoder, cone shaft, high resolution, for CMSB50/63/71, CMS71
/AK1H	Multi-turn HIPERFACE® encoder, cone shaft, high resolution, for CMSB50/63/71, CMS71

Connection options

Designation	Description
/SM1	M23 motor plug connector, socket on the motor side only, pluggable motor and encoder cables (standard)
/SB1	M23 brakemotor plug connector, socket on the motor side only, pluggable motor and encoder cables (standard)
/KK	Terminal box for CMSM.. modular electric cylinder

Cooling

Designation	Description
/VR	Forced cooling fan
/LC	Water cooling

Generation

Designation	Description
B	With bath lubrication
	If the designation does not include a B: with grease lubrication

8.3 SL2 synchronous linear motors

8.3.1 Description



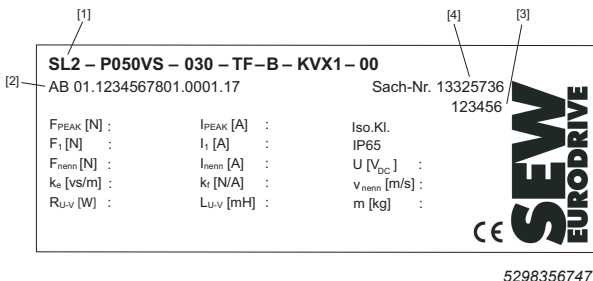
2997988619

SL2 synchronous linear motors are available in three designs for speed classes 1, 3 and 6 m/s: SL2 Basic, SL2 Advance System and SL2 Power System. For longer travel paths, secondaries are available in different lengths and can be easily lined up with one another. The SL2 Advance System features a motor cooling unit, which provides even better cooling than SL2 Basic. A forced cooling fan gives the SL2 Power System a further power boost.

8.3.2 Nameplate

Nameplates that show the technical data are attached to the primaries and secondaries of the linear motor:

Exemplary representation of a nameplate



- [1] Type code
- [2] Customer order number
- [3] Production number
- [4] Part number
- F_{PEAK} Maximum force
- F₁ Maximum force available up to v₁
- F_{nominal} Rated force
- k_e Voltage constant
- R_{U-V} Winding resistance¹⁾
- I_{PEAK} Maximum current
- I₁ Current at F₁
- I_{nominal} Rated current
- k_r Force factor
- L_{U-V} Inductance¹⁾
- Iso.Kl. Thermal class
- IP Degree of protection
- V DC link voltage
- V_{nominal} Nominal speed
- m Weight

1) Half the conductor value (UV value) is used for startup.

Nameplate of SL2-Advanced System and SL2-Power System

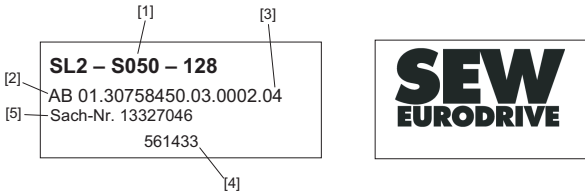
SEW-EURODRIVE							
76646 Bruchsal/Germany							
Type	SL2 - P050S - 30 - TF - P - SSXS - 00						
No.	01.1234567801.0001.17						
F _{pk}	1300.0	N	I _{pk}	11.8	A	kg	12.300
F ₁	1000.0	N	I ₁	8.7	A	IP	54
F _N	760.0	N	I _N	6.1	A	Th.Kl.	B
k _e	76.0	V _{s/m}	k _f	131.0	N/A	°C	+5...+40
R _{U-V}	7.02	Ω	L _{U-V}	45.0	mH		
U	490.0	V _{DC}	f _n	106.0	Hz	U _p	258 V
v _N	3.4	m/s	Part-No.				
1332 783 6						Made in Germany	

20509321867

Type	Type code
no.	Customer order number
F _{pk}	Maximum force
F ₁	Maximum force available up to v ₁
F _N	Rated force
k _e	Voltage constant
R _{U-V}	Winding resistance ¹⁾
U	DC link voltage
v _N	Nominal speed
I _{pk}	Maximum current
I ₁	Current at F ₁
I _N	Rated current
k _f	Force factor
L _{U-V}	Inductance
Part no.	Part number
kg	Weight
IP	Degree of protection
Th.cl.	Thermal class
°C	Ambient temperature range
V _p	Internal voltage at v _N
f _n	Rated frequency
v ₁	Transitional speed

1) Half the conductor value (UV value) is used for startup.

Nameplate secondary



- [1] Type code
- [2] Customer order number
- [3] Date of production
- [4] Production number
- [5] Part number


8.3.3 Type code

Primary

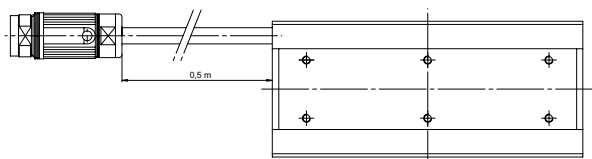
Example: SL2-P050VS-030-TF-B-KVX1-00		
Product name	SL2	• Second-generation synchronous linear motor
Motor component	P	• P = Primary
Active width of the primary	050	<ul style="list-style-type: none"> • 025 = 25 mm • 050 = 50 mm • 100 = 100 mm • 150 = 150 mm • 200 = 200 mm • 250 = 250 mm
Length of the primary	VS	<ul style="list-style-type: none"> • VS = Very short • S = Short • M = Medium • ML = Medium long
Speed class	030	<ul style="list-style-type: none"> • 010 = 1 m/s • 030 = 3 m/s • 060 = 6 m/s
Motor protection	TF	<ul style="list-style-type: none"> • TF = PTC thermistor • KY = Continuous motor temperature monitoring • PK = PT1000¹⁾
Motor design	B	<ul style="list-style-type: none"> • B = SL2-Basic • A = SL2-Advanced System • P = SL2-Power System
Connection	KVX1	<ul style="list-style-type: none"> • KVX1 = Cable extension (SL2 Basic) • AVX0 = Cable extension with connector (SL2-Basic) • SSXS = Connector (SL2-Power System, SL2-Advanced System)
Design	00	<ul style="list-style-type: none"> • 00 = Standard • 01 = With modified winding

1) Not available for all part numbers, but additional part numbers can be added.

Cable extension SL2-Basic

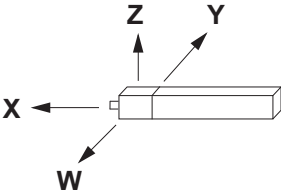
Example: SL2-...-...-KVX1-...		
Connection type	K	<ul style="list-style-type: none"> • K = Cable extension • A = Connector
Electrical connection	V	<ul style="list-style-type: none"> • V = Connected
Cable outlet position	X	<ul style="list-style-type: none"> • X = Standard 
Cable extension length	1	<ul style="list-style-type: none"> • 1 = 1 m (standard) • 4 = 4 m (can be ordered) • 0 = 0.5 m (cable length only with connector design)

The SL2-Basic version with $I_{\text{nominal}} \leq 26 \text{ A}$ is available with Intercontec round connector → type AVX0



20687053707

Connector positions of SL2-Advanced System and SL2 -Power System

Example: SL2-...-...-SSXS-...		
Connection type	S	<ul style="list-style-type: none"> • S = Connector
Mechanical design	S	<ul style="list-style-type: none"> • S = Standard
Position of connector	X	<ul style="list-style-type: none"> • X = Standard <p>Not available for the following motors/plug-in connections:</p> <ul style="list-style-type: none"> • SL2-050 Power System with connector position Z¹⁾ • SL2-100 Power System with connector position W¹⁾ • SL2-150 Power System with connector position Z¹⁾ 
Design	S	<ul style="list-style-type: none"> • S = Standard

1) Collision with M12 24 V connector

8 Synchronous Servomotors

SL2 synchronous linear motors

Secondary

Example: SL2-S050-128		
Product name	SL2	• Second-generation synchronous linear motor
Part designation	S	• Secondary
Active magnet width of the secondary	050	<ul style="list-style-type: none"> • 025 = 25 mm • 050 = 50 mm • 100 = 100 mm • 150 = 150 mm • 200 = 200 mm • 250 = 250 mm
Length of the secondary	64	<ul style="list-style-type: none"> • 064 = 64 mm • 128 = 128 mm • 256 = 256 mm • 512 = 512 mm

