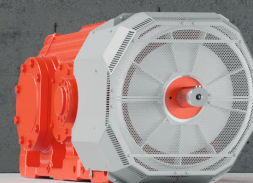


**SEW**  
EURODRIVE

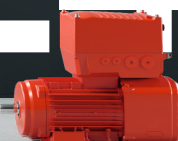
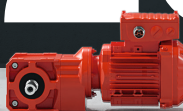
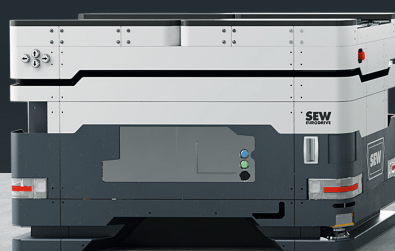


PRODUCTS AND SOLUTIONS

# INNOVATIONS

# 2024

International





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## Who are we? The reliable partner at your side!

**For over 90 years, the owner-operated family business SEW-EURODRIVE has stood for a diverse range of values, including a personal and partnership-based approach, solutions and services, responsibility and quality, tradition and innovation, and a whole lot more besides.**

As a market leader in drive and automation technology, we don't just power countless applications in virtually every industry. With over 22 000 employees, we're also playing a key role in shaping the future of drive technology, ensuring you and your systems and machines are always at the cutting edge – not just now, but in the future, too. We want you to achieve shared success with us.







**Headquarters**  
Bruchsal, Germany



**55**  
sites worldwide



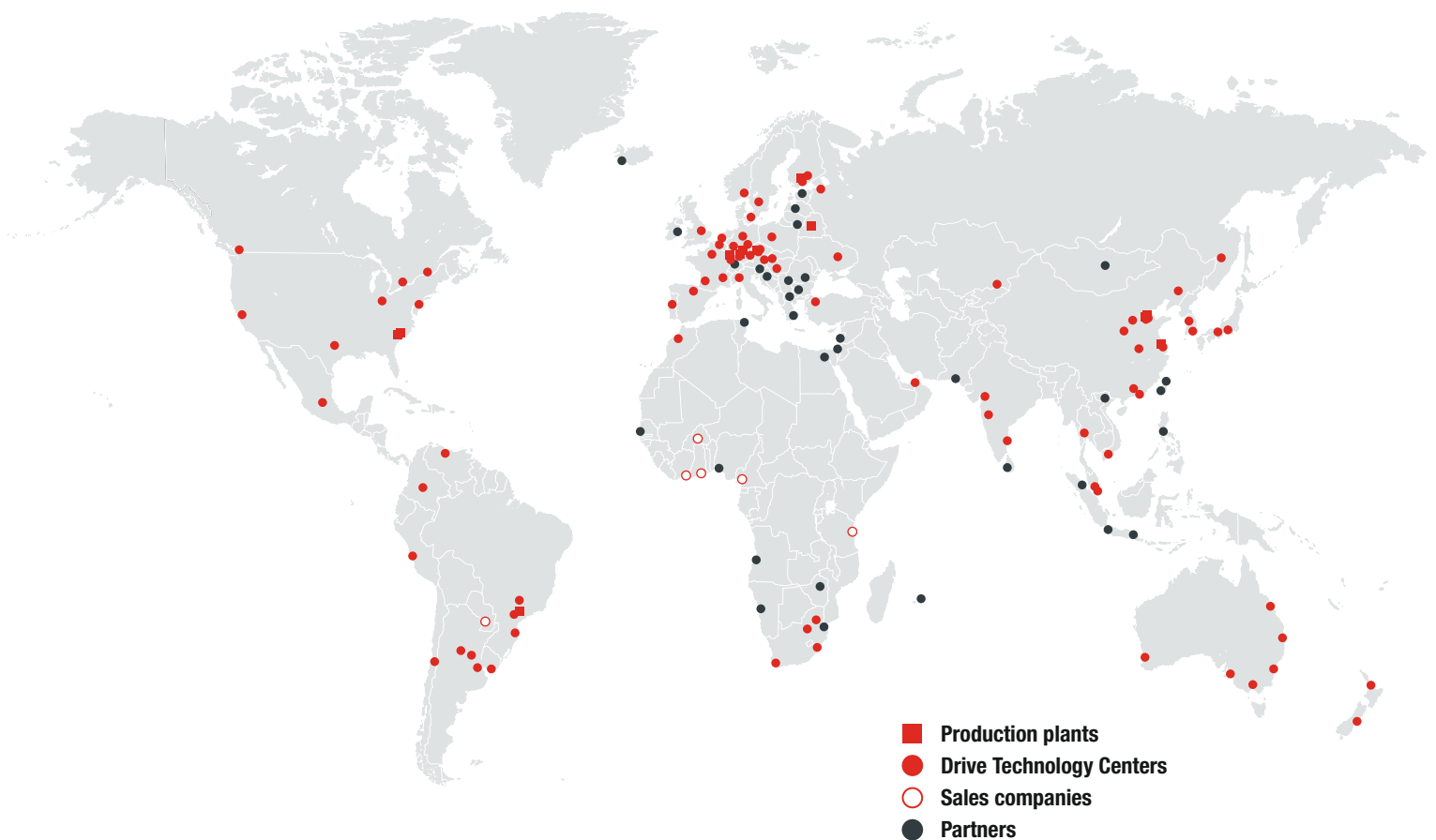
**17**  
production plants



**More than 200**  
sales companies



**24/7**  
service –  
365 days a year



## Where can you find us? We are never far away!

Our network currently comprises 17 production plants and 91 Drive Technology Centers in 55 countries all round the globe, and we're still growing. That puts us in an excellent position and means we are never far away from our customers, offering them a personal, committed, reliable, and partnership-based service – in Germany, in Europe, and worldwide.

What makes us truly stand out from other manufacturers? Thanks to our unique, comprehensive network of service sites and service experts throughout the world, you never have to wait long for spare parts, repairs, or professional advice.

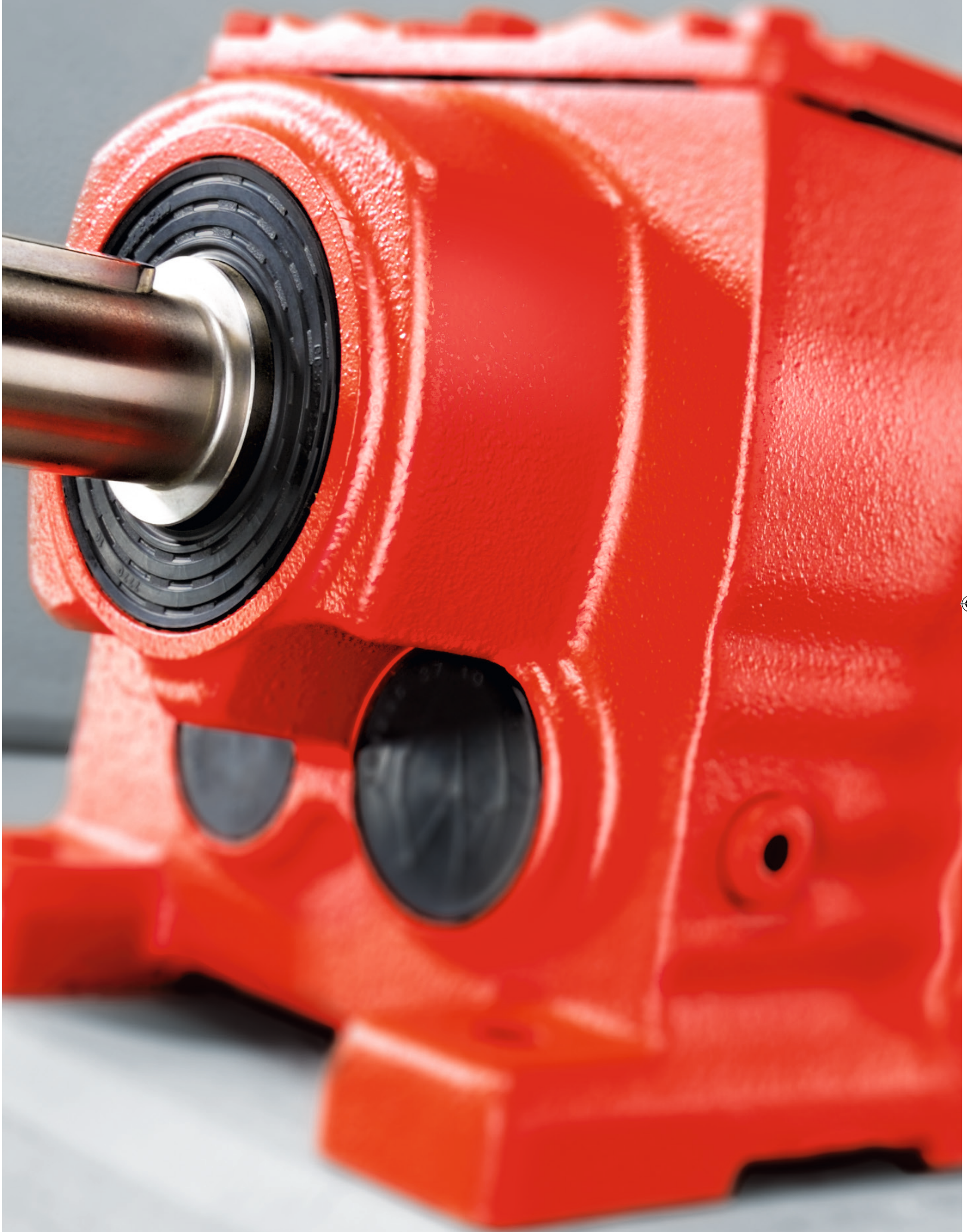


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# 1 Modular automation system

MOVI-C® modular automation system

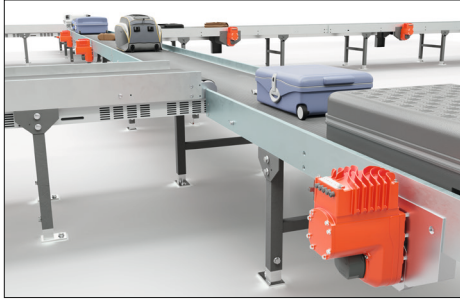
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# MOVI-C® modular automation system

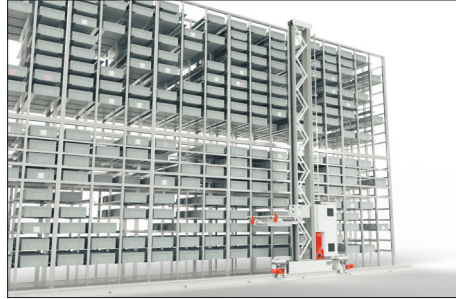


## POSSIBLE USES / TYPICAL APPLICATIONS



### MOVI-C® decentralized: e.g. transport and logistics

- Rotary tables
- Scissor lift tables
- Conveyor units
- Belt conveyors



### MOVI-C® modular: e.g. warehouse technology

- Storage/retrieval systems
- Indoor cranes
- Conveyor vehicles



### MOVI-C® automation components: e.g. food and packaging technology

- Cartoning machines
- FFS machines
- Winders
- Filling systems

## THE ADVANTAGES AT A GLANCE



### A true all-rounder!

MOVISUITE® is a program for planning, startup, operation, and diagnostics that saves users time and money thanks to its optimized user-friendliness.



### Simple, standardized, or customized!

To help ensure a quick startup, MOVIKIT® offers you a large number of parameterizable software modules for the controller. These can be expanded to include your custom logic in the convenient programming environment.



### One inverter system for all needs!

MOVI-C® is the all-in-one automation toolkit from SEW-EURODRIVE, offering flexible components for everything from single-axis automation right through to module automation applications – one manufacturer, one end-to-end solution.



### Modular!

MOVI-C® offers a complete, all-in-one modular automation system. The individual components can be used to create solutions tailored to your requirements and bus topology.

## OVERVIEW OF THE TECHNOLOGY

### Modular automation system

MOVI-C® is the all-in-one solution for automation tasks. Whether you want to implement single-axis or multi-axis applications based on standards, or custom and/or highly complex motion control applications – MOVI-C® can help you do all that and gives you the scope to achieve optimum automation for new projects.

### Designed for industrial use

The devices and software have been designed with special attention to the requirements for efficient startup, maintenance, and troubleshooting. The components meet all requirements and standards regarding industrial use.

### New control modes

Newly developed and optimized control modes to support asynchronous and synchronous motors both with and without encoders on all devices ensure excellent performance, while also maintaining a high level of flexibility.

### State-of-the-art fieldbus systems

Having a variety of fieldbus protocols available is essential when it comes to flexibly integrating solutions into existing infrastructures. MOVI-C® supports all the latest standard fieldbus protocols.

### Integrated, digital motor interface

The integrated, digital motor interface allows for extremely robust and high-performance data transmission – well equipped for both current and future motor functions. It opens up a whole host of new possibilities when used in conjunction with electronic nameplates or integrated and expandable diagnostic units on the motor.



### Energy efficiency

In addition to the inverters, which have been streamlined for efficient energy conversion, the devices in the Power and Energy Solutions series offer a wide range of options for storing energy and releasing it again when required. This helps reduce energy spikes and increase availability, for example.

### Integrated safety technology

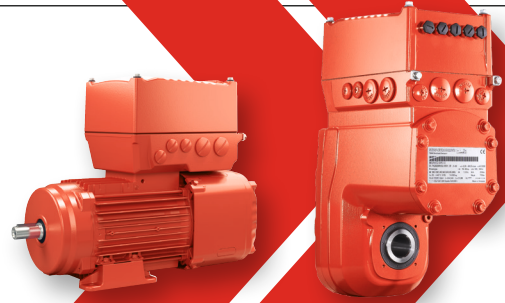
The inverters in the MOVIDRIVE® range come with integrated safety functions – even the basic units. Higher-level safety functions can be incorporated by inserting option cards.



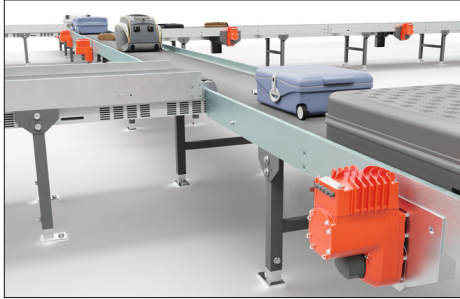
## 2 Decentralized drives and mechatronics

MOVI-C® decentralized drive technology	9
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# MOVI-C<sup>®</sup> decentralized drive technology



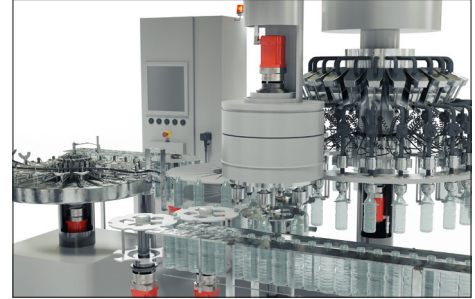
## POSSIBLE USES / TYPICAL APPLICATIONS



Conveyor technology



Logistics / warehouse technology



Materials handling

## THE ADVANTAGES AT A GLANCE



### Scalability/consistency!

Whether you require control cabinet installation or inverter installations in the field, our new inverter platform offers you consistency and scalability for your entire system.



### Lower costs!

Increase your overall equipment effectiveness thanks to condition monitoring and predictive maintenance. An integrated standby mode and flux optimization boost energy efficiency.



### Open solution!

A wide range of integrated communication interfaces enables easy integration into modern installation topologies.

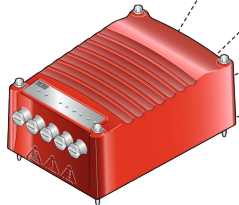


### Flexibility!

Whether a gearmotor with integrated frequency inverter or a decentralized inverter for installation close to the motor, our decentralized drive solutions offer you flexibility in your application, save energy, and cut costs.

## OVERVIEW OF THE TECHNOLOGY

- One decentralized inverter for four product families
- Available in two sizes  
BG1/1E: 2.0 A – 5.5 A  
BG2/2E: 7.0 A – 16.0 A
- High overload capacity (up to 300%)
- Can be operated on various communication systems



### MOVIMOT<sup>®</sup> flexible

- Decentralized inverter for installation close to the motor
- Different drive types can be connected



### MOVIMOT<sup>®</sup> advanced

- Asynchronous motor (IE3) with integrated inverter
- 0.37 kW – 7.5 kW nominal power



### MOVIMOT<sup>®</sup> performance

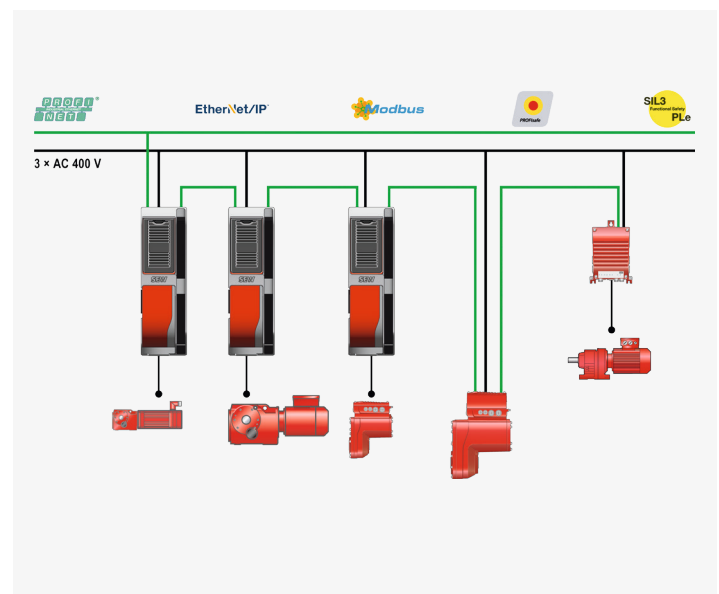
- Synchronous motor (IE5) with integrated inverter



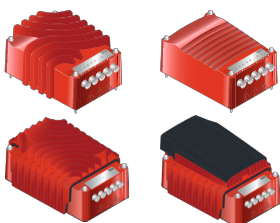
### MOVIGEAR<sup>®</sup> performance

- Gearmotor with integrated inverter
- Highly efficient (exceeds IE5 and IES2)

## TOPOLOGY



## MOVI-C<sup>®</sup> DECENTRALIZED ELECTRONICS / TECHNICAL DATA



### Assigned motor power range

- ASM: 0.37 kW – 7.5 kW
- PMM: 0.8 kW – approx. 5.0 kW

### Line voltage and frequency

- 3 × AC 380 V – 500 V
- 50/60 Hz

### Continuous output current

100% at f = 0 Hz

### Degree of protection

IP65 standard

### Type of cooling

Convection cooling without fan up to 4.0 kW

### Ambient temperature

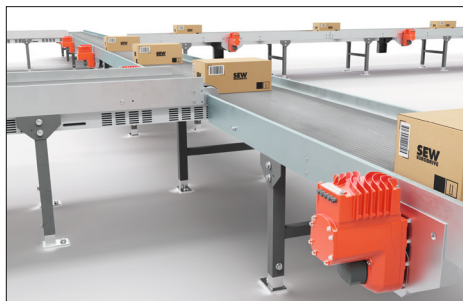
–25 °C to 40 °C without derating  
40 °C to 60 °C with derating



# MOVIGEAR® performance drive unit

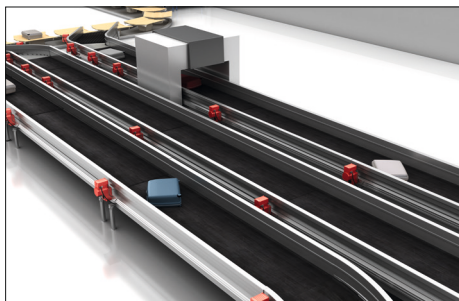


## POSSIBLE USES / TYPICAL APPLICATIONS



### Parcel logistics / conveying

- Transporting and identifying
- Sorting and distributing
- Loading and unloading



### Airports / baggage handling

- Transporting baggage
- Sorting and distributing
- Accumulating and buffering



### Bottling / food processing

- Bottle transportation
- Secondary packaging
- Raw materials feed

## THE ADVANTAGES AT A GLANCE



### Compact!

Nominal power of 0.8 – 2.1 kW and peak power of up to 6.3 kW, fully integrated, and up to 50% lighter than conventional drive solutions.



### Universal!

The number of variants is reduced thanks to optimal dimensioning based on a large speed range and an impressive overload capacity of up to 300% for the nominal torque.



### Efficient!

Motor energy efficiency class IE5 to IEC TS 60034-30-2 and system power loss up to 50% lower than IES2 according to IEC 61800-9-2.



### Low noise!

Some 75% quieter than typical AC motors and hygienic convection cooling without fan.

## OVERVIEW OF THE TECHNOLOGY

	Series/design		
	MGF..2-C	MGF..4-C	MGF..4-C/XT
Weight kg	16	26	28
Torque class Nm	200	400	400
Nominal power kW	0.8	1.5	2.1
Output speed range min <sup>-1</sup>	0.9 – 593	0.9 – 566	0.9 – 566
Connection voltage V	380 – 500 V at 50/60 Hz	380 – 500 V at 50/60 Hz	400 – 500 V at 50/60 Hz
Diameter of hollow shafts mm	20 / 25 / 30 / 35 / 40	30 / 35 / 40	30 / 35 / 40

### MOVIGEAR® performance Sizes



**Communication variants:**  
PROFINET, EtherNet/IP™, Modbus TCP, POWERLINK, EtherCAT®/SBus<sup>PLUS</sup>, AS-Interface, binary control



**Shaft design:**  
TorqLOC® hollow shaft with key



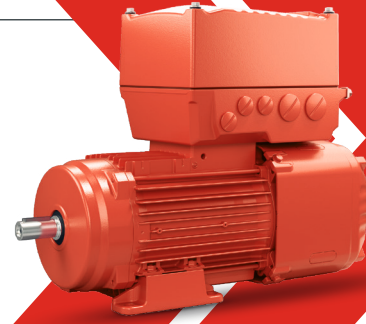
**Degree of protection:**  
IP65 standard

### Wet-area designs for different environments

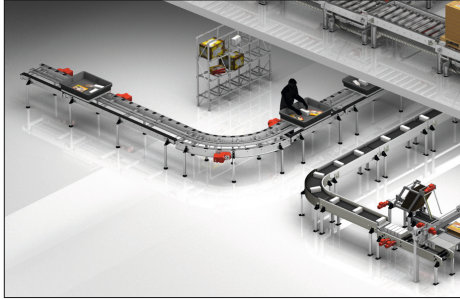


**New surface protection:**  
– High resistance to chemicals  
– Degree of protection up to IP66/IP69

# MOVIMOT® advanced drive unit



## POSSIBLE USES / TYPICAL APPLICATIONS



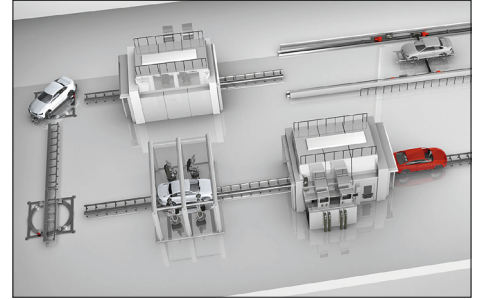
### Conveyor technology / logistics

- Roller conveyors
- Chain conveyors
- Belt conveyors



### Materials handling

- Conveyor units
- Lifting modules
- Rotary tables



### Production technology

- Skid conveyors
- Rotary units
- Lifting/lowering conveyors

## THE ADVANTAGES AT A GLANCE



### Scalable!

Drives with nominal power values in a range of 0.37 kW to 7.5 kW are available. Mechanical brakes and/or an adapted maintenance switch are optionally available.



### Flexible!

Can be combined with all standard gear units in SEW-EURODRIVE's modular system. The ability to withstand even harsh ambient conditions enables universal use in different sectors of industry.



### Versatile!

Advanced sensorless open-loop control and an optional single-turn encoder pave the way for reliable solutions in numerous applications.



### Cost-effective!

Optional industrial plug connector for easy, time-saving installation. The innovative Premium Sine Seal oil seal reduces wear in the drive unit and increases its expected service life.

## OVERVIEW OF THE TECHNOLOGY

Supported motor sizes		DRN 71M	DRN 80MK	DRN 80M	DRN 90S	DRN 90L	DRN 100LS	DRN 100L	DRN 112M	DRN 132S	DRN 132M
Nominal power of drive kW	Star connection	0.37	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5
	Delta connection	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5	–
Nominal torque of stand-alone motor Nm	Star connection	2.5	3.7	5.1	7.5	10.2	15.0	19.7	26.3	36.2	49.4
	Delta connection	1.8	2.5	3.6	4.9	7.2	9.9	13.2	18.1	24.7	–
Speed setting range	Star connection	1:10 (without encoder)   1:1400 (with EI8Z)									
	Delta connection	1:20 (without encoder)   1:2900 (with EI8Z)									

MOVIMOT® advanced enables an overload of up to 210% for a short time.

## MOVIMOT® advanced

### 1 Asynchronous motor

Energy-efficient asynchronous motor from the DRN.. series

### 3 Connection unit

For cable glands and optional plug connector

### 5 NEW – CSL51A option

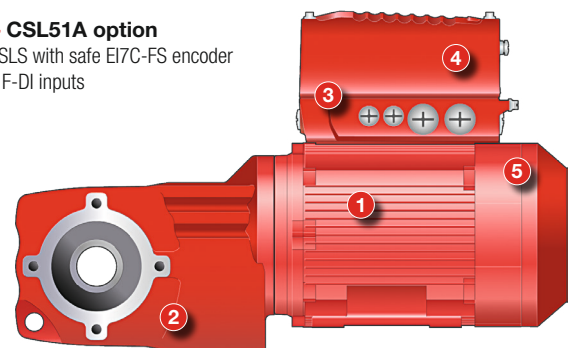
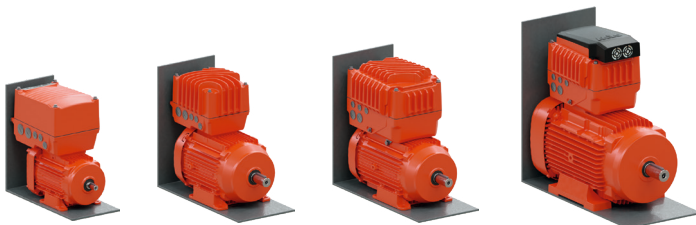
Enables SLS with safe EI7C-FS encoder and four F-DI inputs

### 2 Optional gear unit

Can be combined with gear unit series 7 or 9

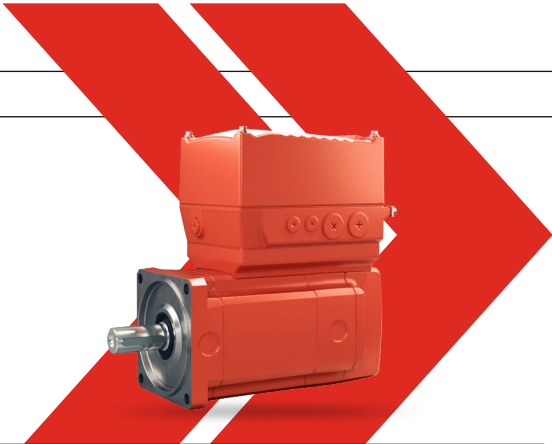
### 4 Drive inverter

Decentralized inverter with communication interface

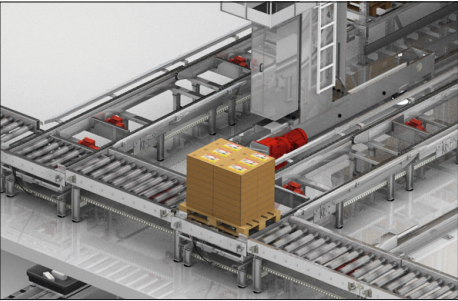




# MOVIMOT® performance drive unit

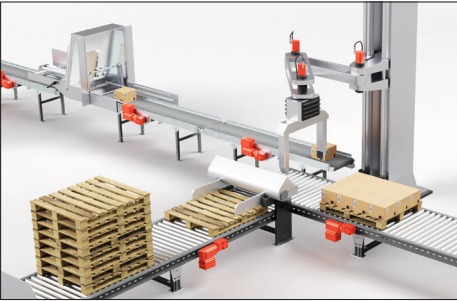


## POSSIBLE USES / TYPICAL APPLICATIONS



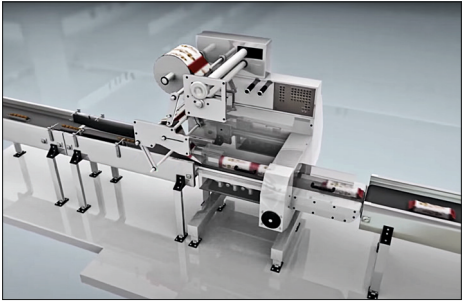
**Conveying/sorting**

- Corner transfer units
- Sorter belts
- Positioning units



**Materials handling**

- Conveyor units
- Lifting modules
- Rotary tables



**Packaging technology**

- Winders
- Clock synchronizers
- Positioners

## THE ADVANTAGES AT A GLANCE



**High overload capacity!**  
An overload capacity of up to 300% optimizes the drive's capacity utilization and reduces the nominal connected load.



**Environmentally friendly!**  
Low-noise operation without fan plus a motor energy efficiency class  $\geq$  IE4 to IEC TS 60034-30-2.



**Precise!**  
Highly dynamic, with a large speed range and optional positioning using a multi-turn absolute encoder.



**Cost-effective!**  
Direct wiring via terminals or quick and easy installation using optional plug connectors and the MOVILINK® DDI digital interface.

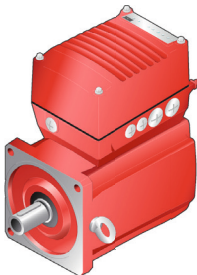
## OVERVIEW OF THE TECHNOLOGY

MOVIMOT® performance	CM3C80S 0020	CM3C80S 0025	CM3C80S 0032	CM3C80S 0040	CM3C80M 0040	CM3C80M 0055	CM3C100M 0070	CM3C100M 0095
Inverter assignment A	2.0	2.5	3.2	4.0	4.0	5.5	7.0	9.5
Nominal torque Nm	3.6	4.5	5.7	7.2	8.0	9.0	15	20
Nominal speed min <sup>-1</sup>	2000	2000	2000	2000	2000	2000	2000	2000
Nominal power kW	0.75	0.94	1.19	1.51	1.68	1.88	3	4
Overload capacity %	300	300	300	300	300	300	300	300
Speed setting range	1:40 (without encoder)   1:2000 (with EZ2Z/AZ2Z)							
Motor efficiency	$\geq$ IE5							

MOVIMOT® performance	
Motor power range	0.75 kW to 4 kW
Line voltage	3 × AC 380 V – 500 V
Line frequency	50/60 Hz
Continuous output current	100% at f = 0 Hz
Degree of protection	IP65 without fan
Ambient temperature	-25 °C to 40 °C without derating 40 °C to 60 °C with derating

**Permanent magnet motor**

Robust and energy-efficient synchronous motor from the CM3C.. series



**Drive inverter**

 **EtherNet/IP**   
 **EtherCAT**   
Binary control

**Connection unit**

# MOVIMOT® performance ELV compact extra-low voltage drive

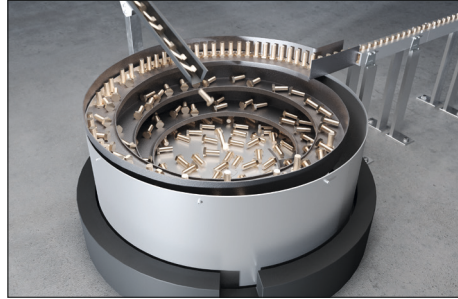


## POSSIBLE USES / TYPICAL APPLICATIONS



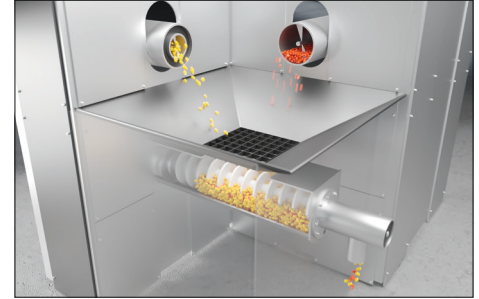
### Transporting lightweight packaged goods

- Stationary conveyor systems
- Shuttles running on rails
- Mobile logistics vehicles



### Handling small parts

- Aligning and positioning
- Separating and grouping
- Distributing and sorting



### Automating processes

- Adjusting (hatches, doors, cabinets)
- Metering (fillers, mixers)
- Setting (formats, level control)

## THE ADVANTAGES AT A GLANCE



### High-performance!

- Industrial Ethernet interface
- Data exchange using standard profiles
- Full functional connectivity



### Efficient!

- High efficiency
- Energy exchange in the DC network
- Control with minimal system vibrations, wear, etc.



### Compact!

- Sustainable design
- Small installed size
- Low weight



### Simple!

- Minimal installation work
- Fast startup (MOVILINK®)
- Complete engineering solution (MOVISUITE®)

## OVERVIEW OF THE TECHNOLOGY

### Rated data

- Power rating 180 – 356 W at 4000 min<sup>-1</sup>
- DC 48 V voltage supply (DC 22 V – 59 V)

### Functions

- Signal/power electronics, brake control, DDI position encoder, digital I/O interface, Ethernet fieldbus, CFC closed loop system
- Operating modes: torque, speed, positioning

### Options

- Holding brake, absolute encoder, Safe Torque Off HW (STO, PL d), MOVIKIT® software modules

### Other features

- High short-term overload capacity for optimized dimensioning of gearmotors with very compact mounting positions
- MOVISUITE® engineering software for comprehensive planning, startup, and analysis
- Wide range of automation applications:
  - Available in various supply topologies – traditionally with stationary DC 48 V current supplies, or also with battery and energy modules
  - In networks with central or distributed controllers via Ethernet or wireless communication



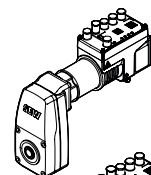
SBus<sup>PLUS</sup>



EtherNet/IP®

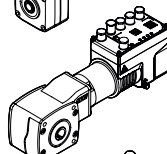


DCA63S	DCA63M	DCA63L
180 W	272 W	356 W
0.43 Nm	0.65 Nm	0.85 Nm
4000 min <sup>-1</sup>	4000 min <sup>-1</sup>	4000 min <sup>-1</sup>
2.05 kg	2.35 kg	2.65 kg



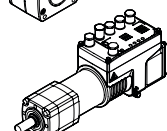
### F.02/F.03 parallel-shaft helical gear unit

- 2 sizes, 3-stage, solid shaft or hollow shaft
- 5 reduction ratios,  $i = 6 - 48$



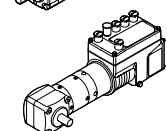
### SPIROPLAN® W.02/W.03 right-angle gear unit

- 2 sizes, 1-stage, solid shaft or hollow shaft
- 5 reduction ratios,  $i = 6 - 48$



### PNZ63A planetary gear unit

- 1- or 2-stage
- 3 reduction ratios,  $i = 5 / 15 / 45$

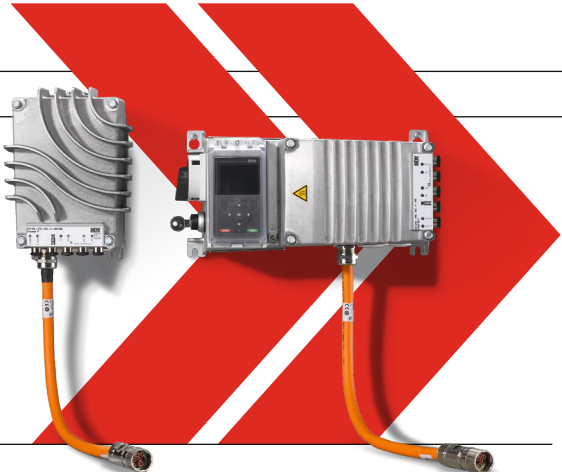


### KNZ63A right-angle gear unit

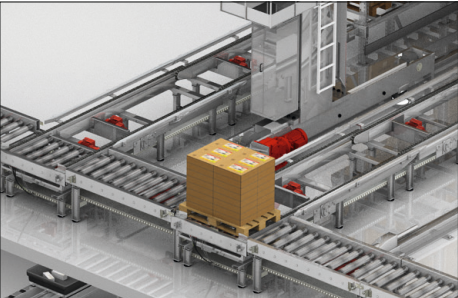
- 2- or 3-stage
- 3 reduction ratios,  $i = 17 / 54 / 84.8$



# MOVIMOT® flexible decentralized inverter



## POSSIBLE USES / TYPICAL APPLICATIONS



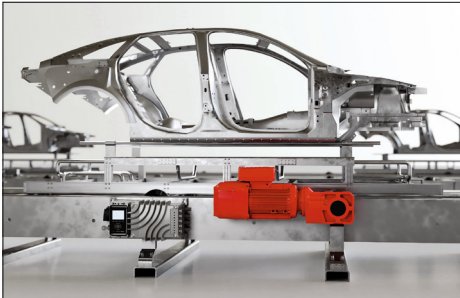
**Conveyor systems / intralogistics**

- Horizontal conveyor units
- Lifting modules
- Rotary tables



**Food and beverage production**

- Bottle transportation
- Container conveyors
- Stacking units



**Automotive industry / production technology**

- Skid conveyors
- Lifting/lowering conveyors
- Rotary modules

## THE ADVANTAGES AT A GLANCE

**Versatile!**  
All types of synchronous and asynchronous motors can be controlled. Optional motor encoders or mechanical brakes can be adapted.