Length measuring system

Example: AL1H		
Encoder type	A	• A = Absolute encoder
Measuring system	L	• L = Linear measuring system
Encoder variant	1	<ul style="list-style-type: none"> • 1 = L230 • 2 = TTK70
Encoder interfaces	H	• HIPERFACE®

24770132/EN – 12/2017

9 Synchronous Servo Gearmotors

9.1 Description

The following figure depicts servo gearmotors:

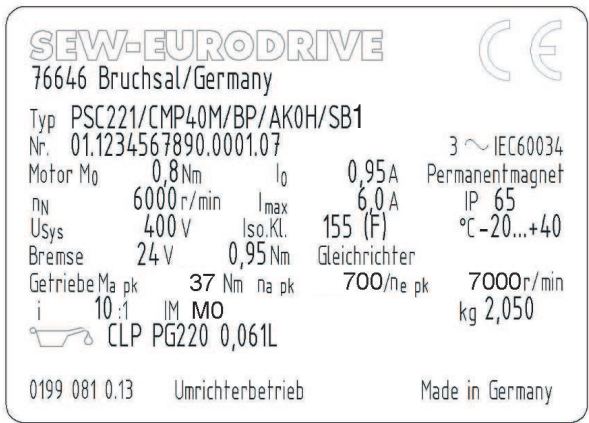


3727038859

9.2 Servo gearmotor nameplate

9.2.1 Nameplate for PS.C.. servo gearmotors

The following figure depicts the nameplate for a gearmotor:



3613171339

Key

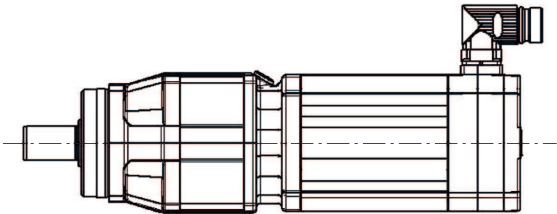
i	Gear unit ratio	n_N	[1/min]	Rated speed
IM	Mounting position	M_o	[Nm]	Rated torque
IP	Degree of protection	I_o	[A]	Rated current
n_{epk}	[1/min] Maximum permitted input speed	I_{max}	[A]	Maximum permitted current
n_{apk}	[1/min] Maximum permitted output speed	f_N	[Hz]	Nominal frequency
M_{apk}	[Nm] Maximum permitted output torque	U_{Max}	[V]	Maximum permitted voltage

The nameplate of servo gearmotors is fixed to the servomotor.

9.3 Type designation

9.3.1 Type designation of a servo gearmotor

Example: Order code servo gearmotor PS.C..



15429760523

For example, a servo gearmotor with brake, manual brake release, PTC thermistor and plug connector has the following type designation:

Example: PSC321CMP50M/BK/PK/AK1H/SB1		
Gear unit type	PSC	Gear unit
Gear unit size	321	
Motor series	CMP	Motor
Motor size	50	
Length	M	Options
Brake	/BK	
Temperature sensor	/PK	
Multi-turn absolute encoder	/AK1H	
Plug connector for motor and brake, connector housing with axial encoder cable entry	/SB1	

10 Gear Units and Adapters

10.1 Description of R, F, K, S, W gear units

Torque and permissible overhung loads are incomparably high in relation to the structural volume of the motor. This was made possible by the compact and torsionally rigid housing with its low weight and optimum power flow. The sealing surfaces are not subject to any load pressure as the force flows through the one-piece housing.

For maximum safety during use, all the shaft-hub connection in the gearmotors are positive connections. Precision positioning tasks are taken care of by the helical, parallel and helical-bevel gearmotors, also available in reduced backlash design.

The following figure illustrates R, F, K, S, and W gear units:



3727480715

10.2 Variants and options of R, F, K, S, W gear units

Below an overview of type designations for R, F, K, S, and W gear units and their options.

10.2.1 Helical gear units

The following table shows possible helical gear unit designs:

Designation	
RX..	Single-stage foot-mounted design
RXF..	Single-stage B5 flange-mounted design
R..	Foot-mounted design
R..F	Foot-mounted and B5 flange-mounted design
RF..	B5 flange-mounted design
RZ..	B14 flange-mounted design
RM..	B5 flange-mounted design with extended bearing hub

24770132/EN – 12/2017

10.2.2 Parallel shaft helical gear units

The following table shows possible parallel-shaft helical gear unit designs:

Designation	
F..	Foot-mounted design
FA..B	Foot-mounted design and hollow shaft
FH..B	Foot-mounted design and hollow shaft with shrink disk
FV..B	Foot-mounted design and splined hollow shaft to DIN 5480
FF..	B5 flange-mounted design
FAF..	B5 flange-mounted design and hollow shaft
FHF..	B5 flange-mounted design and hollow shaft with shrink disk
FVF..	B5 flange-mounted design and hollow shaft with splined hollow shaft to DIN 5480
FA..	Hollow shaft
FH..	Hollow shaft with shrink disk
FT..	Hollow shaft with TorqLOC® hollow shaft mounting system
FV..	Splined hollow shaft to DIN 5480
FAZ..	B14 flange-mounted design and hollow shaft
FHZ..	B14 flange-mounted design and hollow shaft with shrink disk
FVZ..	B14 flange-mounted design and hollow shaft with splined hollow shaft to DIN 5480

10.2.3 Helical-bevel gear units

The following table shows possible helical-bevel gear unit designs:

Designation	
K..	Foot-mounted design
KA..B	Foot-mounted design and hollow shaft
KH..B	Foot-mounted design and hollow shaft with shrink disk
KV..B	Foot-mounted design and splined hollow shaft to DIN 5480
KF..	B5 flange-mounted design
KAF..	B5 flange-mounted design and hollow shaft
KHF..	B5 flange-mounted design and hollow shaft with shrink disk
KVF..	B5 flange-mounted design and hollow shaft with splined hollow shaft to DIN 5480
KA..	Hollow shaft
KH..	Hollow shaft with shrink disk
KT..	Hollow shaft with TorqLOC® hollow shaft mounting system
KV..	Splined hollow shaft to DIN 5480
KAZ..	B14 flange-mounted design and hollow shaft
KHZ..	B14 flange-mounted design and hollow shaft with shrink disk

Designation	
KVZ..	B14 flange-mounted design and hollow shaft with splined hollow shaft to DIN 5480

10.2.4 Helical-worm gear units

The following table shows possible helical-worm gear unit designs:

Designation	
S..	Foot-mounted design
SF..	B5 flange-mounted design
SAF..	B5 flange-mounted design and hollow shaft
SHF..	B5 flange-mounted design and hollow shaft with shrink disk
SA..	Hollow shaft
SH..	Hollow shaft with shrink disk
ST..	Hollow shaft with TorqLOC® hollow shaft mounting system
SAZ..	B14 flange-mounted design and hollow shaft
SHZ..	B14 flange-mounted design and hollow shaft with shrink disk

10.2.5 SPIROPLAN® gear units

The following table shows possible SPIROPLAN® gear unit designs:

Designation	
W..	Foot-mounted design
WF..	Flange-mounted design
WAF..	Flange-mounted design and hollow shaft
WA..	Hollow shaft
WA..B	Foot-mounted design and hollow shaft
WH..B	Foot-mounted design and hollow shaft with shrink disk
WHF..	Flange-mounted design and hollow shaft with shrink disk
WH..	Hollow shaft with shrink disk
WT..	Hollow shaft with TorqLOC® hollow shaft mounting system

10.2.6 Options

The following table shows possible option designs for R, F, and K gear units:

Designation	
/R	Reduced backlash

The following table shows possible option designs for K, S, and W gear units:

Designation	
/T	With torque arm

The following table shows possible option designs for F gear units:

Designation	
/G	With rubber buffer

10.2.7 Condition monitoring


The following table shows possible monitoring device designs:

Designation	Option
/DUO	Diagnostic Unit Oil = Oil aging sensor
/DUV	Diagnostic Unit Vibration = Vibration sensor

10.3 Nameplate/type designation

10.3.1 Nameplate

The following figure shows a nameplate:

SEW-EURODRIVE 76646 Bruchsal / Germany K57 AQH140/1 01.1234567890.0001.08						IM	M3B
○						i	19,34 ○
						IP	65
na pk	r/min	232	ne pk	r/min	4500	Ma pk	Nm 665
						kg	32
						Made in Germany	
						0641 543 1	
 CLP HC 220 Synth.Öl / 2,4L							

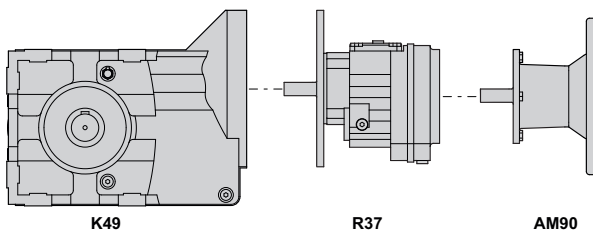
9007199879642891

i	Gear unit ratio
IM	Mounting position
IP	Degree of protection
n_{epk} [1/min]	Maximum permitted input speed
n_{apk} [1/min]	Maximum permitted output speed
M_{apk} [Nm]	Maximum permitted output torque

10.3.2 Type designation of a gear unit

The type designation of the gear unit starts from the component on the output side. For example, a helical-bevel compound gear unit with adapter for IEC motors has the following type designation:

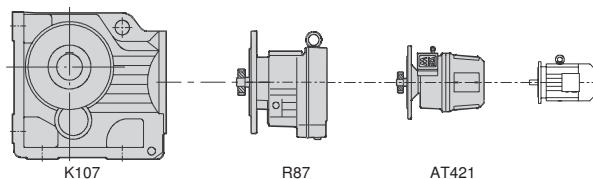
Example: K49R37AM90		
Gear unit type	K	1. Gear unit
Gear unit size	49	
Gear unit series	R	2. Gear unit
Gear unit size	37	
Adapter for installation of IEC motors	AM	Gear unit component on the input side
Adapter size	90	



21431260555

Examples:

The type designation of the gear unit starts from the component on the output side. For example, a helical-bevel compound gear unit with hydraulic start-up coupling has the following type designation:



4325123467

Example: K107R87AT421/BMG		
Gear unit type	K	1. Gear unit
Gear unit size	107	
Gear unit type	R	2. Gear unit
Gear unit size	87	
Type of the gear unit component on the input side	AT	
Size of the gear unit component on the input side	421	
Option of the gear unit component on the input side	/BMG	

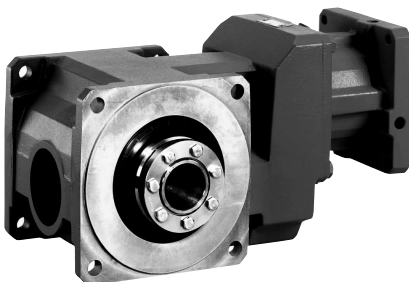
10.4 Description of BS.F, PS.F, PS.C gear units

High processing speeds, increased accuracy, and greater acceleration are the features of BS.F, PS.F, PS.C gear units. In conjunction with consistently low rotational clearance, high stiffness, and a high level of efficiency, these highly precise and extremely powerful servo gear units form the basis for a variety of servo drives.

Servo gear units have the following additional features:

- **Direct motor mounting:**
Positive direct mounting (without terminal adapter) of the SEW servomotor series CMP, CM and DS
- **Motor Adapter:**
EPH motor adapters for PS.F and PS.C planetary servo gear units, ECH motor adapters for PS.C planetary servo gear units, and EBH motor adapters for BS.F helical-bevel servo gear units.
- **Reduced backlash:**
Optionally for PS.F planetary servo gear units and BS.F helical-bevel servo gear units with significantly smaller rotational clearance
- **Minimized rotational clearance:**
Optionally for PS.F planetary servo gear units with even more reduced rotational clearance

The following figures show the BS.F and PS.F gear units:



3624238475



3624368907

10.5 Variants and options of BS.F, PS.F and PS.C gear units**10.5.1 BS.F helical-bevel gear units**

The following table shows possible designs for BS.F helical-bevel gear units:

Designation	
BSF..	Solid shaft with key
BSKF..	Solid shaft with key
BSBF..	Solid shaft with flange block shaft
BSHF..	Hollow shaft with shrink disk
BSAF..	Hollow shaft with keyway
BSKF..B	Solid shaft with key and foot/front-end mounting
BSBF..B	Solid shaft with flange block shaft and foot/front-end mounting
BSHF..B	Hollow shaft with shrink disk and foot/front-end mounting
BSAF..B	Hollow shaft with keyway and foot/front-end mounting

10.5.2 PS..F planetary gear units

The following table shows possible designs for PS.F planetary gear units:

Designation	
PSF..	Solid shaft with key
PSKF..	Solid shaft with key
PSBF..	Solid shaft with flange block shaft

10.5.3 PS..C planetary gear units

The following table shows possible designs for PS.C planetary gear units:

Designation	
PSC..	Solid shaft with key
PSKC..	B5 output flange, solid shaft with key
PSCZ..	B14 output flange, solid shaft
PSKCZ..	B14 output flange, solid shaft with key

10.5.4 Options

The following table shows possible option designs for BS.F gear units:

Designation	
../R	Reduced backlash
../T	Torque arm
../I	Hollow shaft and shrink disk at the output side

The following table shows possible option designs for PS.F gear units:

Designation	
../R	Reduced backlash
../M	Minimized backlash

10.6 Nameplate/unit designation

10.6.1 Nameplate of a PS.C.. planetary gear unit with ECH.. adapter

The following figure shows an example of a nameplate:

SEW-EURODRIVE

76684 Östringen/Germany

PSC321 ECH03/13/11

01.3215264201.0001.08

na pk r/min 650

Ma pk Nm 81

i 10


kg 5,9

IP 65

IM M0

ne pk r/min 6500

Made in Germany

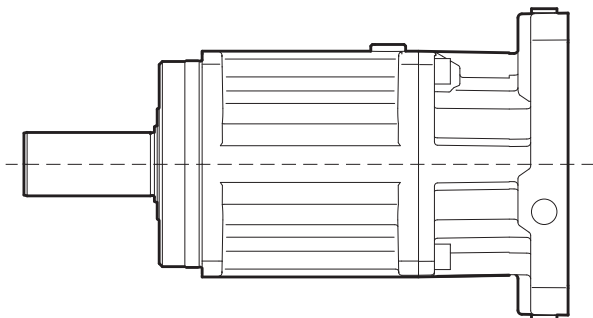
 CLP PG 220 Synth.Öl / 0,091L

0117 899 7

1872039435

- i Gear unit ratio
- IM Mounting position
- IP Degree of protection
- n_{epk} [1/min] Maximum permitted input speed
- n_{apk} [1/min] Maximum permitted output speed
- M_{apk} [Nm] Maximum permitted output torque

10.6.2 Type designation of a servo gear unit







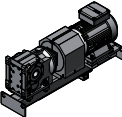

4289400203

For example, a planetary servo gear unit with adapter has the following type designation:

PSF521 /R EPH07/21/13	
PSF	Gear unit type: <ul style="list-style-type: none"> • PSF.. • PSKF.. or • PSBF..
521	Gear unit size: e.g.: 521
/R	Option for all planetary servo gear units: <ul style="list-style-type: none"> • ../R: Reduced rotational clearance • ../M: Minimized rotational clearance
EPH	Adapter designation for planetary servo gear units
07	Code for performance class
/21	Flange geometry (centering, hole circle)
/13	Coupling hole classification



10.7 Components on the input side

The following table provides an overview of output side components:

IEC or NEMA adapter AM		<ul style="list-style-type: none"> • For mounting motors in accordance with IEC or NEMA standard • IEC motors: Adapter for sizes 63 – 280 NEMA motors: Adapter for sizes 56 – 365. • Positive torque transmission via impact resistant claw coupling.
AR adapter with slip clutch		<ul style="list-style-type: none"> • Non-positive torque transmission • Adjustable slip torque • The coupling slips in case of overload to avoid damage
Adapter with hydraulic start-up coupling AT		<ul style="list-style-type: none"> • Adapter for heavy starting systems • Overload protection during start-up phase • Smooth start-up • Installation with touch guard • It is possible to mount SEW motor sizes 71 – 180. Helical-bevel gear units with a hydraulic start-up coupling on a swing base are available for motors of size 200 – 280. • Preferred speeds: 1400 1/min and 2800 1/min
Adapter with hydraulic start-up coupling and optional disk brake AT../BM(G)		<ul style="list-style-type: none"> • Adapter for defined braking. • The DC-operated electromagnetic disk brake meets the safety requirements of braking in case of a power failure. • Braking torques may vary. • Available with connection for DC and AC voltage • Optional manual brake release
Adapters with hydraulic start-up coupling on a swing base		<ul style="list-style-type: none"> • For motors size 200 and larger • Optional brake
AD input shaft assembly		<ul style="list-style-type: none"> • For drives via the exposed shaft-end • Input shafts have metric dimensions according to IEC standard. • Input shaft is manufactured with a centering bore at the face end • High overhung loads caused by solid bearing of the input shaft