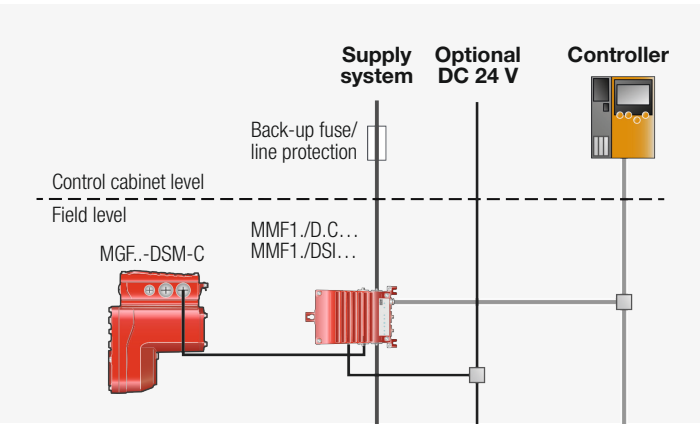
**Intelligent!**  
Information from the electronic nameplate, braking data, and diagnostic data are transmitted directly to the inverter.

**Simple!**  
The intelligent, digital connection using a standardized hybrid cable makes it possible to supply power and also transmit data between the decentralized inverter and motor.

**Safe!**  
Integrated STO (Safe Torque Off) safety function to PL e. Binary control or option of control via PROFINET®/PROFIsafe.

## OVERVIEW OF THE TECHNOLOGY

MOVIMOT® flexible is available in two versions. As an extension to MMF11, the MMF31/MMF32 version can be fitted with additional options. These include a load disconnecter (with or without integrated line protection), an M12 engineering interface, and preparation for mounting an operator panel. A key switch with feedback contact can also be integrated.



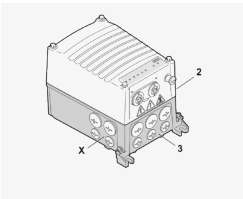
## SIZE AND NOMINAL OUTPUT CURRENT

Nominal output current	Type designation	Size	
2.0 A	D.C/DSI..-0020..	Size 1 without cooling fins	
2.5 A	D.C/DSI..-0025..		
3.2 A	D.C/DSI..-0032..		
4.0 A	D.C/DSI..-0040..	Size 1 with cooling fins	
5.5 A	D.C/DSI..-0055..		
7.0 A	D.C/DSI..-0070..	Size 2 without fan*	
9.5 A	D.C/DSI..-0095..		
12.5 A	D.C/DSI..-0125..	Size 2 with fan*	
16.0 A	D.C/DSI..-0160..		

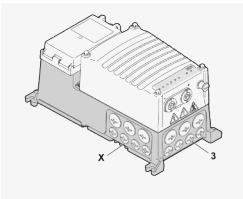
\* Size 2 is only possible in combination with MMF32.

Binary control

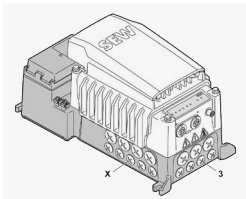
**MMF11:**  
Position  
X + 2 + 3



**MMF31:**  
Position  
X + 3



**MMF32:**  
Position  
X + 3



# MOVIPRO® technology decentralized inverter



## POSSIBLE USES / TYPICAL APPLICATIONS



### Pallet transfer shuttles

- Intralogistics
- Sorting
- Distributing



### Scissor lift tables

- Chassis lifting units
- Tool lifting units
- Lifting units for loading



### Lifting devices and vertical lifts

- Automotive lifters
- EMS solutions
- Warehouse systems

## THE ADVANTAGES AT A GLANCE



### Powerful!

- Nominal power of up to 30 kW
- Handles tasks efficiently



### Scalable and safe!

- Customized solutions for safe stop, motion, and positioning functions
- Optional safe brake control



### Consistent!

- Platform identical to control cabinet technology for seamless integration



### Flexible!

- A variety of motor technologies and encoders can be connected
- Wide range of potential applications

## OVERVIEW OF THE TECHNOLOGY

- Available in four sizes and nine power classes
- Operating synchronous and asynchronous motors, 200% overload capacity
- MOVILINK® DDI motor interface or evaluation of standard motor encoders (sin/cos, TTL/HTL, HIPERFACE®, RS422)
- Distance encoder evaluation for all standard external encoder systems (EnDat 2.1, SSI, sin/cos, TTL/HTL, HIPERFACE®, RS422, CANopen)
- Integrated STO (Safe Torque Off), PL e to EN ISO 13849-1:2015
- Safety options (/S..) for secure communication, secure digital inputs/outputs, safe motion functions, safe positioning, and safe brake control
- Communication interfaces:  
DFC: PROFINET, EtherNet/IP™, Modbus TCP  
DSI: Direct System Bus Installation (EtherCAT®/SBus<sup>PLUS</sup>, EtherCAT®/CiA 402)



	MPX22A..		MPX23A..	
Size	Size 2 Short heat sink	Size 2E Long heat sink	Size 3 Heat sink without active cooling	Size 3E Heat sink with active cooling
Nominal output current A	5.5 / 7 / 9.5	12.5 / 16	24 / 32	46 / 62
Performance class kW	2.2 / 3 / 4	5.5 / 7.5	11 / 15	22 / 30
Dimensions W × H × D (mm) without interface box	480 × 300 × 162	480 × 300 × 202	570 × 420 × 202	570 × 420 × 209
Dimensions W × H × D (mm) with interface box	620 × 364 × 180	620 × 364 × 220	720 × 420 × 220	720 × 420 × 227



### 3 Control cabinet inverters

MOVITRAC® basic	17
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MOVI-PLC® I/O system C	27
MOVITRAC® LTE-B <sup>+</sup>	28
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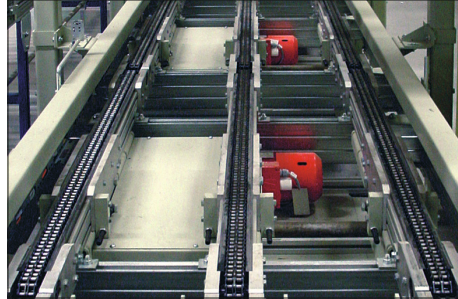
# MOVITRAC® basic inverter



## POSSIBLE USES / TYPICAL APPLICATIONS



Chain conveyors and roller conveyors



Conveyor belts



Agitators

## THE ADVANTAGES AT A GLANCE



### Compact!

Exceptionally compact size and dimensions (just 56 mm wide), saving space in the control cabinet.



### Easy to use!

Straightforward startup without an engineering tool thanks to MOVIKIT® Drive software modules.



### Simple product selection!

Minimal number of variants and straightforward.



### Cost-optimized!

An optimized price-performance ratio for the simplest of materials handling applications.

## OVERVIEW OF THE TECHNOLOGY

Unpack, assemble, install, specify the speed setpoint, and that's it – the motor is up and running!

MOVITRAC® basic has been designed and developed as the easy way to control speed.

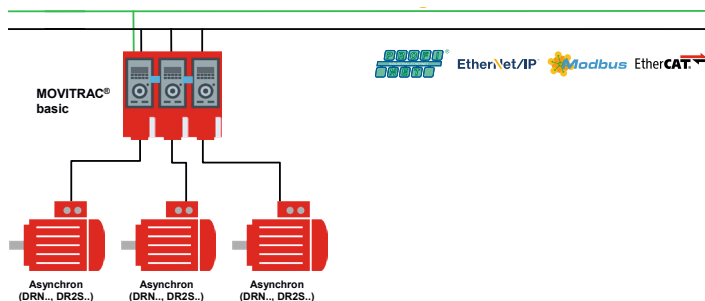
MOVITRAC® basic is a highly compact inverter that has been optimized to control the speed of AC asynchronous motors. MOVIKIT® Velocity Drive simplifies startup and diagnostics. Optional keypads from the MOVI-C® modular automation system are also available for these operations.

### Target applications

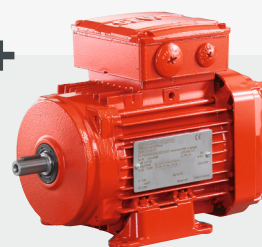
- Continuous, non-dynamic adjustable-speed applications
- Horizontal materials handling applications

### Variants

- 1 × AC 200 V – 240 V
  - 0.55 kW at 230 V (3.4 A) without fan
  - 0.75 kW at 230 V (4.2 A) with fan
- 3 × AC 200 V – 500 V
  - 0.75 kW at 400 V (2.5 A) without fan
  - 1.50 kW at 400 V (4.0 A) with fan



- Top**
  - Line connection (plug-in terminals)
- Front**
  - Optional keypad
  - Status LEDs
  - Binary and analog inputs/outputs  
Brake control via relay contact  
Motor temperature sensor (TH, TF)
- Bottom**
  - IoT product label (QR code)
  - Motor connection (plug-in terminals)
  - Mounting point for shield plate



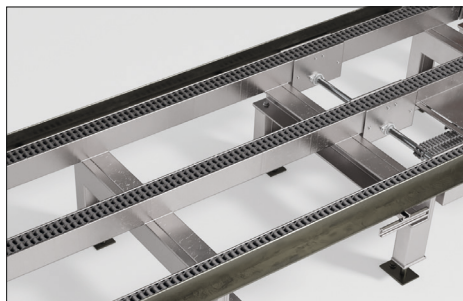
Speed control – open loop



# MOVITRAC® advanced standard inverter



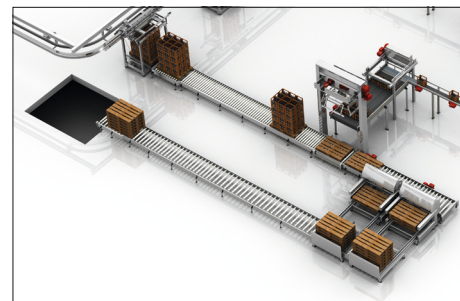
## POSSIBLE USES / TYPICAL APPLICATIONS



Materials handling technology



Vertical drives



Palletizers

## THE ADVANTAGES AT A GLANCE



### Saves time!

Quick and easy startup thanks to the electronic nameplate and the use of pre-configured MOVIKIT® software modules.



### Simple!

Quick and easy unit replacement during servicing, without an engineering PC, thanks to a portable memory module for storing all device data.



### Open solution!

Connection to standard control systems thanks to various fieldbus protocols and the CiA402 drive profile being supported.



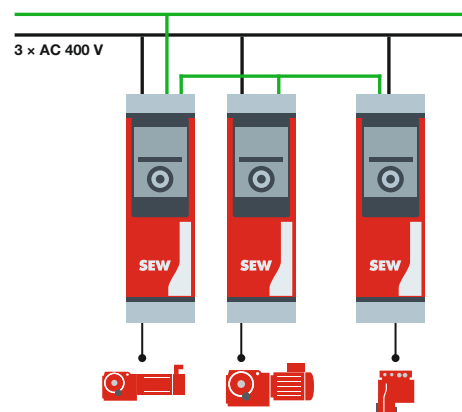
### Flexible!

Configurable functional safety – from integrated STO safety function to higher-level safety functions and safe communication.

## OVERVIEW OF THE TECHNOLOGY

MOVITRAC® advanced standard inverter		
Technical data	Nominal voltage V	1 × AC 200 – 240 3 × AC 200 – 240 3 × AC 380 – 500
	Nominal power kW	0.25 – 315
	Overload capacity	150%
Control mode	<b>Controlling and monitoring of:</b> <ul style="list-style-type: none"> <li>– Synchronous and asynchronous AC motors with/without an HTL encoder, with evaluation possible via digital inputs</li> <li>– Asynchronous motors with LSPM technology</li> <li>– Synchronous and asynchronous linear motors</li> </ul>	
Communication interface	Integrated communication interface – choose from PROFINET, EtherNet/IP™, Modbus TCP, EtherCAT®/SBUSPLUS, EtherCAT® CiA402, and POWERLINK CiA402	
Functional safety	<ul style="list-style-type: none"> <li>– STO (safe torque off) to PL d integrated into the basic unit</li> <li>– Other safety functions configurable – such as SBC, SDI, or SLS</li> <li>– Safe communication configurable via PROFIsafe/PROFINET, Safety over EtherCAT®, and CIP Safety™</li> </ul>	
Additional features and equipment	<ul style="list-style-type: none"> <li>– Configurable MOVILINK® DDI digital data interface</li> <li>– State-of-the-art control modes: U/f, VFC<sup>PLUS</sup>, ELSM®, and CFC</li> <li>– Control of torque, rotational speed, and position</li> <li>– Startup via plug-in and scalable keypads or MOVISUITE® engineering software</li> <li>– Simple startup using MOVIKIT® software modules</li> <li>– Portable memory module for easy unit replacement without engineering software</li> </ul>	

## MOVITRAC® advanced









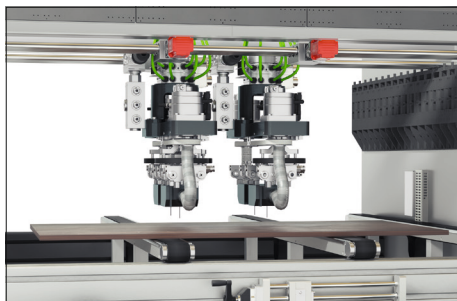
# MOVIDRIVE® technology application inverter



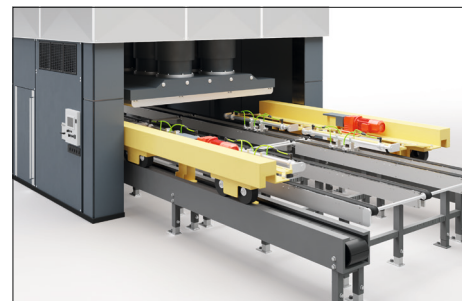
## POSSIBLE USES / TYPICAL APPLICATIONS



Vertical drives



Saw applications



Presses

## THE ADVANTAGES AT A GLANCE



### Saves time!

Quick and easy startup thanks to the electronic nameplate and the use of preconfigured MOVIKIT® software modules.



### Cuts costs!

Saves on operating costs thanks to regenerative power supply units and energy-saving functions available as standard for partial-load operation and standby mode.



### Open solution!

Supports various fieldbus protocols, enabling connection to standard control systems.

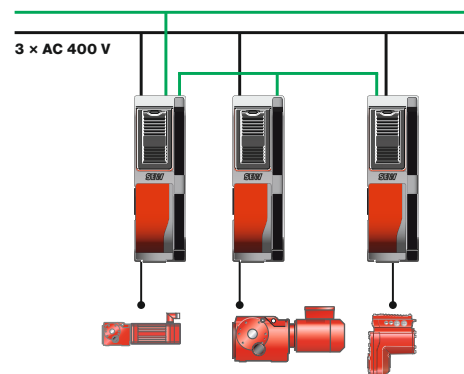


### Flexible safety!

Scalable functional safety, from the STO function integrated as standard right through to option cards that can be inserted retrospectively for additional safety functions and safe communication.

## OVERVIEW OF THE TECHNOLOGY

MOVIDRIVE® technology application inverter		
Technical data	Nominal line voltage V	3 × AC 200 – 240 3 × AC 380 – 500
	Nominal power kW	0.55 – 315
	Overload capacity	200%
Control mode	Controlling and monitoring of: <ul style="list-style-type: none"> <li>– Synchronous and asynchronous AC motors with/without encoder</li> <li>– Asynchronous motors with LSPM technology</li> <li>– Synchronous and asynchronous linear motors</li> </ul>	
Communication interface	<ul style="list-style-type: none"> <li>– Flexible fieldbus connection via plug-in option cards – choose from PROFINET, EtherNet/IP™, Modbus TCP, PROFIBUS, and POWERLINK CiA402</li> <li>– EtherCAT®/SBus<sup>PLUS</sup> integrated into the basic unit</li> </ul>	
Functional safety	<ul style="list-style-type: none"> <li>– STO (safe torque off) to PL e integrated into the basic unit</li> <li>– Higher-level safety functions available as options, e.g. SBC, SLS, or SLP</li> <li>– Safe communication via PROFIsafe/PROFINET and Safety over EtherCAT®</li> </ul>	
Additional features and equipment	<ul style="list-style-type: none"> <li>– Multi-encoder input integrated into the basic unit</li> <li>– MOVILINK® DDI digital data interface integrated into the basic unit</li> <li>– Control of torque, rotational speed, and position</li> <li>– DC link connection for connecting to DC or regenerative power supply</li> <li>– Startup via plug-in keypads or MOVISUITE® engineering software</li> <li>– Simple startup using MOVIKIT® software modules</li> </ul>	





# MDR90/91B regenerative power supply

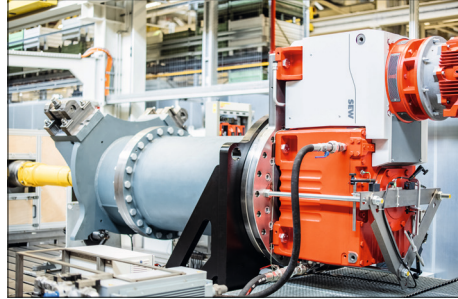


## POSSIBLE USES / TYPICAL APPLICATIONS



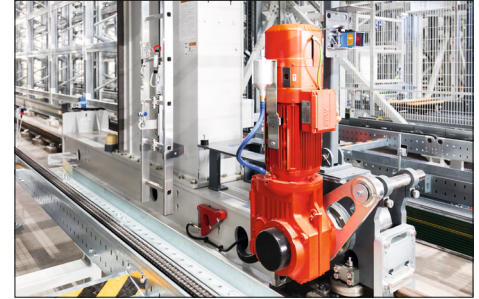
### High amounts of regenerative energy

For example, in crane systems with a long lowering distance. The reduction and recovery of braking energy cuts energy costs and CO<sub>2</sub> emissions.