33924

24770132/EN – 12/2017

AD.. input shaft assembly with motor mounting platform /P		<ul style="list-style-type: none"> • Compact installation using an adjustable motor platform. • Parallel alignment to the input shaft • With tapped holes for IEC standard motor <p style="text-align: right;">3392818955</p>
AQ adapter for servomotors		<ul style="list-style-type: none"> • For mounting servomotors to R, F, K, S, and W gear units • Torque transmission via claw coupling

10.8 Description of gear units for electrified monorail systems

10.8.1 Description

Specific requirements are placed on gear units for operating electrified monorail systems (EMS). With the gear unit series HW., HS., helical-worm gear unit, and HK., helical-bevel gear unit, SEW-EURODRIVE supplies drives that are specifically tailored to meet the requirements for light and heavy load applications. The performance characteristics of both groups of gear units meet the specific requirements, such as conveying capacity, conveying speed or payload.


All gear units for electrified monorail systems are additionally equipped with an integrated coupling.

Both groups of gear units have the following characteristics:

- High permitted overhung loads for maximum working loads
- Energy-efficient operating principle of gear units and motors
- Reproducible stopping accuracy by using disk brakes

10.8.2 Nameplate

The following figure shows an example of a nameplate:

SEW-EURODRIVE					
76646 Bruchsal/Germany					
HS 41				IM	M3A
01.1240523809.00001.08					
na	r/min	1380/16			
Ma max	Nm	137			kg 13
				i	84
					IP 65
					Made in Germany
	CLP 680 Miner. Öl / 0,8 l				06415431

9007200625004427

i = Gear unit ratio
IM = Mounting position
IP.. = Degree of protection
n_a rpm = Output speed
M_{amax} Nm = Output torque

10.8.3 Type designation

HK40-DRS80M4/BE1/TF	
H	Electrified monorail gear unit
K	W = SPIROPLAN® gear unit S = Helical-worm gear unit K = Helical-bevel gear unit
40	Gear unit size
DRS..	Motor series DRN.., DRP.., DRE.., DRS..
80M4	Motor size and number of poles
/BE1	Motor option: brake
/TF	Motor option thermal motor protection

11 ECDriveS®

11.1 Characteristics and features

The ECDriveS® 24 V drive system by SEW-EURODRIVE consists of a brushless DC gearmotor that can be directly integrated into a conveyor roller, or be universally used as gearmotor.

The drive is controlled by remote commutation electronics with Ethernet-based ECC-DFC zone control or by the ECC-DBC binary control.

The Ethernet control is characterized by an integrated conveyor logic capable of decentralized realization of zero pressure accumulation and many other conveyor tasks.

The driving roller ECR and the ECG gearmotor can be operated in two modes, in ECO mode and in BOOST mode.

ECO mode and BOOST mode differ in speed and torque. ECO mode offers the optimum performance characteristics for most of the applications of the container conveyor technology. However, BOOST mode with increased short-term torque is the right choice if a high starting torque is required.

11.2 Type code

11.2.1 Type code ECR roller drive

Example: ECR-A2M-50-450-045-Z-A-V0		
Product family	EC	• EC = Device family ECDriveS®
Product type	R	• R = Roller
Design	A	• A = IP54 degree of protection – standard • W = IP66 degree of protection – wet area application • Z = Operation to -30 °C – deep-freezing application
Voltage	2	• 2 = 24 V
Motor connection	M	• Motor cable M8, 1000 mm
Roller diameter	50	• 50 mm
Length between frames	450	• Length between frames according to table Minimum roller length.

Example: ECR-A2M-50-450-045-Z-A-V0		
Velocity class	04 5	<p>Speed in m/min</p> <ul style="list-style-type: none"> • 015 • 020 • 025 • 035 • 045 • 060 • 075 • 095 • 125 • 175 • 215
Tube options	Z	<ul style="list-style-type: none"> • Z = Galvanized steel – standard • J = Stainless design • U = PUR coating 3 mm • P = PVC hose 2 mm • K = Cone 1.8° on galvanized steel • C = Cone 1.8° on steel in stainless steel design • D = PVC hose on steel in stainless steel design • E = PUR hose on steel in stainless steel design • X = Special design
Axis design	B	<ul style="list-style-type: none"> • A = Cable side: M12×1.25 on 11 mm hexagon Opposite side: M8 female thread • B = Cable side: M12×1.25 on 11 mm hexagon On the opposite side: Smooth 11 mm spring-loaded hexagon axis • C = Cable side: 11 mm hexagon Opposite side: M8 female thread • X = Special design
Transmission heads	V0	<ul style="list-style-type: none"> • A0 = Smooth tube without groove or drive head • V1 = Drive head for Poly-V-belt in shape PJ according to DIN 7867 • G0 = Tube with groove head • G1 = Grooved tube with groove position 50/80

11.2.2 Type code ECG gearmotor

Example: ECG-A2M-67-A-K0		
Product family	EC	• EC = Device family ECDriveS®
Product type	G	• G = Gearmotor

Example: ECG-A2M-67-A-K0		
Design	A	• A = IP54 degree of protection
Voltage	2	• 2 = 24 V
motor options	M	• M8 plug connector
Gear unit ratio	67	Gear ratio i =
		• 67
		• 45
		• 33
		• 27
		• 18
		• 15
		• 11
		• 9
Version	A	• A = Standard
Output shaft	K0	• K = Key
	X	• Special design

11.2.3 Type designation of the controls

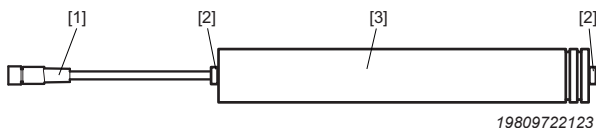
- ECC-DBC-24-00 = Binary control
- ECC-DFC-24-00 = Fieldbus control
- ECC-DFC-24-10 = EtherCAT®-compatible control
- ECIO-8-24-00 = IO module PROFINET, Ethernet/IP™, Modbus/TCP
- ECIO-8-24-10 = IO module EtherCAT®

11.2.4 Type designation of the engineering software

- ECShell

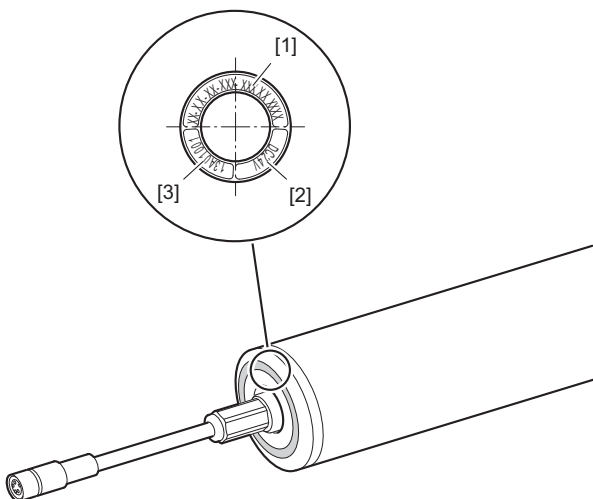
11.3 Overview of the roller drives

11.3.1 ECR roller drive



- [1] Electrical connection
 [2] Axis journal
 [3] Motor roller

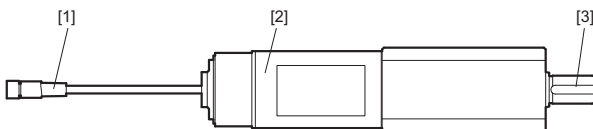
Nameplate



19516478219

- [1] Type designation, e.g.: ECR-A2M-50-450-045-Z-B-V0
- [2] Voltage
- [3] Serial number

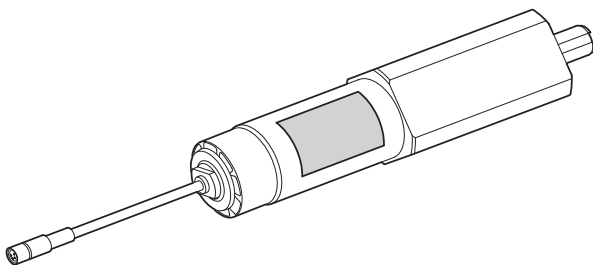
11.3.2 ECG gearmotor



19809719179

- [1] Electrical connection
- [2] Gearmotor
- [3] Motor shaft

Nameplate

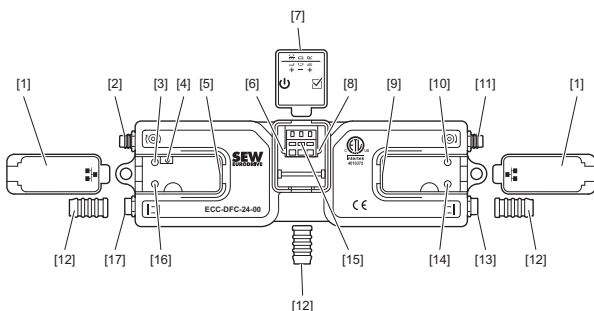


19516434699

11.4 Overview of the hardware of the ECC-DFC fieldbus controller

ECC-DFC modules are designed such that they can be installed and integrated in the side frame of the conveyor belt.

ECC-DFC modules can be used to control up to 2 motor roller zones of the conveyor belt. Each ECC-DFC has interfaces for 2 motor roller zones with the associated 2 photo sensors and an upstream and downstream network. There are also discrete connecting locations for setting up a complete control system for the motor roller conveyor systems, which are divided up into zones.



19516380555

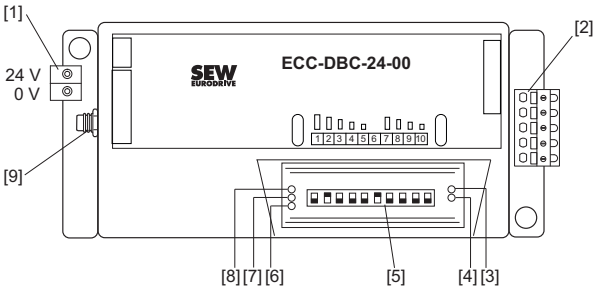
- [1] Removable IP54 cover for Ethernet connections
- [2] Left motor connection, 4-pin M8 connector for motor roller connection
- [3] "Left motor" LED – motor status indicator
- [4] Button for module exchange
- [5] Left connection – RJ45 Ethernet network connection between modules
- [6] Power LED indicator of the module
- [7] Removable IP54 cover for the power wiring compartment
- [8] Status LED indicator of the module
- [9] Right connection – RJ45 Ethernet network connection between modules
- [10] "Right motor" LED – motor status indicator
- [11] Right motor connection, 4-pin M8 connector for motor roller connection
- [12] 1 x power wiring cable gland for degree of protection IP54, 2 x RJ45 protective casing for degree of protection IP54
- [13] Right sensor connection, M8 connection for zone photo sensor
- [14] Right sensor status LED indicator
- [15] DC 24 V power connections with LED indicator
- [16] Left sensor status LED indicator
- [17] Left sensor connection, M8 connection for zone photo sensor

INFORMATION



The designations "left" and "right" for the module connections are based on the shown view of the module and must not be confused with the product flow direction on the conveyor belt. The direction of the product flow is designated using "upstream" or "downstream".

11.5 Overview of the hardware of the ECC-DBC binary control



19852786699

- [1] Removable feed-in terminal 24 V
- [2] Removable I/O terminal strip
- [3] LED "Overtemperature"
- [4] Operation LED
- [5] DIP switch
- [6] LED "Start"
- [7] LED "Hold"
- [8] LED "Stop"
- [9] ECR or ECG roller drive connection

12 Industrial Gear Units

12.1 X.. series

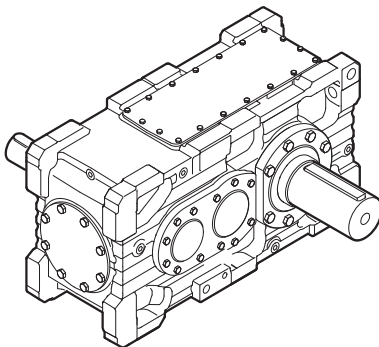
12.1.1 Description

Robust and universal gear unit series which can be optimally adjusted to the task due to finely stepped torque ratings. The universal modular system concept sets new standards with respect to availability and offers a broad range of application options, e.g. for conveyor systems, ball mills and agitators. Application gear units, such as for bucket elevators, complete the range.

12.1.2 Gear unit type

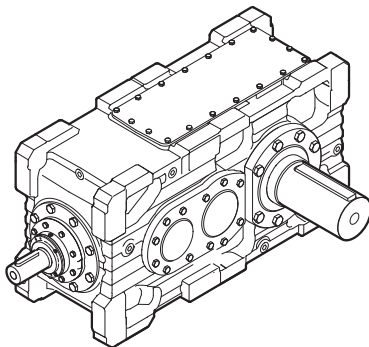
SEW-EURODRIVE distinguishes between 3 gear unit types:

- **X.F...:** Helical gear units with parallel shafts



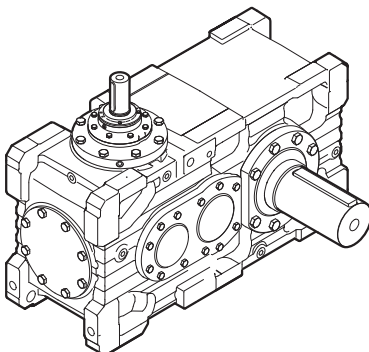
3542987787

- **X.K...:** Bevel-helical gear units with right-angle shaft arrangement



3542989963


- **X.T...:** Bevel-helical gear units with right-angle shaft arrangement




3542992139

12.1.3 Nameplate

The following figure shows a nameplate:

SEW-EURODRIVE 76646 Bruchsal/Germany									
Type	X3FS190/B								
Nr.	01.1234567812.0001.06								
	min.	nom.	max.	i:	-39.06				
P _{k1} [kW]	36	180	180	F _s	1.5				
M _{k2} [Nm]	43300	43300	43300	PM1 [kW]	0				
n ₁ 1/min	296	1480	1480	T _a [°C]	-25...+40				
n ₂ 1/min	7.6	37.9	37.9	1743 895 0.13					
IM	M4-M1/9°			II2D Ex h IIIB T150°C Db IP65					
Made by SEW									
Qty of greasing points	2	Fans	0	Mass [kg]	1340	Year	2018		
	Synthetic Oil CLP HC460 90 ltr.								

99079192220796427

Type	Type designation
No. 1	Serial number
P _{K1} [kW]	Operating power on the input shaft (HSS)
M _{K2} [Nm]	Gear unit output torque
n ₁ [1/min]	Input speed (HSS)
n ₂ [1/min]	Output speed (LSS)
norm.	Normal operating point
min.	Operating point at minimum speed
Max.	Operating point at maximum speed
i	Exact gear unit ratio
F _S	Service factor
F _{R1} [N]	Actual overhung load acting on the input shaft
F _{R2} [N]	Actual overhung load acting on the output shaft
F _{A1} [N]	Actual axial load acting on the input shaft
F _{A2} [N]	Actual axial load acting on the output shaft
Mass [kg]	Weight of the gear unit
Qty. of greasing points	Number of greasing points
Fans	Number of installed fans
	Oil grade and viscosity class/oil quantity
Year	Year of manufacture
IM	Mounting position and mounting surface

12.1.4 Type designations

Gear units

The following example shows the structure of the type designation:

X3KS250 /HU /B	
X	Industrial gear unit series
3	Number of gear unit stages <ul style="list-style-type: none"> • 2 = 2 stages • 3 = 3 stages • 4 = 4 stages
K	Gear unit variant <ul style="list-style-type: none"> • F = Helical gear unit • K = Bevel-helical gear unit • T = Bevel-helical gear unit
S	Type of output shaft <ul style="list-style-type: none"> • S = Solid shaft with key • R = Smooth solid shaft • L = Splined solid shaft • A = Hollow shaft with keyway • H = Hollow shaft with shrink disk • V = Splined hollow shaft
250	Gear unit sizes <ul style="list-style-type: none"> • 100 – 320
HU	Housing design <ul style="list-style-type: none"> • HU = Universal housing • HH = Horizontal housing • HA = Agitator housing • HT = Thermal housing
B	Gear unit mounting <ul style="list-style-type: none"> • /B = Foot • /T = Torque arm • /F = Flange

Oil supply systems

The gear unit can be equipped with an oil supply system for cooling and lubrication purposes. The following example shows the structure of the type designation.