### Test stands with loading machines

Elimination of braking resistance in critical applications, resulting in less waste heat and potentially making control cabinet air conditioning superfluous.



### Energy consumption of storage/retrieval systems

Approximately 30% lower energy consumption.

No waste heat caused by braking resistance. No additional costs resulting from heat dissipation in cold stores.

## THE ADVANTAGES AT A GLANCE



### Support at all stages!

Full support from project planning to the finished system. Benefit from our expertise and experience.



### Fast installation!

Modular design and small number of components. Easy mechanical and electrical integration into the application.



### Easy startup!

Ready-made MOVIKIT® software modules ensure your application is up and running in just a few minutes.

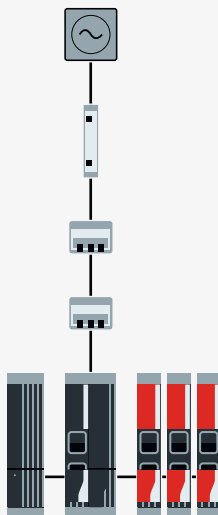


### Holistic concept!

Sinusoidal and block-type energy recovery with various power ratings. Adapted filters and chokes for a minimal grid load.

## OVERVIEW OF THE TECHNOLOGY

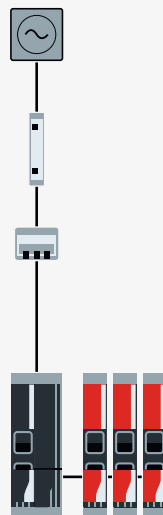
### MDR90B sinusoidal regenerative power supply



#### Benefits:

- High DC link voltage of DC 750 – 800 V, resulting in higher motor speeds and greater motor utilization
- Low THD (total harmonic distortion), which rules out any interference with sensitive equipment

### MDR91B block-shaped regenerative power supply



#### Benefits:

- Small number of components (compact)
- High overload, even in the case of long power cables
- Inexpensive

The MOVIDRIVE® MDR regenerative power supply serves as a centralized supply and regenerative module for the connected inverters.

#### General technical features:

- Sinusoidal and block-type energy recovery available
- Full line voltage range of 3 × AC 380 – 500 V
- Available with a nominal power of 50 kW or 75 kW
- Components benefit from long-term availability
- /L partially coated design available
- New DC link tuning – very long power cables possible
- EtherCAT®/SBus<sup>PLUS</sup> connections in the basic unit
- Potential savings of 20 to 35%

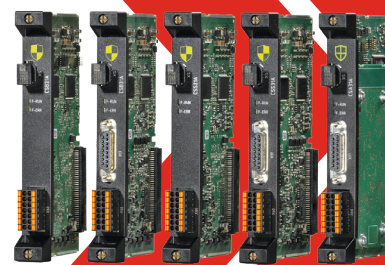
#### MOVIKIT® software modules for the PLC

- Control via ready-made MOVIKIT® software modules
- Automatic incorporation into the IEC code
- Predefined fieldbus interface if necessary
- Diagnostics and control monitor
- Data storage on the PLC
- Can be integrated into the EtherCAT® fieldbus

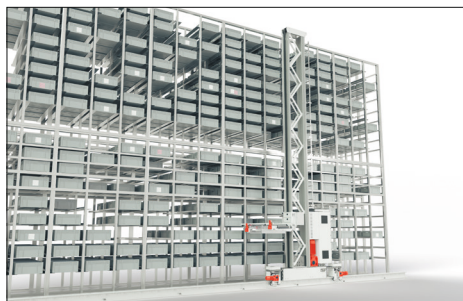
#### Comprehensive energy flow and device status diagnostics

- Active power display
- Energy meter for motoring operation
- Energy meter for regenerative operation
- Integrated scope
- Internal fault memory

# MOVISAFE® CSA31A safety card for MOVIDRIVE®



## POSSIBLE USES / TYPICAL APPLICATIONS



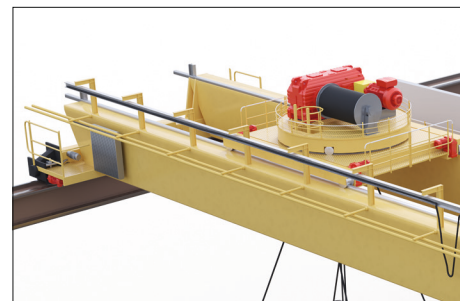
### Storage/retrieval systems

Pallet transfer shuttles and multi-level shuttles (especially systems with safety-related slip compensation)



### Vertical drives

Scissor lift tables, rotary drums



### Indoor, port, and construction cranes

From a single gantry to a five-axis gantry involving a tool change

## THE ADVANTAGES AT A GLANCE



### Flexible!

Supports all kinds of encoder concepts – from the simplest sin/cos encoder and in combination with a huge variety of distance encoders.



### User-friendly!

Simple startup and parameterization using the startup wizard. The parameters can be taken over from the inverter in the safety section.



### Consistent!

Parameterization is identical for all safety cards, with all parameters working in the same way and having the same meaning.



### Easy maintenance!

The safety key helps ensure quick and easy replacement of the safety card without a PC.

## OVERVIEW OF THE TECHNOLOGY (NEW)

Hardware	CSB21A	CSB31A	CSS21A	CSS31A	CSA31A (NEW)
Safe inputs	4	4	4	4	4
Safe outputs	–	2	2	2	2
Safe stop functions	STO, SS1-t	STO, SS1-t, SBC	STO, SS1-t, SBC	STO, SS1-t, SBC	STO, SS1-t, SBC
Safe motion functions	–	–	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM,SDI	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM,SDI	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM,SDI
Safe position functions	–	–	SLI	SLI	SLI, SLP, SCA
Safe communication	PROFIsafe, Safety over EtherCAT®, CIP Safety™	PROFIsafe, Safety over EtherCAT®, CIP Safety™	PROFIsafe, Safety over EtherCAT®, CIP Safety™	PROFIsafe, Safety over EtherCAT®, CIP Safety™	PROFIsafe, Safety over EtherCAT®, CIP Safety™
Process value via safe communication	–	–	Speed	Speed	Speed, position, SCA status
Additional multi-encoder input	–	Yes (not for safety)	–	Yes (not for safety)	Yes (including for safety)
Encoder for functional safety	–	–	FS motor encoder	FS motor encoder	FS motor encoder, sin/cos, SSI

The new MOVISAFE® CSA31A safety card, which is available starting from MOVISUITE® Version 2.20, significantly increases the number of functions and thus the flexibility of the MOVI-C® safety portfolio. It makes it possible to achieve more complex functions, such as safe speed and safe position from all kinds of encoder combinations (e.g. motor and distance encoders), while maintaining the same level of user-friendliness. Based on the principle of parameterization instead of programming, even the most complex safety function can be started up quickly and easily, thanks to straightforward parameterization in MOVISUITE®. Safe communication profiles

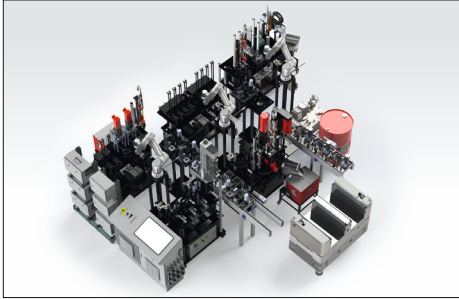
such as PROFIsafe, CIP Safety™, or Safety over EtherCAT® can be used to easily activate/implement safety functions, including STO, SS1, SLS, and SLP up to PL e.

Even in the case of systems subject to slip, mechanical engineers will find fast and simple solutions to challenging safety problems and be able to ensure rapid on-site startup for the end customer. The CSA31A complements the existing safety card portfolio for inverters from the MOVI-C® modular automation system. SEW-EURODRIVE offers a customized solution for every application, whether the safety technology involved is straightforward or highly complex.

# MOVI-C® CONTROLLER UHX65A-M-0x control technology



## POSSIBLE USES / TYPICAL APPLICATIONS



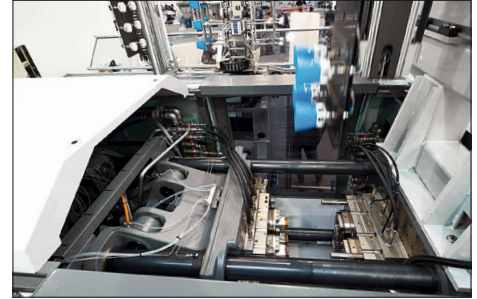
### Higher-level controller for complex systems

Systems with a large variety of sensors and actuators, e.g. for gear unit assembly.



### Higher-level controller and motion controller combined

Process and motion control for complex machines – up to 16 interpolated SEW-EURODRIVE axes.



### Motion controller for software modules

High-performance motion control for software modules with SEW-EURODRIVE axes (modularization of complex systems).

## THE ADVANTAGES AT A GLANCE



### Multimaster-capable and flexible!

Implementation of mixed topologies – EtherCAT® with PROFINET IO or EtherNet/IP™ – in one device.



### Scalable and accomplished!

Available in 1-, 2-, and 4-core variants for sophisticated applications. Higher-level controller and motion controller combined in one device.



### Open!

Windows / higher-level language environment and high-performance motion controller in one (4-core variant). EtherCAT® and PROFINET IO/EtherNet/IP™ sensors in parallel.



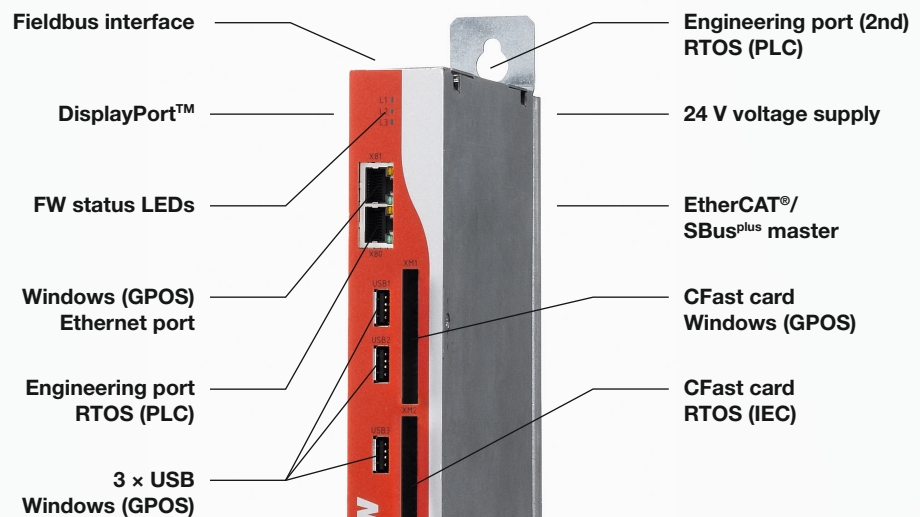
### Customized!

Perfectly coordinated with the extensive portfolio for decentralized and control cabinet drive technology, making it possible to implement any specific customer requests.

## OVERVIEW OF THE TECHNOLOGY

With the MOVI-C® CONTROLLER UHX65A-M, SEW-EURODRIVE has enhanced its versatile "progressive" performance class controller by integrating PROFINET IO controller or EtherNet/IP™ scanner functionality. Sophisticated mixed topologies can be implemented from MOVISUITE® Version 2.20 onward – use the high-performance EtherCAT® fieldbus for the most challenging motion control tasks and, at the same time, read corresponding sensors and control actuators as a PROFINET IO or EtherNet/IP™ master. Benefit from greater flexibility and more choice when it comes to the hardware you can use for complex applications, without losing the existing advantages of the UHX65A platform, such as user-friendly, fast startup via MOVISUITE®.

## MOVI-C® CONTROLLER UHX65A (PROGRESSIVE)



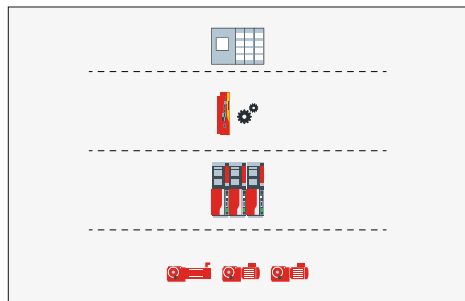


# MOVI-C® CONTROLLER

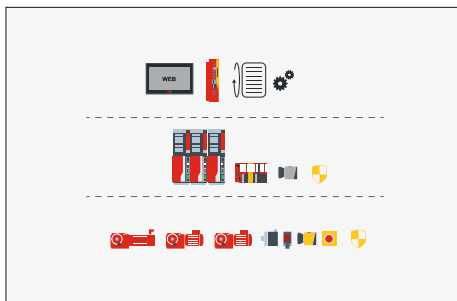
## type UHX86A



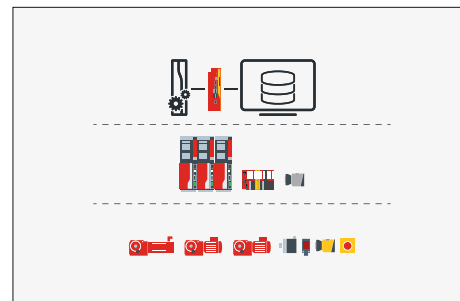
### POSSIBLE USES / TYPICAL APPLICATIONS



**1. Suitable for motion control tasks**



**2. Suitable for automation control tasks**



**3. Suitable for cyber-physical control tasks**

### THE ADVANTAGES AT A GLANCE



#### Networked!

High-grade, application-specific networking, both at fieldbus level and through the multi-purpose operating system.



#### User-friendly!

An end-to-end engineering environment for programming the process sequence via transparent PROFIsafe routing. CFast™ card for rapid replacement of devices without a PC.



#### Robust and high-performance!

Less hardware means less potential for failure – one top-quality device made by SEW-EURODRIVE that combines IPC and PLC.



#### Scalable!

Processor and hard disk scalable for IoT applications. Prepared for future integrated function modules.

### OVERVIEW OF THE TECHNOLOGY

MOVI-C® CONTROLLER type UHX86A units expand the MOVI-C® modular automation system's controller portfolio at the top end of the performance range. They have a large number of multi-purpose interfaces and support all standard fieldbus protocols for both upstream and downstream bus stations. What's more, this type of controller takes a hybrid approach, meaning it can run a real-time and a multi-purpose operating system independently of each other and in parallel using hypervisor technology.

As a result, besides being ideal for use as a motion controller or for machine control, it can also be used as a cyber-physical controller (CPC) or for Industry 4.0 applications. A wide range of applications can now be reliably covered by a single device, without making any compromises in terms of security, industrial capability, or user-friendliness.

- Hypervisor environment – multi-purpose and real-time operating system on a single processor
- EtherCAT® (SBus<sup>PLUS</sup>) for rapid motion control
- High-performance processor technology – Intel® Celeron®/Core™ i3/i7 processors
- Several fieldbus variants – PROFINET IO, EtherNet/IP™, Modbus TCP
- NVRAM for persistent data storage
- Transparent PROFIsafe routing to inverters from the MOVI-C® modular automation system
- Variants with passive and active cooling
- Interchangeable storage media for rapid device replacement
- Numerous interfaces (USB, Ethernet, fieldbus)
- Robust design for stationary and mobile applications



**1. Motion control:** In this case, the controller is used for high-performance motion control based on the principle "parameterization instead of programming" – ideal for complex machines with multiple (32+) synchronized axes.

**2. Automation control:** The controller is used for controlling real-time process sequences such as those in machines, in trial automations, or in intralogistics systems.

**3. Cyber-physical control:** In this scenario, the controller is used for data-driven high-end applications requiring high-quality, application-specific networking.

# Format-changing drive system for simple format changes

## POSSIBLE USES / TYPICAL APPLICATIONS



### Form, fill, and seal machines

Particularly suitable for applications such as control tasks, film handling, dispensing technology, and winding technology



### Multipackers

Particularly suitable for applications such as control tasks and belt drives



### Gantry palletizers and palletizing robots

Particularly suitable for applications such as control tasks with or without load fluctuation

## THE ADVANTAGES AT A GLANCE



### Simple!

System consisting of preselected hardware components for easy ordering



### Fast!

Can be incorporated using function blocks based on IEC 61131-3 that are included in the scope of supply, for quick and easy integration and startup on customer premises



### Flexible!

A variety of control functions, enabling both simple format adjustments and torque-controlled applications



### Consistent!

System from a single source with coordinated hardware and software

## OVERVIEW OF THE TECHNOLOGY

The increasingly dynamic and customized market environment calls for ever more frequent changes of formats and products in machinery. Our new electromechanical format-changing drive system makes format and product changes of this kind particularly quick, easy, and resource-friendly.

### Overview of the system

The format-changing drive system consists of a stepper motor terminal, an actuator and encoder cable, and a stepper motor. All these components are available from SEW-EURODRIVE.

### Motors

The five different stepper motors cover a torque range of 1.2 – 8.5 Nm and come in the standard sizes NEMA 23 and NEMA 34, in two and three lengths respectively. All motors are coordinated with the stepper motor terminal and have an incremental encoder.

### Terminal

Available with a power rating of 5 A and a voltage range of 24 – 48 V, the terminal is perfect for incorporating into the existing MOVI-PLC® I/O system C. It can also be added to other I/Os and/or the bus coupler using profile rail assembly. Three DI and one DO are provided, too, enabling easy incorporation of components such as limit switches for referencing purposes. Integration into your system is quick and easy thanks to a preconfigured function block.

Besides extremely straightforward format adjustments, the other control modes implemented in the stepper motor terminal also offer you a cost-efficient solution for further applications. In addition to the typical open-loop control mode (with or without encoder correction), closed-loop control modes are also possible, as is a microstep mode.