OWC020-00/M	
O	Oil supply system
W	Cooling medium <ul style="list-style-type: none"> • W = Water • A = Air • N = Motor pump
C	Type <ul style="list-style-type: none"> • C = Circulation cooling • P = Pressure lubrication
020	Size <ul style="list-style-type: none"> • 005 – 070
	Application
-0	Mounting positions <ul style="list-style-type: none"> • 0 = M1/M2/M3/M4 • 1 = M5/M6
0	Option <ul style="list-style-type: none"> • 0 = 50 Hz • 1 = 60 Hz • 2 = 50 Hz / 60 Hz • 9 = Special design
M	Mounting type <ul style="list-style-type: none"> • M = Mounted to the gear unit • S = For separate installation

Flange couplings

The following example shows the structure of the type designation.

FC530/175SM	
FC	Rigid flange coupling
530	Outer diameter of the flange
175	Bore diameter
S	Type of shaft-hub connection: <ul style="list-style-type: none"> • S = Cylindrical interference fit • K = Keyed connection • T = Conical interference fit
M	Type of centering: <ul style="list-style-type: none"> • M = External centering • F = Internal centering

Abbreviations for optional accessories

The table shows the abbreviations used and what they mean.

Abbreviation	Meaning
BF	Base frame
BS	Backstop
APL	Torque-limited backstop
CCV	Water cooling cover
CCT	Water cooling cartridge
F	Mounting flange
FC	Flange coupling
FAN	Fan
FAN-ADV	Fan, Advanced design
SP	Oil expansion tank
HH	Horizontal housing
HU	Universal housing
HA	Agitator housing
HT	Thermal housing
HSST	Through-going input shaft
LSST	Through-going output shaft
MA	Motor adapter
SB	Swing base
SEP	Shaft end pump
T	Torque arm
OAC	Circulation cooling oil-air cooler with motor pump
OWC	Circulation cooling oil-water cooler with motor pump
OAP	Circulation cooling oil-air cooler with pressure lubrication and motor pump
OWP	Circulation cooling oil-water cooler with pressure lubrication and motor pump
ONP	Pressure lubrication and motor pump
ONP1	Pressure lubrication and motor pump
ONP1L	Pressure lubrication and motor pump
OD	Oil dipstick
ODV	Oil drain valve
OLG	Oil level glass
OH	Oil heater
VBD	V-belt drives

All options are not part of the type designation except for mounting flange, torque arm, horizontal and universal housing.

12.2 MC.. Series

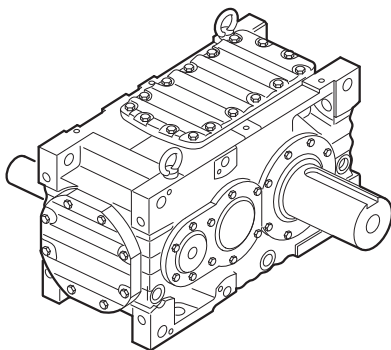
12.2.1 Description

MC series industrial gear units are particularly compact helical and bevel-helical gear units. The 7 sizes available in the MC series cover the 6 to 65 kNm torque range. Their parallel shaft design offers plenty of flexibility in system design and requires remarkably little space. MC gear units can be used in applications such as materials handling, transporting heavy loads, mixing, crane drives and shredders. A design based on this series, with extended bearing distance and reinforced output shaft, is also available.

12.2.2 Gear unit type

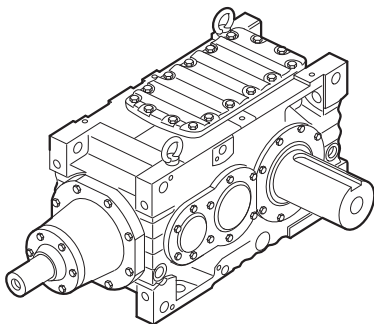
SEW-EURODRIVE distinguishes between 2 gear unit types:

- **MC.P.:** Helical gear units with parallel shafts



3546970251

- **MC.R.:** Bevel-helical gear units with right-angle shaft arrangement



3546972427

12.2.3 Nameplate

The following figure shows a nameplate:

○ SEW-EURODRIVE		Bruchsal / Germany		○
Type	MC3RLSF02			
Nr. 1	03 30764647	Nr. 2	K3463	
	norm.	min.	max.	i 1 :
PK1 [kW]	16.5	16.5	16.5	FS 203123
MK2 [kNm]	2.04	2.04	2.04	FR1 [kN] 0
n1 [1/min]	1500	1500	1500	FR2 [kN] 0
n2 [1/min]	73.8	73.8	73.8	FA1 [kN] 0
Operation instructions have to be observed!				FA2 [kN] 0
Made by	SEW-Finland			Mass [kg] 219
Qty of greasing points	2	Fans	0	
Lubricant	Mineral Oil ISO VG 460 EPPAO - 7 ltr.			Year 2003
○				

3545338379

Type		Type designation
No. 1		Serial number 1: Order number (e.g. SAP order number)
No. 2		Serial number 2: (Manufacturer number of the plant/assembly plant)
P _{K1}	norm.	[kW] Operating power at the input shaft @ n ₁ norm.
	min.	Operating power at the output shaft @ n ₁ min.
	Max.	Operating power at the output shaft @ n ₁ max.
M _{K2}	norm.	[kNm] Operating torque at LSS @ n ₁ norm.
	min.	Operating torque at LSS @ n ₁ min.
	Max.	Operating torque at LSS @ n ₁ max.
n ₁	norm.	[1/min] Input speed (HSS)
	min.	Minimum input speed (HSS)
	Max.	Maximum input speed (HSS)
n ₂	norm.	[1/min] Output speed (LSS)
	min.	Minimum output speed (LSS)
	Max.	Maximum output speed (LSS)
Made by		Location of the gear unit assembly / production
norm.		Normal operating point
min.		Minimum operating point
Max.		Maximum operating point
i		Exact gear unit reduction ratio
		Service factor
F _{R1}	[kN]	Radial load present at the HSS
F _{R2}	[kN]	Radial load present at the LSS

F_{A1}	[kN]	Axial load present at the HSS
F_{A2}	[kN]	Axial load present at the LSS
Mass	[kg]	Gear unit weight
Qty. of greasing points:		Number of relubrication points (e.g. regreasable labyrinth seal or drywell sealing system)
Fans		Number of fans mounted to the gear unit
Lubricant		Oil grade and viscosity class/oil quantity
Year		Year of manufacture
IM		Mounting position: Housing position and mounting surface
TU		Permitted ambient temperature

12.2.4 Type designation

The following example shows the structure of the type designation:

MC2RLSF05	
MC	Industrial gear unit series
2	Number of gear unit stages <ul style="list-style-type: none"> • 2 = 2-stage • 3 = 3-stage
R	Gear unit design <ul style="list-style-type: none"> • R = Bevel-helical gear unit • P = Helical gear unit
L	Mounting position <ul style="list-style-type: none"> • L = horizontal • V = vertical • E = upright
S	Type of output shaft <ul style="list-style-type: none"> • S = Solid shaft with key • R = Hollow shaft (with key or shrink disk connection)
F	Gear unit mounting <ul style="list-style-type: none"> • F = Foot mounting • T = Torque arm
05	Sizes 02 – 09

12.3 P.002 – P.102 Series

12.3.1 Description

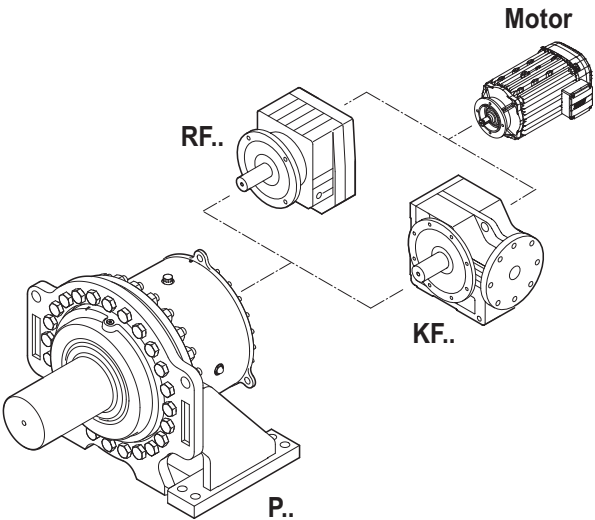
Planetary gearmotors are a combination of

- P.. series planetary gear unit Output stage
- Primary gear unit RF.. or KF..
- Mount-on components: Motor, coupling, adapter, and backstop

The planetary gear unit series comprises 11 sizes with a nominal torque from 24,830 Nm to 631300 Nm.

The load distribution to several planet gears results in a significantly higher power density and consequently in smaller dimensions compared to helical and bevel-helical gear units.

The following figure shows a sample combination of a planetary gear unit, a primary gear unit and a motor.



3543065611

P.. Planetary gear unit

RF.. Helical gear unit (flange-mounted design)

KF.. Helical-bevel gear unit (flange-mounted design)

12.3.2 Nameplate

Planetary gear units

The following example shows the structure of the nameplate.

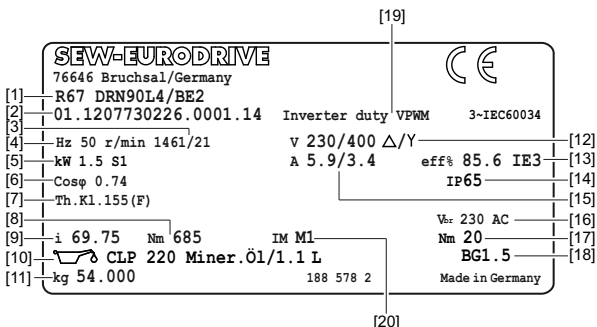
SEW-EURODRIVE			Bruchsal/Germany		
Type	PHF012KF87DRN112M4/BE5/TF/C				
Nr.	01.7346341401.0001.16				
	min.	norm.	max.	i	1433.00
PK1 [kW]	1.20	3.58	3.5	F _s	1.12
Mk2 [Nm]	32768	32768	32768	PM1[kW]	4.00
n1 [1/min]	482	1464	1445	Ta [°C]	0...40
n2 [1/min]	0.34	1	1	1743 897 7 D	
IM	M1 F1				
Qty of greasing points <input type="checkbox"/> Fans <input type="checkbox"/> Mass [kg] 415 Year 2018					
CLP HC 680 Synth.Oil ~ 6.8 L					

9007217843554955

Type		Type designation
No.		Production number
P _{K1}	kW	Operating power on the input shaft (HSS)
M _{K2}	Nm	Gear unit output torque
n ₁	rpm	Input speed (HSS)
n ₂	rpm	Output speed (LSS)
Min.		Operating point at minimum speed
Norm.		Normal operating point
Max.		Operating point at maximum speed
i		Exact gear unit ratio
F _s		Service factor
PM	kW	Nominal motor power
TA	°C	Deviation from standard temperature range (-20 °C – +40 °C)
Weight	kg	Gear unit weight
Greasing points		Number of regreasing points
		Oil grade and viscosity class/approx. oil quantity
Year		Year of manufacture
IM		Mounting position and mounting surface

Primary gearmotor

The following figure shows an example of the nameplate of a DRN.. gearmotor.

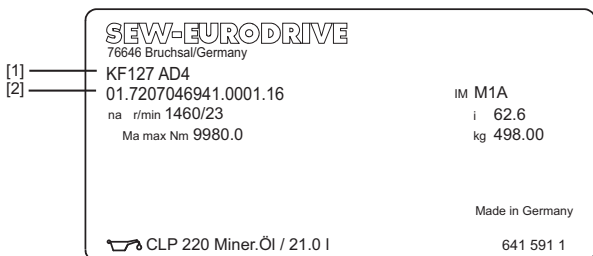


27021611137296651

[1]	Type designation gearmotor
[2]	Serial number
[3] min ⁻¹	Rated speed of the motor / speed of the gear unit output shaft
[4] Hz	Nominal frequency
[5] kW	Rated power/operating mode
[6]	Power factor
[7]	Thermal class
[8] Nm	Output torque
[9]	Gear unit ratio
[10]	Oil type and oil fill volume
[11] kg	Weight
[12] V	Nominal voltage
[13]	Efficiency and energy efficiency class
[14]	Degree of protection according to IEC 60034-5
[15]	Rated current
[16] V	Brake voltage
[17] Nm	Nominal braking torque
[18]	Brake control
[19]	Suitability for inverter operation
[20]	Mounting position

KF.. primary gear units

The following example shows the structure of the nameplate.





18014404889304459


Type		Type designation
[1]		Type designation
[2]		Serial number of primary gear unit
Pe	kW	Input power of the gear unit
Ma max	Nm	Output speed
na	rpm	Input/output speed
IM		Mounting position
i		Gear ratio
kg	kg	Mass

RF../KF.. primary gear unit as gearmotor

The following example shows the structure of the nameplate.

	SEW-EURODRIVE 76646 Bruchsal/Germany		
[1]	KF127 DRN200L4		
[2]	01.7207046942.0001.16	Inverter duty VPWM	3~IEC60034
	Hz 50 r/min 1480/31	v 400/690 Δ/Y	
	kW 30 S1	A56.0/32.5	eff% 93.6 IE3
	cos φ 0.82		IP 54
	Th.Kl. 130(B)		
[3/4]	i 47.82 Nm 9260	IM M1A	
	 CLP 220 Miner.Öl / 21.0 l		
	kg 743.000	188 578 2	Made in Germany

18014404889307147

Type	Type designation
[1]	Type designation
[2]	Serial number of primary gear unit
i	Gear ratio
rpm	Input/output speed
Nm	Output torque
kW	Input power of the gear unit
S1	Operating mode
cos φ	Power factor of the motor
V	Supply voltage in delta/star connection
A	Rated motor current in delta/star connection
eff%	IE class and nominal efficiency for motors included in the scope of the IEC 60034-30-1 standard
Hz	Line frequency
IM	Mounting position
kg	Weight of the primary gearmotor
IP	Degree of protection of the motor
[3]	Brake connection voltage
[4] Nm	Braking torque
	Oil grade and viscosity class/oil quantity

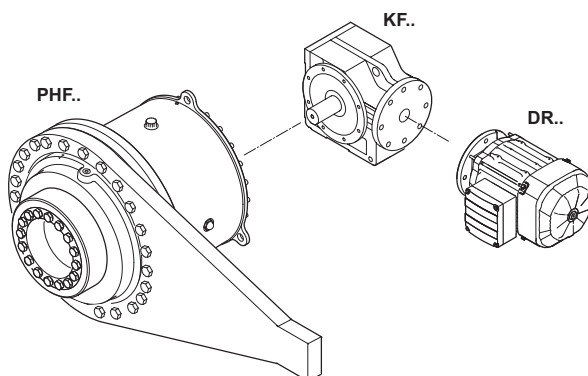
12.3.3 Type designation

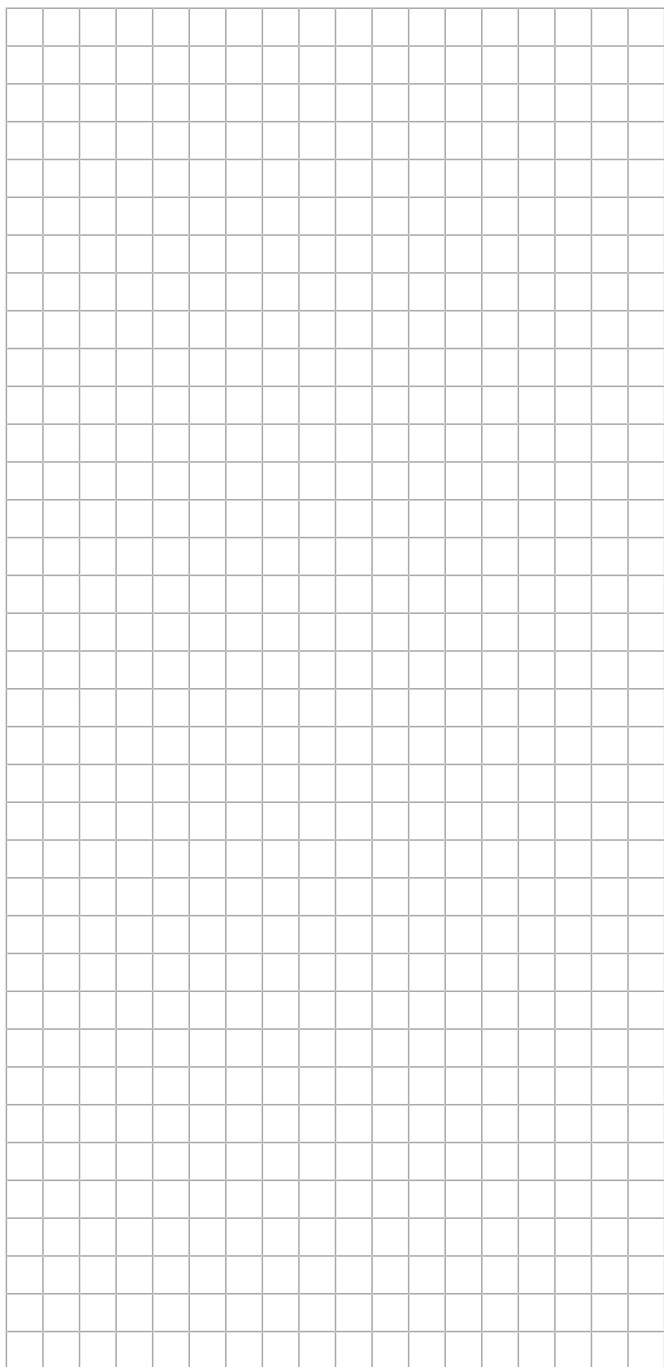
The type designation of the gearmotor starts from the component on the output end.