# SBM safe brake module



## POSSIBLE USES / TYPICAL APPLICATIONS



### Storage/retrieval systems

Multi-level shuttles, especially systems with safety-related lifting axes



### Hoists

Vertical drives, scissor lift tables, lift tables



### Materials handling technology with changes of direction

Rotary table, carriage

## THE ADVANTAGES AT A GLANCE



### Flexible!

The SBM can be used with both three-wire and two-wire brakes. Group drives can also be controlled.



### Unique and universal!

Thanks to its unique concept, the SBM can be connected directly to the inverter's DC link and can therefore be used worldwide, regardless of voltage.



### Consistent!

The SBM is a universal solution for sizes 1 and 2 across the entire brake portfolio for synchronous and asynchronous motors. It benefits from being functionally fully integrated into the MOVI-C® modular automation system.



### Easy maintenance!

Status feedback and integrated evaluation in the inverter helps service technicians locate and rectify SBM malfunctions very quickly.

## OVERVIEW OF THE TECHNOLOGY

- Extended power range for sizes 1 and 2 – brake switching is possible with an output of up to 250 W. This covers the entire brake portfolio of the (E)DR.. modular motor system up to BE122.
- Optimized mechanical connection technology for mounting on the drive inverter's motor output, with spring clamp terminals making a daisy chain configuration possible for the  $U_2$  voltage supply.
- Extended DC nominal voltage range of up to 850 V possible, and up to DC 970 V for a short period. This means the SBM can be combined with all SEW-EURODRIVE's Power and Energy Solutions, and its block-type/sinusoidal energy recovery products.
- Bookshelf mounting is possible with the help of a mounting base. This enables cables to be routed underneath the SBM to the inverter.
- Feedback on whether the brake is released can be provided with the help of

a status bit, and evaluation in the inverter is possible. Energy measurement in the inverter limits the SBM's jog mode, which provides enhanced protection against overheating.

- The SBM is certified to PL d for the "safe disconnection of the power supply" safety function.

- The SBM is also suitable for IT networks.

- The SBM is a universal solution for the MOVI-C® modular automation system's entire brake and inverter portfolio. SEW-EURODRIVE offers custom drive solutions for all safety-related applications – from small to very large axes/brakes.

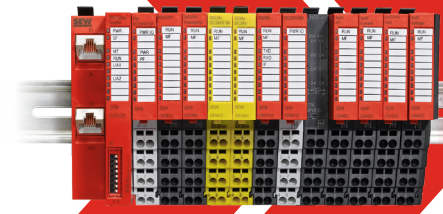


MOVITRAC® size 0L and 3 – 6		MOVIDRIVE® size 1 – 6	
Part number	Designation Size 1	Part number	Designation Size 2
2827 7201	SBM S-460-120-00	2827 7864	SBM S-460-250-00
2827 7198	SBM S-400-120-00	2827 7848	SBM S-400-250-00
2827 7171	SBM S-230-120-00	2827 7732	SBM S-230-500-00
2827 0835	Mounting base (optionally available with S variant)		
2823 2518	DIN rail adapter (optionally available with S variant)		

Motors	CMPZ71 CMPZ100 CMP112	CM3C62 CM3C100	(E)DR..56 to (E)DR..315	DR..112 to DR..180
Brakes	BY2..14	BZ05..5	BE02..11 BE20 BE30/32 BE60/62 BE120/122	BF11 BF20 BF30



# MOVI-PLC® I/O system C modules



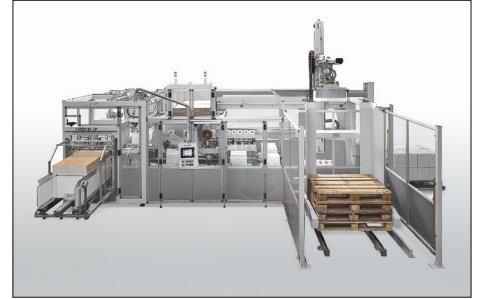
## POSSIBLE USES / TYPICAL APPLICATIONS



**Robotics applications**  
e.g. pick and place



**Machine automation**  
e.g. FFS machines, H/V FFS machines



**Palletizing systems**  
e.g. palletizers, pallet unloaders

## THE ADVANTAGES AT A GLANCE



### Consistent!

Adding safe I/O terminals and further non-safe function modules operated using the same coupler to the portfolio.



### Easy maintenance!

Easy to install and service thanks to a safe sliding mechanism for quick and extremely simple assembly.



### Space-saving!

Space-saving, stepped wiring level with spring-clamp terminal technology.



### Scalable!

With additional power supply modules – up to 64 modules possible on the backplane bus.

## OVERVIEW OF THE TECHNOLOGY

Presence monitoring / reference initiators (binary signals)	Height monitoring / distance measuring (analog signals)	Evaluating encoder signals (counter modules, SSI module)	Load cell, strain gage	Serial interfaces	Temperature measurement	Energy measurement	Hazardous point protection with hand and presence detection
ODIxxC ODOxxC	OAIxxC OAOxxC	OSM12C OSM13C OSM14C	OSM11C	ORS11C	OAI45C	OEM12C	OFI41C OF041C
Optoelectronic sensors, ultrasound sensors, inductive/capacitive sensors, laser light sensors, print mark sensors, light columns, and fluid sensors	Optoelectronic distance measuring devices, ultrasound sensors, and inertial sensors	Rotary encoders and encoders	Strain gages	Laser light sensors, optoelectronic distance measuring devices, optical identification sensors, and RFID	Pt100, Pt1000, NI100, and NI1000 temperature sensors	Three-phase grids	Safety light grid, safety scanner, safety switch, safety locking device, and emergency stop

The MOVI-PLC® I/O system C combines high performance levels and state-of-the-art functions with a sophisticated mechanical concept in one compact design. The new function modules can be used to implement a wide variety of tasks that go beyond reading in and reading out binary and analog signals. Function modules for reading SSI encoders, energy measurement modules, HTL/TTL counter modules, and modules for connecting strain gages

are available, among others. To ensure all functional safety requirements are also met, the SEW-EURODRIVE portfolio includes two Safety over EtherCAT® I/O modules, each with four safe inputs and outputs. These can be integrated into your automation solution with a third-party safety controller.

# MOVITRAC® LTE-B<sup>+</sup> frequency inverter with a high degree of protection



## POSSIBLE USES / TYPICAL APPLICATIONS



Pumps and fans



Horizontal conveying applications



Speed-controlled applications

## THE ADVANTAGES AT A GLANCE



### Compact!

All sizes have a highly compact design. The IP20 and IP66 variants work in exactly the same way.



### Easy to use!

Simple startup with or without software using the motor nameplate. No previous knowledge is required for parameterization or operation.



### Sustainable!

A cost-effective, robust, and versatile end-to-end solution.



### Integrated!

SEW gateway for connection to standard fieldbus systems.

## OVERVIEW OF THE TECHNOLOGY

A robust and simple frequency inverter, our MOVITRAC® LTE-B<sup>+</sup> with either IP20 or IP66 degree of protection is ready for field use. It is ideal for tasks in small, modular conveyor lines, in fans, and in pumps – all without the need for a control cabinet!

### Technical data

- Overload capacity of 150% for 60 s and 175% for 2 s
- IP66 housing variant with or without switch
- IT network adapted by the customer
- Speed-controlled operation of standard motor technologies
- Display, control plate, EMC filter, and engineering access always integrated



Sizes	IP20	IP66
1 × AC 110 – 115 V	0.37 – 1.1 kW	0.37 – 1.1 kW
1 × AC 200 – 240 V	0.37 – 4.0 kW	0.37 – 4.0 kW
3 × AC 200 – 240 V	1.50 – 18.5 kW	1.50 – 5.5 kW
3 × AC 380 – 480 V	0.75 – 37 kW	0.75 – 11 kW



# MOVITRAC® LTP-B frequency inverter



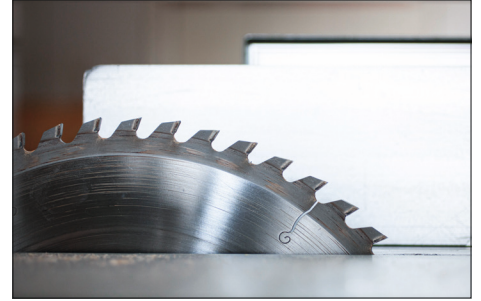
## POSSIBLE USES / TYPICAL APPLICATIONS



Pumps and fans



Conveying applications and hoists



Highly dynamic speed-controlled  
and torque-controlled applications

## THE ADVANTAGES AT A GLANCE



### Installation!

An easy process that requires less effort, with a budget-friendly IP55 housing and no control cabinet.



### Flexibility!

SEW gateway or plug-in module for connection to standard fieldbus systems.



### Startup!

Quick and easy, saving time thanks to an integrated control plate and automatic measurement of motor parameters.



### Safety!

Integrated STO PL d functional safety via a terminal.

## OVERVIEW OF THE TECHNOLOGY

MOVITRAC® LTP-B is the all-rounder for specialist field applications. Thanks to a housing with a high degree of protection, dusty and damp ambient conditions are no problem for our frequency inverters.

Easy startup of MOVITRAC® LTP-B, with or without software, is also ensured using the motor nameplate. Additional advantages include:

- Speed-controlled and torque-controlled operation of standard motor technologies
- Full-text display, control plate, EMC filter, and engineering access – always integrated
- HTL and TTL encoder evaluation for enhanced speed control
- Integrated master-slave speed control and load distribution

### Technical data

- Overload capacity of 150% for 60 s and 175% for 2 s
- All sizes have a compact design
- IP66 housing variant with or without switch
- IT network adapted by the customer



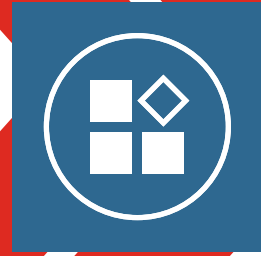
Sizes	IP20	IP66	IP55
1 × AC 200 – 240 V	0.75 – 2.2 kW	0.75 – 2.2 kW	–
3 × AC 200 – 240 V	1.50 – 11 kW	1.50 – 11 kW	5.5 – 75 kW
3 × AC 380 – 480 V	0.75 – 22 kW	0.75 – 22 kW	11 – 250 kW



## 4 Automation solution

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# MOVIKIT® software modules



## POSSIBLE USES / TYPICAL APPLICATIONS



### Decentralized solutions, e.g. transport and logistics

- Conveyor units
- Belt conveyors
- Rotary tables
- Scissor lift tables



### Modular solutions, e.g. warehouse technology

- Conveyor vehicles
- Indoor cranes
- Storage/retrieval systems
- Load handling devices



### Automation solutions, e.g. food and packaging technology

- Filling systems
- Cartoning machines
- FFS machines
- Winders

## THE ADVANTAGES AT A GLANCE



### Flexible!

Flexible browser-based access using web visualization and a web panel.



### Intuitive!

A universal engineering tool for visualization and motion applications with direct access to the controller variables.



### User-friendly!

The integration of ready-made user interface templates saves time during preparation.



### Comprehensive!

The possibilities of the modular software system range from the creation of user interfaces to the creation of complex machine visualizations.

## OVERVIEW OF THE TECHNOLOGY

MOVIKIT® software modules are preconfigured software elements for implementing motion and drive tasks. Our range includes everything from simple drive functions such as speed control and positioning through to complex motion control functions such as electronic cam and robot control. To ensure the MOVIKIT® software modules can be used in both control cabinet and decentralized installations, they are available for both controller scenarios.



### Automation-Framework



### Motion



### Robotics



### StackerCrane

- AutomationFramework: software modules with PackML compatibility
- Motion: software modules for standardized closed-loop and open-loop motion control with MOVI-C® CONTROLLER / MOVI-C® FIELD CONTROLLER
- Robotics: software modules for robot control
- StackerCrane: software modules for storage/retrieval systems



### Communication



### MultiAxisController



### Power and Energy Solutions



### Visualization

- Communication: software modules offering a variety of communication services
- MultiAxisController: software modules for centrally controlling up to four axes
- Power and Energy Solutions: software modules for energy management
- Visualization: software modules for the graphical depiction of controller data
- Drive: software modules for positioning applications without an SEW-EURODRIVE controller



### Drive



### MultiMotion



### SingleAxis

- MultiMotion: software modules for universal closed-loop and open-loop motion control of interpolating axes
- SingleAxis: software modules for speed/positioning mode

# MOVIKIT® MultiMotion, MultiMotion Gearing, MultiMotion Camming



## POSSIBLE USES / TYPICAL APPLICATIONS



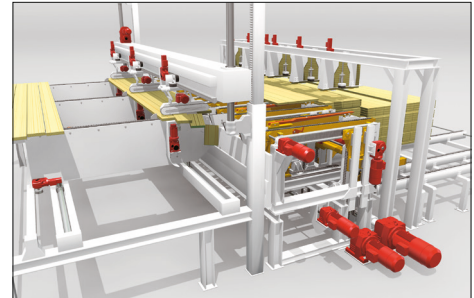
### Packaging technology

In packaging technology, MOVIKIT® MultiMotion Camming is frequently used in carton erectors.



### Transport and logistics

Load handling devices on storage/retrieval systems with synchronized drives can be configured using MOVIKIT® MultiMotion.



### Wood processing

On processing machines, equipment such as flying saws can be configured using MOVIKIT® MultiMotion Gearing.

## THE ADVANTAGES AT A GLANCE



### Flexible!

The modules and extensions make it possible to realize a wide variety of applications.



### Clear!

Control and diagnostics using a monitoring tool that is integrated in MOVISUITE®.



### Fast!

Integration into the application program through automatic code generation.



### Straightforward!

Simple control of functions via global variable interfaces.

## OVERVIEW OF THE TECHNOLOGY

### MOVIKIT® MultiMotion

This software module provides **universal motion functionalities** for interpolating axes.

Various time-based or master-based motion profiles can be activated conveniently via a defined IEC interface.

- Time-based interpolating operating modes: jog, speed specification, relative/absolute positioning, referencing
- Master-based interpolating operating mode: direct coupling

It is also possible to overlap these motion profiles.

### Expanded software modules

These modules include the basic functions of MOVIKIT® MultiMotion, but they go even further.

### MOVIKIT® MultiMotion Gearing

Expanded to include position-related synchronous operation between two or more axes.

### MOVIKIT® MultiMotion Camming

Expanded to include electronic cam as a master-based motion profile.



### Extension software modules

Depending on requirements, the MOVIKIT® MultiMotion modules can be expanded to include additional functions.

### MOVIKIT® MultiMotion add-on PositionController

Adds centralized positioning control and conventional encoder evaluation to any MOVIKIT® MultiMotion module.

### MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation

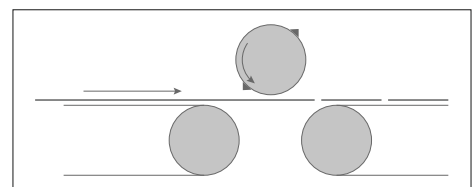
Adds combined encoder evaluation to any MOVIKIT® MultiMotion module.

### MOVIKIT® MultiMotion Camming addon AntiSlosh

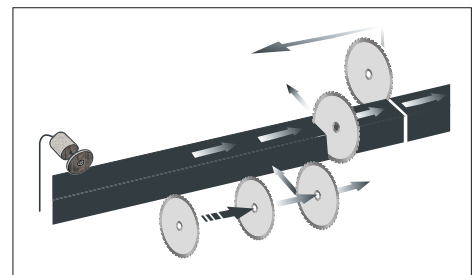
Adds a function to MOVIKIT® MultiMotion Camming for generating travel profiles that reduce vibrations in liquids.

### MOVIKIT® MultiMotion Camming addon Interpolation

Adds a function to MOVIKIT® MultiMotion Camming for generating travel profiles based on the interpolation of curve point tables. This is particularly helpful for motion profiles that cannot be defined using mathematical functions.



MOVIKIT® MultiMotion Camming is also used in processing machines with rotating knives. A defined tool path is calculated using programmed curve points.



In the case of flying saws, MOVIKIT® MultiMotion Gearing is used for synchronous operation between several axes. The interpolation add-on is used for customized travel profiles, while the CombinedEncoderInterface add-on is used for combined encoder evaluation.



# MOVIKIT® MultiMotion Camming addon AntiSlosh



## POSSIBLE USES / TYPICAL APPLICATIONS



### Conveying and filling

The AntiSlosh function is used on machines that convey and fill containers with liquids.

## THE ADVANTAGES AT A GLANCE



### Reliable!

Reliably reduces sloshing of the liquid, regardless of speed and acceleration specifications.



### Efficient!

Reduced sloshing makes it possible to achieve higher cycle times.



### Modular!

The function can be used with all components of inverters from the MOVI-C® modular automation system that support interpolated positioning.



### User-friendly!

Can be parameterized with a small number of parameters. We would be happy to offer you advice, and even help you with the project planning and implementation of the software in your project.

## OVERVIEW OF THE TECHNOLOGY

MOVIKIT® MultiMotion Camming addon AntiSlosh expands the functionality of MOVIKIT® MultiMotion Camming by adding a function for generating travel profiles that reduce vibrations when liquids are being moved in intermittent cycles. The motion profile is generated online and can therefore be quickly adapted to any changes.

Due to reduced stimulation, the liquid requires much less time to come to a standstill again after acceleration and deceleration phases.

### Shorter settling times

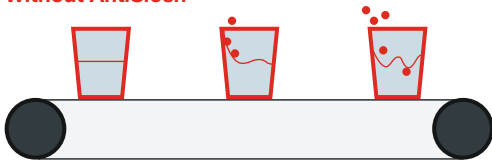
Modifying the motion profile makes it possible to directly influence the displacement of the water level.

### Sloshing prevented

The modification prevents sloshing when movement takes place in intermittent cycles.

### Reduced liquid displacement

#### Without AntiSlosh



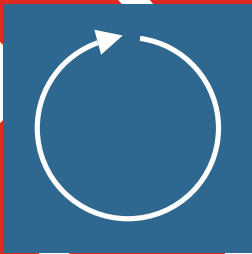
#### With AntiSlosh



## MOVIKIT® ANTISLOSH



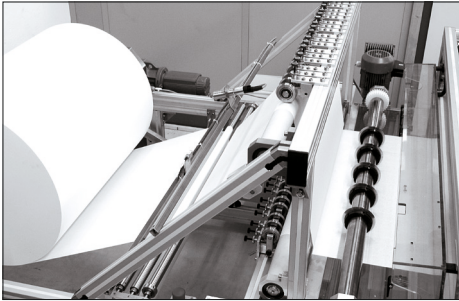
# MOVIKIT® MultiMotion AuxiliaryAxes



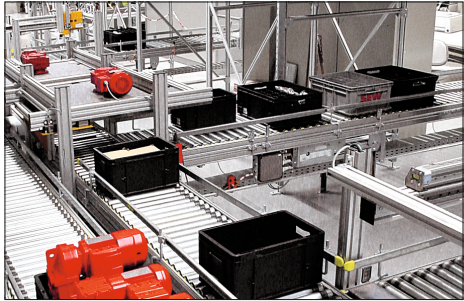
## POSSIBLE USES / TYPICAL APPLICATIONS



**Conveyor belts**  
Makes it possible to configure speed specifications for non-interpolating axes.



**Roller conveyors**  
Makes it possible to configure torque specifications for non-interpolating axes.



**Drives for format adjustments**  
Makes it possible to configure positioning.

## THE ADVANTAGES AT A GLANCE



**Flexible!**  
The modules can be used for a wide variety of applications.



**Clear!**  
Control and diagnostics using a monitoring tool that is integrated in MOVISUITE®.



**Fast!**  
Integration into the application program through automatic code generation.



**Straightforward!**  
Simple control of functions via global variable interfaces.



## OVERVIEW OF THE TECHNOLOGY

### MOVIKIT® MultiMotion Auxiliary

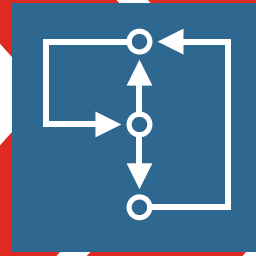
MOVIKIT® software modules are preconfigured building blocks for implementing everything from straightforward drive functions to complex motion control functions. The MOVIKIT® MultiMotion Auxiliary Velocity and MOVIKIT® MultiMotion Auxiliary Positioning software modules serve to control simple, non-synchronized motion sequences in auxiliary axes.

This illustration shows an application in which two non-synchronized and non-interpolating axes are controlled using the MOVIKIT® MultiMotion Auxiliary software modules.



Operating mode	 <b>MOVIKIT® MultiMotion Auxiliary Velocity</b>	 <b>MOVIKIT® MultiMotion Auxiliary Positioning</b>
Features	Makes it possible to configure speed and torque specifications for non-interpolating axes. The software module is particularly suited for controlling auxiliary axes in simple applications such as conveyor belts and roller conveyors.	Includes all the functions of MOVIKIT® MultiMotion Auxiliary Velocity, while additionally making it possible to configure positioning. The software is particularly suited for controlling auxiliary axes in simple applications such as variable-speed drives.
Speed control	Specification of speed, acceleration, and deceleration	
Torque control	Specification of torque and maximum/minimum speed	
Reference travel	–	Reference travel can be configured
Position control	–	Specification of position, speed, acceleration, deceleration, and jerk time
Jog	–	Specification of speed, acceleration, deceleration, and jerk time

# MOVIKIT® AutomationFramework



## POSSIBLE USES / TYPICAL APPLICATIONS



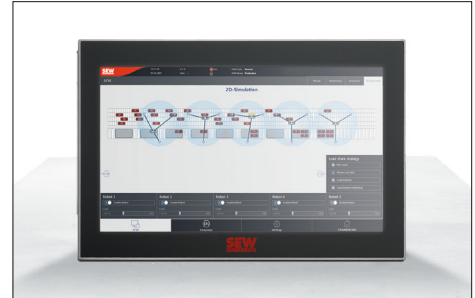
### PackML-compatible

PackML-compatible state and mode manager for use across machines



### Versatile

Can be used as a modular system with a wide range of machine types



### Custom extensions possible

2D simulation of a robot line for algorithm development and maximization of production capacity

## THE ADVANTAGES AT A GLANCE



### Compatible!

OMAC-defined industry standard thanks to PackML (Packaging Machine Language) compatibility



### Saves time!

Time-saving pre-engineering thanks to 2D simulation of the application



### Modular!

Reduced programming thanks to use of prefabricated software modules



### Added value for you!

Thanks to additional features such as preprogrammed visualization modules

## OVERVIEW OF THE TECHNOLOGY

### Practical relevance

In packaging technology, there are some processing steps that are basically the same. One FFS machine essentially has the same functions as any other – even if they are from different manufacturers.

The vertical or horizontal packaging process and the resulting motion tasks for the drive and automation technology remain unaffected, in principle.

### MOVIKIT® software modules

This is where we come in. The core element of our MAXOLUTION® solutions for machine automation is the software. With our MOVIKIT® software modules, we have found a solution for movement patterns that requires only minimal parameterization/programming work. AutomationFramework enhances these very modules, ensuring synchronicity in your solution.

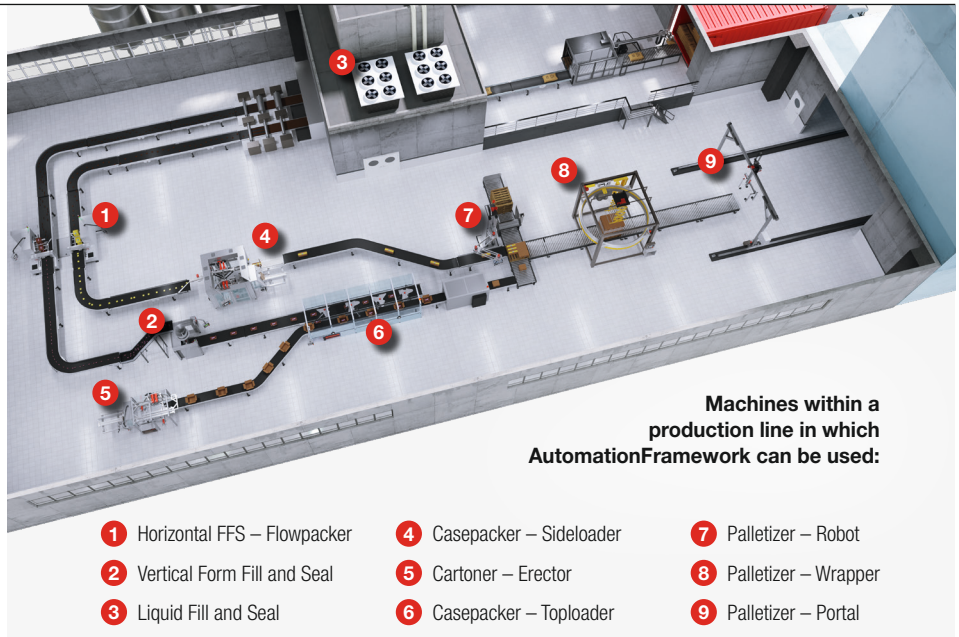
### Functions

AutomationFramework provides an environment where you can combine the MOVIKIT® modules and create dependencies. It is compatible with the defined OMAC (Organization for Machine Automation and Control) industry standard. With the new MOVIKIT® AutomationFramework software module, a standardized state and mode manager for

implementation on all MOVI-C® CONTROLLERS has been added to our predefined software solutions. It offers defined interfaces for PackML such as PackTags and uses the defined modes and states.

A master and a sample slave are included in the basic program. More software modules

can easily be added to the program from a basic project. MOVIKIT® AutomationFramework also offers a range of additional functions on top of this. Examples include fault elimination, recipe management, and a simulation environment for all incoming software modules and prepared HMI modules.

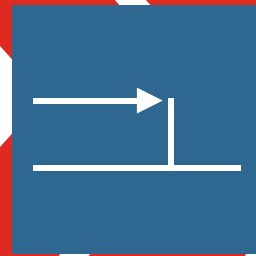


**Machines within a production line in which AutomationFramework can be used:**

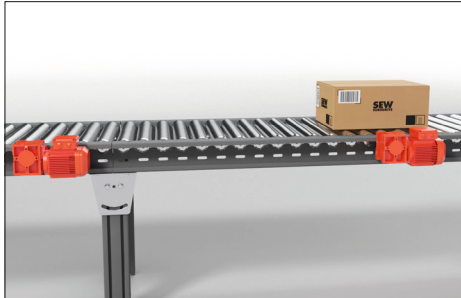
- |                               |                           |                        |
|-------------------------------|---------------------------|------------------------|
| 1 Horizontal FFS – Flowpacker | 4 Casepacker – Sideloader | 7 Palletizer – Robot   |
| 2 Vertical Form Fill and Seal | 5 Cartoner – Erector      | 8 Palletizer – Wrapper |
| 3 Liquid Fill and Seal        | 6 Casepacker – Toploader  | 9 Palletizer – Portal  |



# MOVIKIT® Drive



## POSSIBLE USES / TYPICAL APPLICATIONS



### Rapid/creep speed positioning

Applications with the rapid/creep speed positioning operating mode include roller conveyors, rotary tables, and pallet transfer shuttles.



### Velocity and torque control

Possibilities with the "Velocity control" and "Torque control" operating modes include agitators, conveyor belts, and linear sorter applications.



### Positioning

Applications with the "Positioning" operating mode include vertical drives, storage systems, and supply systems.

## THE ADVANTAGES AT A GLANCE



### Simple!

- Application-specific configuration without programming knowledge, with worldwide support
- Standardized user interface with higher-level controller



### Universal!

- Hardware-independent software modules with guided startup via the MOVISUITE® engineering software
- Available for centralized and decentralized inverter technology



### Fast!

- Startup and diagnostics via the engineering PC even before fieldbus connection
- Easy unit replacement, as the entire set of device parameters is stored on a portable memory module



### Flexible!

- Direct connection to higher-level control systems
- Various options for controlling via terminal, AS-Interface, or fieldbus

## OVERVIEW OF THE TECHNOLOGY

### Solutions for single-axis automation

MOVIKIT® software modules in the "Drive" category are operated directly on the inverter from the MOVI-C® modular automation system. They are connected directly to the higher-level controller and are controlled individually via the respective interface. Various

applications can thus be implemented via convenient and rapid configuration – all without the user needing any programming knowledge. A wide range of additional functions such as sensor-based positioning are available, depending on the requirements.

### MOVI-C® – inverters for single-axis automation



#### Decentralized inverter

Electronics unit for installation close to the motor or integrated in the motor.



#### MOVITRAC® advanced

Compact standard inverter for control cabinet installation with a scalable range of functions.



#### MOVIDRIVE® technology

High-performance application inverter for control cabinet installation with a comprehensive range of options.



### MOVI-C® – MOVIKIT® software modules in the "Drive" category

MOVIKIT®	Available operating modes – depending on the inverter selected								Interface		
	Velocity control	Torque control	Jog mode	Positioning mode (relative, absolute, modulo)	Sensor-based positioning mode	Rapid/creep speed conveyor modes	Referencing mode	Teach mode	Terminal	AS-Interface	Fieldbus
<b>Velocity Drive</b>	×										×
<b>Positioning Drive</b>	×		×	×	×		×				×
<b>RapidCreepPositioning Drive</b>			×			×	×				×
<b>BinaryTablePositioning Drive</b>	×		×	×	×		×	×	×	×	
<b>Torque Drive</b>	×	×	×				×				×

### Additional functions – dependent on the respective MOVIKIT® software module

Jerk time variable via process data / parameter channel via process data / torque limiting / distance measuring function / etc.

# MOVIKIT® DeviceIdentity

# MOVIKIT® DeviceVitality

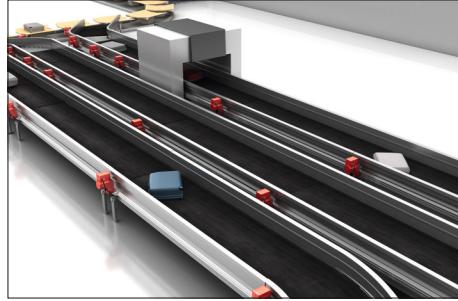


## POSSIBLE USES / TYPICAL APPLICATIONS



### Asset management

- Automation of the inventory process
- Monitoring of changes to hardware, software, and configuration
- Simple and consistent process optimization



### Condition monitoring

- Monitoring of relevant data relating to parameters such as capacity utilization, temperatures, electrical power, and energy consumption
- Analysis and evaluation of the system status



### Predictive maintenance

- Reduction of maintenance work through targeted maintenance and prioritized maintenance tasks
- Increased productivity thanks to reduced downtimes and longer maintenance intervals

## THE ADVANTAGES AT A GLANCE



### Networked!

Data is provided using a standardized OPC UA information model for consistent, seamless traceability of system-related data in real time.



### Interoperable!

Prepared data is used for direct transfer and easy integration into customer IT systems (asset management and IoT systems).



### Simple!

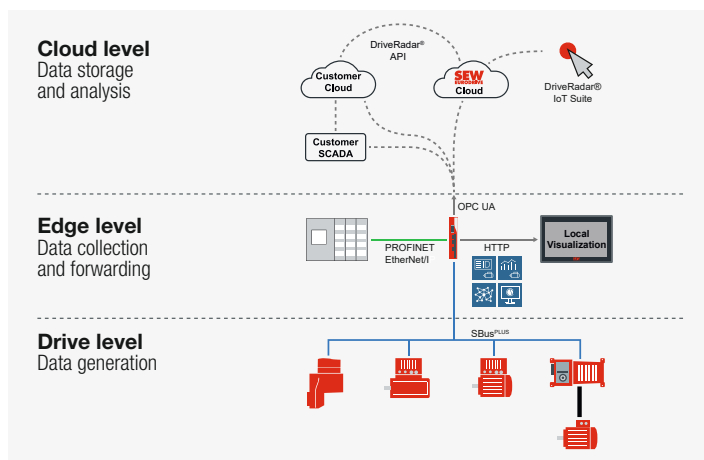
Efficient and straightforward startup without the need for any programming skills thanks to the MOVISUITE® engineering software.



### Visualized!

Visualization of data directly on the system as well as via an optional cloud connection.

## OVERVIEW OF THE TECHNOLOGY

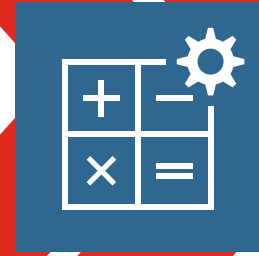


MOVIKIT® DeviceIdentity and MOVIKIT® DeviceVitality are used as software-based smart services at edge level to create the connection between automation and IoT for asset management, condition monitoring, and predictive maintenance purposes.

More details on additional functions and information about the license terms are available at [www.sew-eurodrive.de](http://www.sew-eurodrive.de)

MOVIKIT®	DeviceIdentity	DeviceVitality
<b>Functions</b>	<ul style="list-style-type: none"> <li>– Collection, processing, and monitoring of product-specific data from components from the MOVI-C® modular automation system</li> <li>– Use of data directly in the code in accordance with IEC 61131-3</li> <li>– Provision of data via a standardized information model in combination with MOVIKIT® OPC UA</li> <li>– Visualization of data directly on the system in combination with MOVIKIT® WebVisualization</li> </ul>	
<b>Added value</b>	<ul style="list-style-type: none"> <li>– Product-specific data such as serial number and type code for identifying components from the MOVI-C® modular automation system</li> <li>– Mapping of the system infrastructure</li> <li>– Basis for further software modules from SEW-EURODRIVE</li> </ul>	<ul style="list-style-type: none"> <li>– Product-specific data such as temperature and electrical power for evaluating the condition of components from the MOVI-C® modular automation system</li> <li>– Preprocessing of data such as average, minimum, and maximum values as well as device-specific capacity utilization</li> <li>– Preconfigured, parameterizable monitoring functions for components, including notifications via OPC UA</li> </ul>

# MOVIKIT® ModelBasedMonitoring



## POSSIBLE USES / TYPICAL APPLICATIONS



### Versatility

Easily integrated into existing machinery/applications and fast, straightforward operation thanks to a visual user interface.



### Variability

Selection of different dynamic models and various configuration options for the mathematical model.



### Visualization

Up to four different curves can be depicted simultaneously from the available curve recordings, with custom curve and color selection.

## THE ADVANTAGES AT A GLANCE



### Clear!

The clear, compact user interface offers excellent customization and adjustment options.



### Interoperable!

Calculated data can be exported and made available for other analysis tools.



### Format-independent!

Thanks to a mathematical model, there is no need to teach-in reference curves that rely on a specific product format.



### Simple!

Integrated parameter descriptions simplify and speed up use of the tool.

## OVERVIEW OF THE TECHNOLOGY

The MOVIKIT® ModelBasedMonitoring software module is a diagnosis and analysis tool based on mathematical calculation models from a huge range of applications. The calculated data is compared with the application's actual values, and statistical evaluations are performed. Deviations that breach a configured threshold can trigger warnings or alarms. The recorded data may also be exported as a CSV or JSON file and processed for further diagnostics.

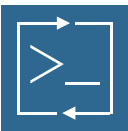


In contrast to conventional condition monitoring, no reference curves need to be recorded to use the software module. This makes the software module suitable for changing curve profiles such as those that occur during a format change. In combination with conventional condition monitoring, pre-existing reference curves can be transformed into new curve profiles. There is no need to teach-in a reference curve again, as no wear is taught-in and judged to be the normal condition.

Calculated data can be exported and then imported into SEW-Workbench for project planning purposes. This means customer-specific project planning can also be carried out for complex curve profiles that can be mapped by SEW-Workbench.

### Overview of functions

- Selection of various dynamic models in different variants
- Startup via a graphical user interface
- Output of warnings or alarms if configured threshold values are breached
- Export of the recorded data as a CSV or JSON file for diagnostic purposes
- Export of the recorded data for importing into SEW-Workbench
- Statistical evaluation of deviations (residuals) such as minimum, maximum, range of values, mean value, standard deviation, and variance

MOVIKIT® ModelBasedMonitoring requires the software platform MOVIRUN® flexible and the included MOVIKIT® MultiMotion module. MOVIKIT® Visualization is necessary for visualizing the graphical interface.