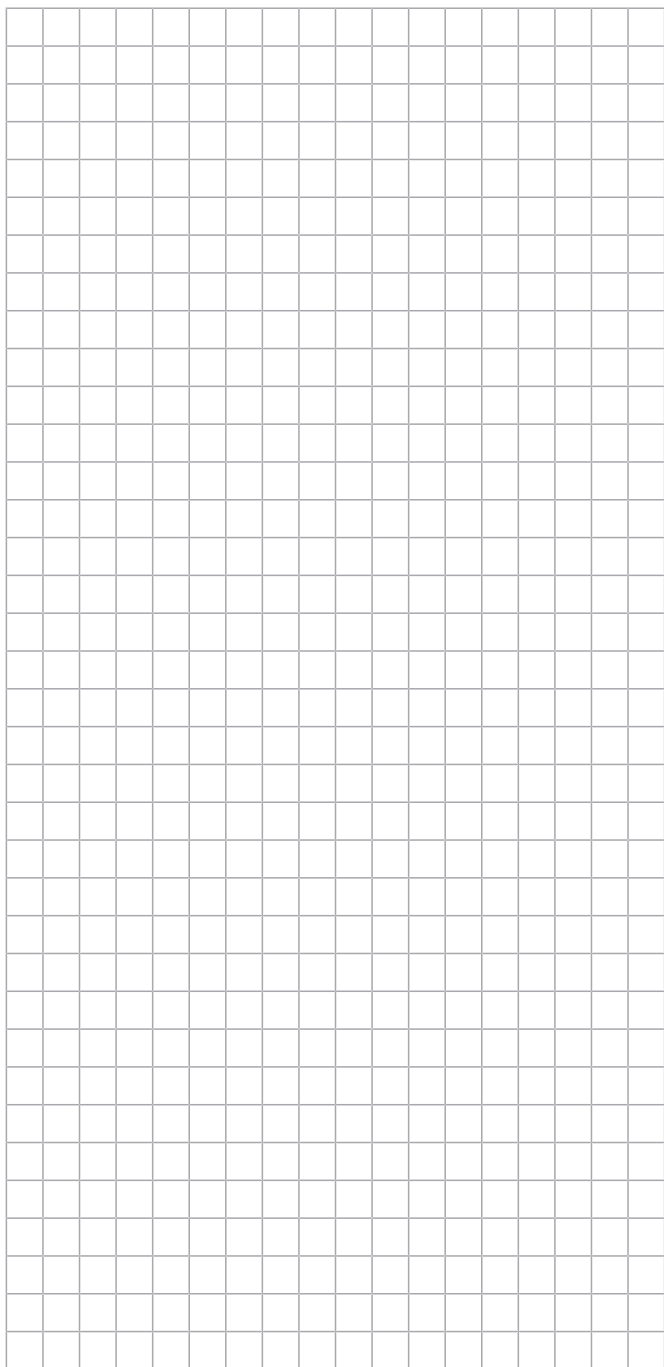
Example: Type designation for a PHF.. planetary gear unit with KF.. primary gear unit

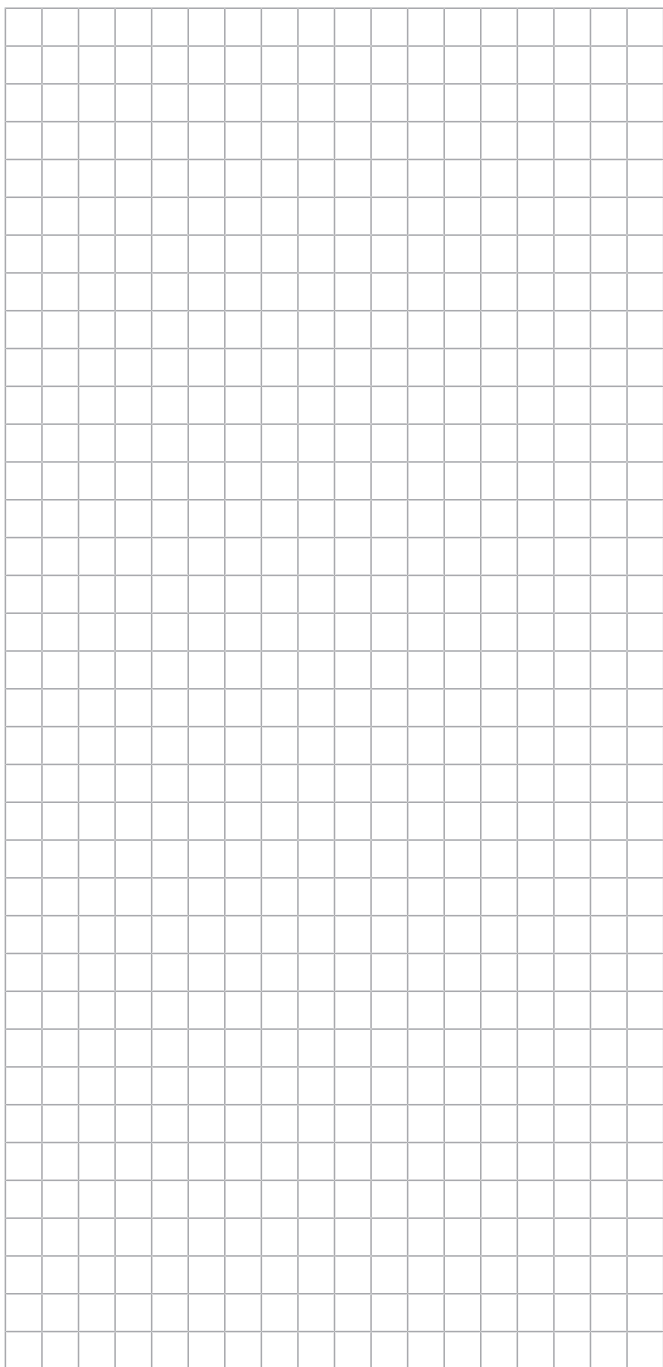
The type designation of the gear unit is structured as follows:

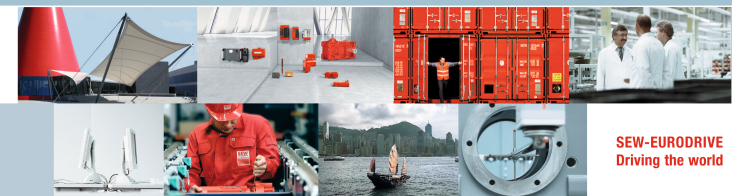
Example: PHF012/T KF77 DRN112M4		
Planetary gear unit	P	Gear unit type
	H	Hollow shaft
	F	Flange-mounted design
	012	Gear unit size
	/T	Torque arm
Primary gear unit	KF	Series
	77	Gear unit size
Motor	DRN..	Series
	112M4	Size + number of poles











SEW-EURODRIVE
Driving the world

SEW
EURODRIVE

SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Str. 42
76646 BRUCHSAL
GERMANY
Tel. +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com

→ www.sew-eurodrive.com