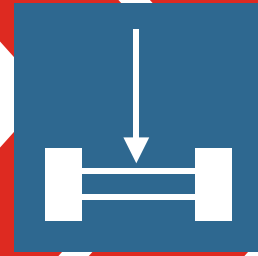
MOVIRUN® flexible	MOVIKIT® MultiMotion	MOVIKIT® Visualization
		





# MOVIKIT®

## MultiAxisController



### POSSIBLE USES / TYPICAL APPLICATIONS



#### Storage/retrieval systems

The software module can prevent the vertical drive of storage/retrieval systems from skewing.



#### Mechanical engineering

The software module can balance torques between mechanically coupled drives.



#### Bridge cranes

Cascading the software modules makes it possible to balance torques on each side of the crane and correct skewing on both sides.

### THE ADVANTAGES AT A GLANCE



#### Easy!

Simple startup and quick adjustment thanks to preconfigured software modules.



#### Durable!

Synchronized drives and balanced torques mean wear is reduced.



#### Dynamic!

The module breaks with conventional master/slave setups and treats all drives as equal.



#### Modular!

Extensions can be used to flexibly combine several software modules with each other.

### OVERVIEW OF THE TECHNOLOGY

#### MOVIKIT® MultiAxisController

MOVIKIT® software modules are preconfigured software elements for implementing drive functions.

##### Basic functions:

- Central control of referencing, limit switch evaluation, and error handling for one axis group
- Central position control
- Virtual master in various operating modes
- Combined encoder evaluation (distance and motor encoder)

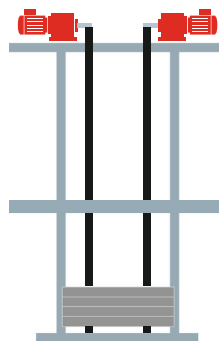
These basic functions are supplemented with additional functions according to the operating mode selected. It is possible to switch between "Skewing", "Torque", and both during operation.

#### MOVIKIT® MultiAxisController Skewing

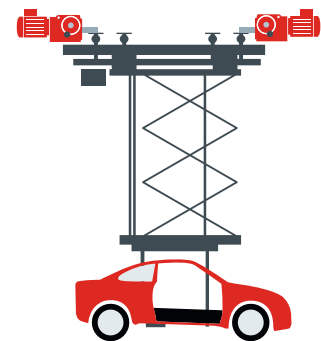
- Phase-synchronous operation
- Alignment function can be used continuously
- Overload monitor prevents asynchronicity in the event of an accident
- Solution for loosely coupled drives or dual-spindle drives

#### MOVIKIT® MultiAxisController Torque

- Synchronization with torque distribution
- Load balancing / load distribution possible
- Desired drive tensions can be configured
- Solution for rigidly coupled drives



MOVIKIT® MultiAxisController Skewing prevents skewing in this dual-column hoist by ensuring the positions of the two drives are synchronized during operation.



MOVIKIT® MultiAxisController Torque eliminates any torque stresses between the two drives in this electrified monorail system.

#### Software extensions

For some operating modes, optional extensions (add-ons) are available that expand the functionality of the relevant MOVIKIT® software module.

#### MOVIKIT® MultiAxisController add-on FourAxes

Control of up to four drives simultaneously. Any number of drives can be controlled together by combining several modules.

#### MOVIKIT® MultiAxisController add-on Cascading

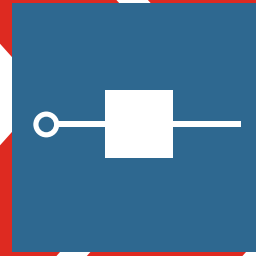
Drives in several axis groups are operated in a cascade. This means, for example, that drives can be run individually in "Torque" operating mode and at a higher level in "Skewing" operating mode.



# MOVIKIT®

## Power and Energy Solutions

### PowerMode

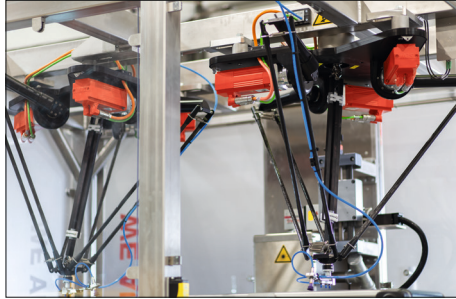


#### POSSIBLE USES / TYPICAL APPLICATIONS



##### Plant automation

- Storage and retrieval systems
- Vertical drives
- Gantry cranes



##### Machine automation

- Injection molding machines
- Handling machines
- Highly dynamic robots



##### Mobile applications

- “Short-distance” shuttles (SRS)
- Floor conveyor vehicles
- Small electrically powered vehicles

#### THE ADVANTAGES AT A GLANCE



##### Power and Energy Solution!

- Reduces peak load at the line connection
- Detects and deals with power failures
- Operates energy storage units
- Provides notification of fuse and storage status
- Synchronized activation and deactivation of the energy storage unit



##### Optimized!

- Stores braking energy, thus saving energy
- Braking resistor no longer required
- Bridges brief power failures
- Stops the application in a controlled manner when longer power failures occur



##### Energy management data!

- Provides storage unit diagnostic data (voltage, temperature)
- Performance and energy data available on the MOVI-C® CONTROLLER
- Data transmitted to the customer PLC via fieldbus
- Supports DriveRadar®

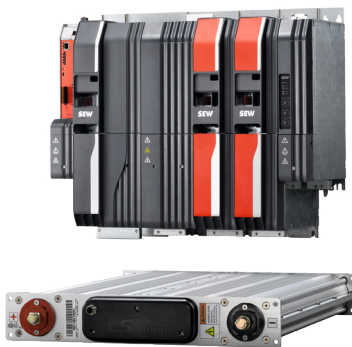


##### Quick startup!

- Ready-to-use software module that can be put into operation quickly and easily with MOVISUITE®
- Easy installation and reduced installation costs

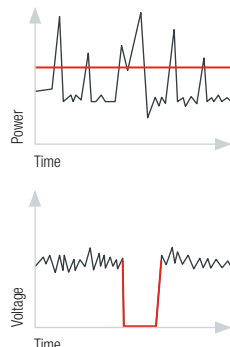
#### OVERVIEW OF THE TECHNOLOGY

Software modules in the “Power and Energy Solutions” category include energy supply solutions for inverters in the MOVIDRIVE® modular family. Combined with MDP92A power supply modules, MDE90A energy converters, and MDC90A capacitor energy storage units, MOVIKIT® Power and Energy Solutions PowerMode in this category enables highly efficient power supply solutions for the MOVIDRIVE® modular inverter series. This software module is designed for applications with energy storage units that are switched directly to the DC link.



Device portfolio and energy module (left)

Peak load limitation and bridging during power failures with residual energy (right)



#### MOVIKIT® Power and Energy Solutions PowerMode offers the following functionality:

- Communication between the MOVI-C® CONTROLLER and the Power and Energy Solutions components (power supply modules, energy storage units, fuses, isolation devices, and axis inverters)
- Statically and dynamically adjustable maximum grid supply power rating and current limitation
- Provision of status information (phase failure or power failure, outer conductor voltages, and phase current) for the AC grid (MDP92A only)
- Acquisition of the power ratings for the grid supply and axis module
- Acquisition of the power rating of 24 V consumers (via MDS90A) and external AC consumers

#### Other functions:

- Dynamically adjustable state of charge on the energy storage unit, including definition of the work envelope (up to 800 V)
- Recuperation detection for optimized storage utilization
- Power-regulated discharge of the DC link (MDP92A only)
- Automatic synchronization and activation/deactivation of the energy storage unit
- Integrated energy storage unit protection
- Acquisition of monitoring data for the energy storage unit (temperature, overvoltage detection) by querying via the diagnostic interface
- Automatic operating modes for easy connection to the application
- Determination of the remaining runtime after a power failure
- Fieldbus interface for communication with higher-level customer controllers



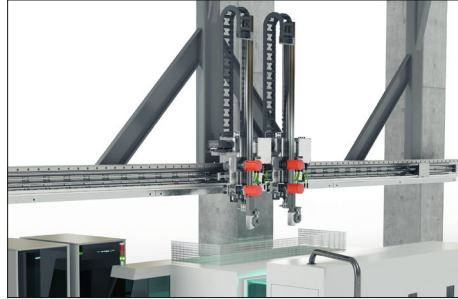
# MOVIKIT® Robotics



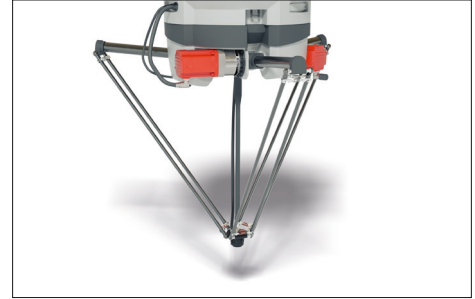
## POSSIBLE USES / TYPICAL APPLICATIONS



Single-column palletizers



Machine tool gantries



Robots for handling tasks

## THE ADVANTAGES AT A GLANCE



### Simple!

Enormous time saving thanks to the software module's rapid integration into the project by means of automatic IEC code generation and the adaptability of the robot program directly on the machine.



### Customized!

All kinds of different kinematic models can be selected from a catalog. Customer-specific kinematic models can be integrated. The software offers a great deal of scope for custom solutions.



### Long life!

SEW-EURODRIVE keeps components and software available on the market for about 20 years. This avoids the costs associated with software changeovers and the need for redesigns due to the supplier discontinuing products.



### Powerful!

MOVIKIT® Robotics supports the entire portfolio of controllable drive technology. This means that even large loads can be moved in a coordinated way.

## OVERVIEW OF THE TECHNOLOGY

### Quick startup

MOVIKIT® Robotics is particularly easy to start up. It supports a variety of kinematic models with different types, numbers, and arrangements of joint axes. The kinematic models are quick and easy to put into operation through parameterization alone.

### Integration

Full integration into the MOVISUITE® engineering software with automatic IEC code generation enables you to start with a fully functional program. Avoid wasting time on library selection and get started with your actual automation task right away.

### Add-ons available

There are several add-ons, meaning you can extend the functionality of your kinematic models, e.g. with Touchprobe or CollisionDetection. MOVIKIT® Robotics can also be used with other MOVIKIT® modules. You can combine a kinematic model with MOVIKIT® Camming or MultiAxisController, for example.

### Scalable

MOVIKIT® Robotics can be run on all devices in the MOVI-C® CONTROLLER portfolio. This allows you to adapt the hardware to your application.

### 3D simulation

The motion paths can be simulated in MOVISUITE® RobotMonitor using the integrated, automatically generated 3D simulation of the robot.

### Customizable program code

The MOVIKIT® Robotics program code can be flexibly expanded. The module provides both function-oriented and object-oriented programming interfaces. This enables you to integrate the program module into a complete machine automation solution or implement customer-specific kinematic models with special functions.

### Modular automation system ensures compatibility

MOVI-C® is the all-in-one solution for automation tasks. Regardless of whether you are implementing standardized single-axis/multi-axis applications or customized and particularly complex motion control or automation applications – MOVI-C® makes all of this possible and gives you the scope to optimize automation for new projects.

### Easy to use

Once started up, the kinematic model can be operated using MOVISUITE® RobotMonitor or directly from the IEC program.

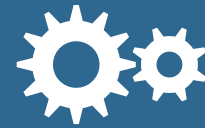


RobotMonitor can be run on both a PC and a separate control plate, meaning you always have the same user interface available for operation. The movement can be conveniently defined using SRL (the "SEW Robot Language" interpreter language) and teach-in mode.

### Standardized fieldbus data interfaces

Standardized fieldbus interfaces with different data widths offer you the correct interface to a higher-level controller, depending on the range of functions you require. The data interfaces do not depend on the protocol used. This means you do not have to make any changes to the software if you want to switch to a different fieldbus protocol.

# MOVIKIT® Velocity MOVIKIT® Positioning MOVIKIT® Gearing



## POSSIBLE USES / TYPICAL APPLICATIONS



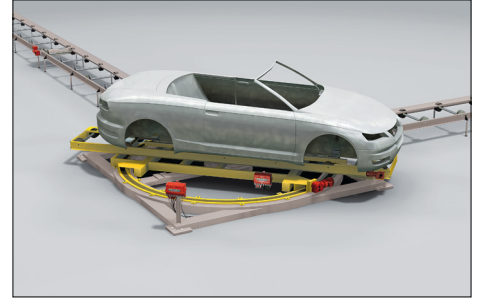
### Materials handling technology

For vertical drives, speed and position must be precisely set to take the goods safely to the correct level.



### Logistics

The axes in package conveyor belts must run synchronously to ensure smooth operation.



### Turntables

Turntable drives must be coordinated so that the goods are in the correct position and moving at the correct speed.

## THE ADVANTAGES AT A GLANCE



### Simple!

Absolutely no programming knowledge is required for startup.



### Standardized!

All the module's functions have a defined process data interface.



### Saves time!

Simple parameterization reduces the effort involved in startup, thus saving time and money.



### Intuitive!

The module is intuitive to use on any hardware, making it particularly user-friendly.

## OVERVIEW OF THE TECHNOLOGY

MOVIKIT® software modules are preconfigured software elements for implementing anything from simple drive functions such as speed control and positioning to complex motion control functions such as camming.

### Basic functions

The "SingleAxis" category includes all MOVIKIT® software modules with parameterizable functions and with a standardized process data interface.

### MOVIKIT® Velocity

This software module is used for applications where velocity control is required.




### MOVIKIT® Positioning

This software module offers the functionality of MOVIKIT® Velocity and can also be used for positioning applications.

### MOVIKIT® Gearing

With the MOVIKIT® Gearing software module, the inverter is interpolated in all operating modes.

This software module offers the same functions as MOVIKIT® Positioning, but can also be used for synchronous operation applications with a permanently defined fieldbus interface.

	 <b>MOVIKIT® Velocity</b>	 <b>MOVIKIT® Positioning</b>	 <b>MOVIKIT® Gearing</b>
<b>Functions</b>	<ul style="list-style-type: none"> <li>– Startup via a graphical user interface</li> <li>– Dedicated parameter tree with all the parameters that are required for operation</li> <li>– Diagnostic monitor for monitoring and controlling the axis</li> <li>– Standardized process data interface</li> </ul>		
<b>Operating modes</b>	1. Velocity control	1. Velocity control 2. Referencing mode 3. Jog mode 4. Positioning mode	1. Velocity control 2. Referencing mode 3. Jog mode 4. Positioning mode 5. Synchronous operation
<b>Additional functions</b>	1. Variable jerk time via process data 2. Torque limiting via process data	1. Variable jerk time via process data 2. Torque limiting via process data 3. Touchprobe function	1. Variable jerk time via process data 2. Torque limiting via process data 3. Touchprobe function 4. Advanced synchronous operation functions such as an alignment function, offset correction, and synchronous operation status

# MOVIKIT® RotaryKnife

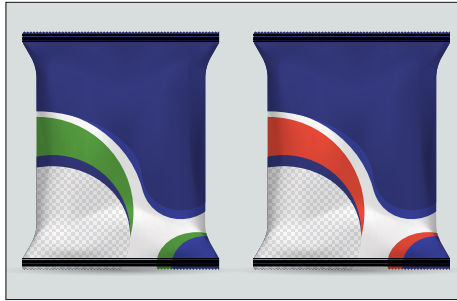


## POSSIBLE USES / TYPICAL APPLICATIONS



### Cross cutting

The rotary knife cuts through laminate in flexibly adjustable lengths.



### Cross sealing

The rotary knife seals the film before and after product filling, and the film is cut afterward.



### Perforation

The rotary knife perforates paper, e.g. to create tickets.

## THE ADVANTAGES AT A GLANCE



### Simple!

Absolutely no programming knowledge is required for startup.



### Automated!

Curve profiles are generated automatically for the cutting process and adapted to any changes in the parameters.



### Flexible!

The knife can be configured for a whole range of material thicknesses and product lengths in the module.



### Customized!

Thanks to a wide variety of parameterizing options, the software module can be adapted to any application.

## OVERVIEW OF THE TECHNOLOGY

### MOVIKIT® RotaryKnife

This software module is used for applications that include a cutting, sealing, or perforation process.

Synchronous movement of material and tool is achieved during cutting. A fixed fieldbus interface is also defined.

### Cutting a whole range of materials

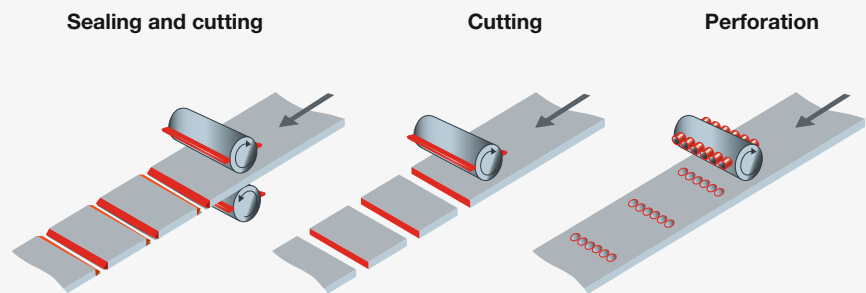
The "Rotary knife" function enables the cutting of any material – such as paper, film, or metal – in different thicknesses.

### Cutting flexible product lengths

The software module automatically generates a curve profile to control the cut length when the runtime starts. If the parameters are changed, the curve profile is recalculated while in motion.

### Operating modes

- Jog mode
- Velocity control
- Referencing mode
- Positioning mode (relative/absolute)
- Velocity control
- Automatic



In this example, two rotary knives are used for **sealing and cutting** in a horizontal form, fill, and seal machine.

A rotary knife **cuts** material into individual parts.

A rotary knife **perforates** holes into the material. Generally, the material can be embossed or punched.

### Curve profiles

With large cut lengths, curve profiles with a long rest phase between the cutting zones are produced. In such cases, the "Instant cut" function can be used to perform an instant cut from the rest position. The machine then automatically returns to the rest position.



# MOVIKIT® FilmFeeder



## POSSIBLE USES / TYPICAL APPLICATIONS



### FFS machines

A film is first formed into a tube, then filled, and finally sealed.



### Print mark recognition

Print marks, such as the black ones on this film, are used to ensure clear-cut, error-free further processing.



### Labeling machines

Films are often used in the food industry, e.g. to label bottles.

## THE ADVANTAGES AT A GLANCE



### Simple!

Absolutely no programming knowledge is required for startup.



### Reliable!

The continuous correction of errors produces an error-free print image.



### Universal!

The software module can be used wherever films are being processed.



### Precise!

Setting observation windows prevents incorrect print mark detection.

## OVERVIEW OF THE TECHNOLOGY

### MOVIKIT® software modules

The software modules are preconfigured software elements for implementing anything from simple drive functions to complex motion control functions.

### MOVIKIT® FilmFeeder

This software module is used for film transport in equipment such as horizontal and vertical form, fill, and seal machines (HFFS/VFFS), with a fixed fieldbus interface being defined.

### Operating modes

With the MOKIKIT® FilmFeeder software module, the inverter is operated interpolated in all modes.

- Jog
- Velocity control
- Referencing
- Positioning (linear and modulo)
- Automatic

### Endless feed

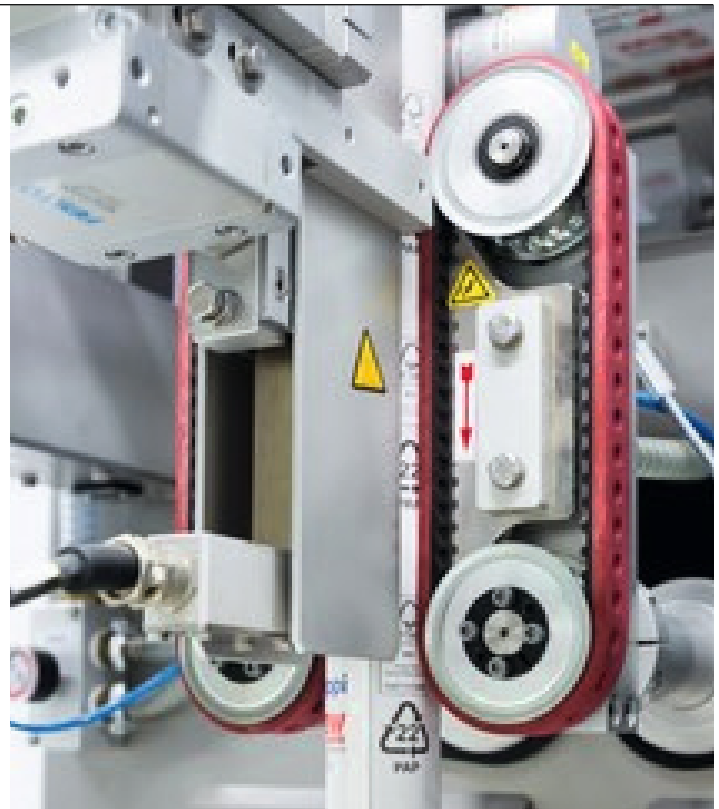
In "Automatic" mode, the "film feed" function provides a master-based endless feed (synchronous operation).

### Consistent print image

In conjunction with a print mark sensor, the "print mark recognition" function ensures a consistent print image, even if the film is stretched or compressed. This is made possible by the process or through the adjustment of a film feed that is subject to slippage.

### Continuous error correction

With the MOVIKIT® software module, the phase and feed are corrected during operation. Additionally defining print mark windows avoids incorrect detection – in the case of printed products, for instance – as only print marks within the window are evaluated.

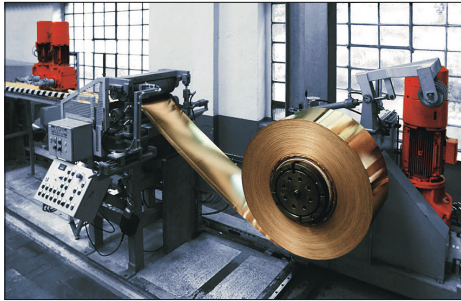


This FFS machine packages a product in film. To ensure error-free packaging, a sensor detects the print marks on the film and passes on this position information to the controller so that any necessary corrections can be made.

# MOVIKIT® Winder



## POSSIBLE USES / TYPICAL APPLICATIONS



Winder in clocked machines, e.g. for stamping sheet metal



Machine with web material running through it, and with winding units and tension shafts



Winder in cable, rope, or wire applications

## THE ADVANTAGES AT A GLANCE



### Dependable startup!

Thanks to prefabricated, tried-and-tested function blocks



### Rapid startup, optimization, and diagnostics!

Thanks to animated startup interfaces (in combination with MOKIKIT® Automation-Framework)



### Compatible, end-to-end fieldbus interface!

Ready for use with other MOKIKIT® modules in smart applications (in combination with MOKIKIT® Automation-Framework)



### Flexible and open!

With basic modules that deliver adaptability for more complex applications

## OVERVIEW OF THE TECHNOLOGY

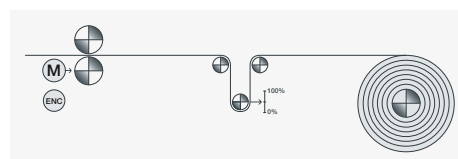
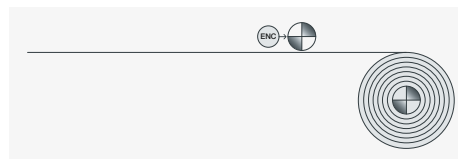
MOVIKIT® Winder features a program library full of functions for implementing winding applications that enable users to wind or unwind materials with consistent tension or web speed. In winding applications, different materials and mechanical conditions require different winding technologies.

This means the following applications can be achieved, for example:

- **Winders** that wind or unwind material with consistent tension or web speed (tension control available as an option)
- **Rewinders** that rewind material onto another coil, whereby one winder sets the consistent web speed and the other winder sets the consistent tension
- **Winders with a dancer** that implement the tension-determining winding or unwinding of material, whereby the tension in the case of dancer position control is generated by the dancer weight.

MOVIKIT® Winder supports the following standard processes:

- Tension-determining winders with torque control (tension control available as an option), dancer position control, and tension control via control of setpoint speed through tension measurement



- Speed-determining winder with open-loop speed control (closed-loop speed control available as an option)

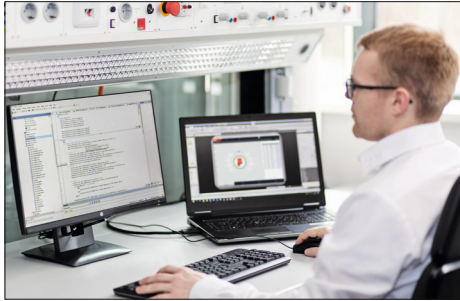
Overview of functions:

- Torque control (tension control available as an option)
- Friction coefficient determination for torque control
- Dancer position control
- Tension control via control of setpoint speed through tension measurement
- Open-loop speed control (closed-loop speed control available as an option)
- Diameter identification (computer, position counter, distance sensor)

# Modular visualization system



## POSSIBLE USES / TYPICAL APPLICATIONS



### Development

Ready-made templates for time-saving integration during the development phase.



### Simulation and startup

In conjunction with MOVIKIT® AutomationFramework for visualization of machines and systems.



### Application

Handheld device for controlling a kinematic model with the RobotMonitor for MOVIKIT® Robotics.

## THE ADVANTAGES AT A GLANCE



### Flexible!

Flexible browser-based access using web visualization and a web panel.



### Intuitive!

A universal engineering tool for visualization and motion applications with direct access to the controller variables.



### User-friendly!

Integration of ready-made user interface templates saves time at the creation stage.



### Comprehensive!

The possibilities of the modular software system range from the creation of user interfaces to the creation of complex machine visualizations.

## OVERVIEW OF THE TECHNOLOGY



**Modular visualization system, from hardware to software, based on the MOVI-C® CONTROLLER portfolio.**

It is important to maintain an overview of sophisticated drive tasks involving a large number of axes. The more extensive the functionality of systems and drive technology becomes, the more the requirements for operation, visualization, and diagnostics increase. SEW-EURODRIVE visualization hardware has been specifically developed for use in harsh industrial environments immediately next to the machine.

Capacitive touch displays can even be used when wearing gloves. Safety functions such as key switches, emergency stops, and immobility alarms are already integrated.

In addition to an extensive portfolio of visualization solutions, SEW-EURODRIVE naturally also supplies the corresponding accessories, such as prefabricated cables, assembly parts, and the voltage supply – all from a single source.

SEW-EURODRIVE offers a comprehensive portfolio of visualization solutions for various applications.

Based on the MOVI-C® CONTROLLERS UHX25A, UHX45A, and UHX65A, users first select an appropriate industrial display unit (e.g. a web operator panel, operator

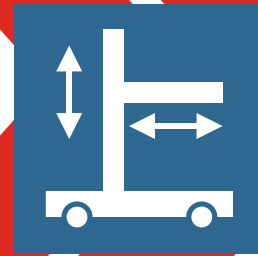
terminal, or handheld terminal), depending on the application. The MOVIKIT® Visualization software module (Web Visualization, Visualization basic, Visualization flexible, or Visualization multi) then makes it possible to create a graphical interface. Users can freely design this interface or take advantage of ready-made templates (frameworks), ranging from simple options (free of charge) to complex solutions (subject to a charge). One example is MOVIKIT® Visualization addon ParameterMonitor.

The CODESYS user interface you use for this is also utilized for IEC programming. This

creates a seamless transition between the two worlds. Depending on the visualization task, visualization can take place on the MOVI-C® CONTROLLER or on a separate Windows PC.



# MOVIKIT® StackerCrane



## POSSIBLE USES / TYPICAL APPLICATIONS



### Storage/retrieval systems

MOVIKIT® StackerCrane effiDRIVE® can be used for all storage/retrieval systems with up to four travel axes and four lifting axes.



### Drive variants

- Single and double vertical drive
- TopDrive for vibration suppression
- Multi-drives with dynamic load distribution



### Further options

- Various load handling devices (MOVIKIT® CombiTelescope)
- Satellite storage/retrieval systems
- Safe bufferless end of the aisle

## THE ADVANTAGES AT A GLANCE



### Optimized for SEW drive technology!

Coordinated with SEW-EURODRIVE hardware – from gear unit and motor to drive technology, energy management, and control technology.



### Quick startup!

Preconfigured software modules ensure easy startup and monitoring via a graphical user interface.



### Straightforward operation and diagnostics!

The integrated process data monitor makes the standardized process data profile easy to operate.



### Intelligent power supply!

Regenerative power supply modules or storage solutions can be incorporated in project planning and used as required, depending on the application.

## OVERVIEW OF THE TECHNOLOGY

### Software

- Optimizing the travel cycles of lifting and travel drives achieves energy savings of up to 25%
- Further drive axes can easily be added with the MOVIKIT® StackerCrane, MultiMotion, and MultiAxisController **software modules**
- The range of functions can be extended with MOVIKIT® add-ons (e.g. AntiSway) to add special functions for vibration damping
- Always the same PD interface, regardless of the subordinate MOVIKIT® functions

### Power and Energy Solutions

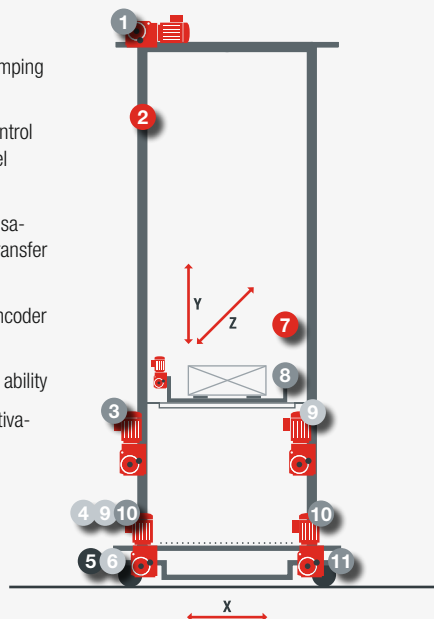
- Up to 40% lower energy consumption thanks to storage solutions
- Using storage capacitors in the DC link reduces power peaks from the supply system by a factor of between 7 and 10
- Intelligent power failure management
- Block-type or sinusoidal energy recovery using the latest technology

### Safety technology

- Meets tougher safety technology requirements (e.g. SLP, SLS, SBC) thanks to integrated safety technology

- 1 TopDrive for vibration damping on the mast
- 2 TowerSway anti-sway control thanks to intelligent travel profiles
- 3 Rope elongation compensation, including the load transfer scenario
- 4 Electrical braking if an encoder fault occurs
- 5 SRS units with cornering ability
- 6 Emergency mode / deactivation of external encoder

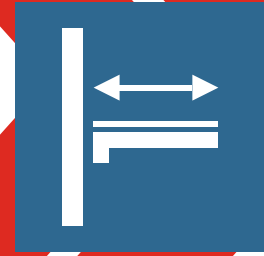
- 7 BellySway anti-sway control for LHDs
- 8 Auto leveling – anti-skew adjustment, including in the event of a fault
- 9 Energy-optimized xy operation
- 10 Anti-slip control
- 11 Combined encoder evaluation with increased position control loop gain



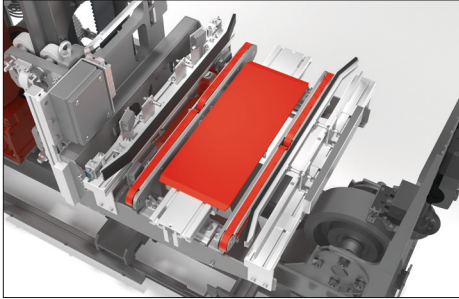
### Scope of functions of MOVIKIT® StackerCrane effiDRIVE® in combination with:

- MultiMotion
- MultiAxisController
- Motion add-on AntiSway
- MOVIKIT® Custom CurveDrive

# MOVIKIT® CombiTelescope

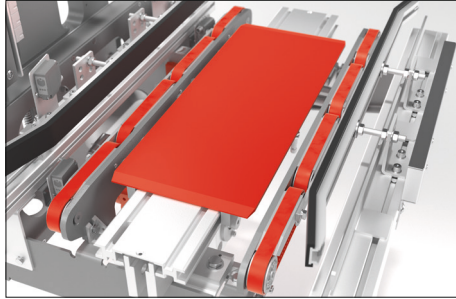


## POSSIBLE USES / TYPICAL APPLICATIONS



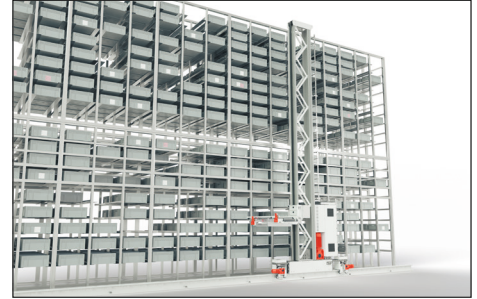
### Storage and retrieval

MOVIKIT® CombiTelescope simplifies the control of a combi telescope (load handling device) for storage/retrieval systems.



### Up to four belt conveyors possible

The combi telescope implemented using this software consists of a telescope that can be equipped with up to four belts.



### Storage/retrieval systems

Load handling devices of this type are primarily used for storage and retrieval in automated small parts warehouses.

## THE ADVANTAGES AT A GLANCE



### Quick startup!

MOVIKIT® CombiTelescope shortens startup times (no programming required).



### Simple parameterization!

Parameters are based on the lengths and spacings of the load handling device to be implemented. These can easily be determined on site during startup.



### Standardized fieldbus interface!

No matter what the design of the combi telescope (number of belt conveyors), the same fieldbus interface is always used.



### Easy to use!

After initial startup, only a small amount of process data is needed for executing storage and retrieval procedures.

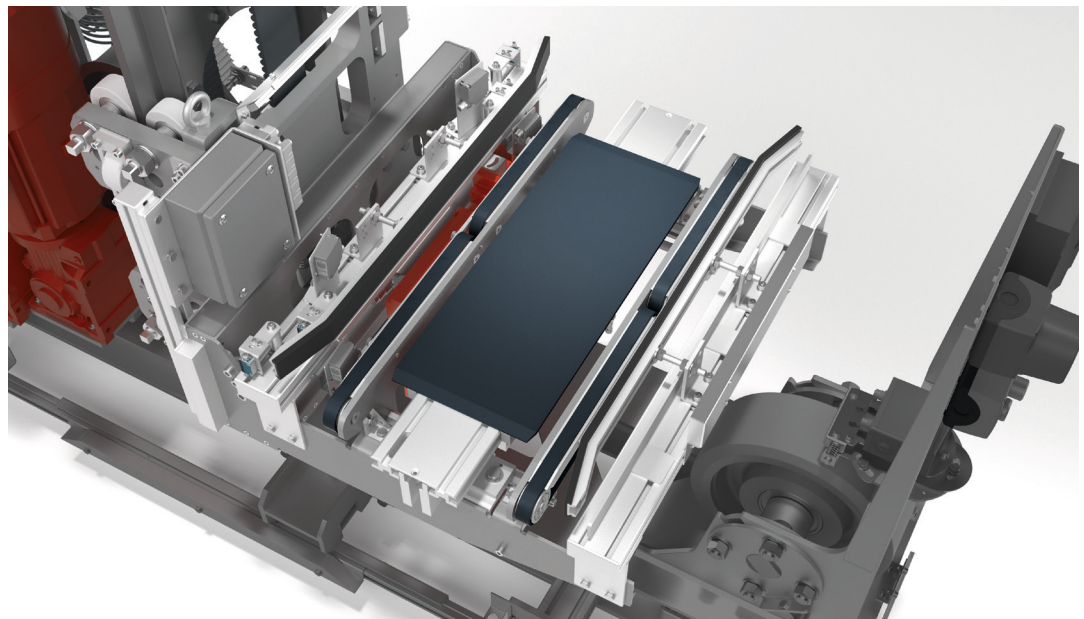
## OVERVIEW OF THE TECHNOLOGY

### MOVIKIT® CombiTelescope

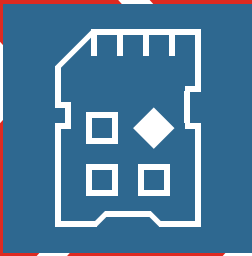
MOVIKIT® CombiTelescope is an addition to the software portfolio for storage/retrieval systems. This software module makes it very easy to incorporate a combi telescope load handling device with a telescope and up to four belt conveyors for loading and unloading crates, containers, and boxes. It is generally used in automated small parts storage systems.

### Functions

- Load handling device with one telescope and up to four belts
- Measured variables primarily mechanically predetermined (lengths and spacings)
- Timing-optimized synchronization of telescope and belt conveyors with maximum dynamics



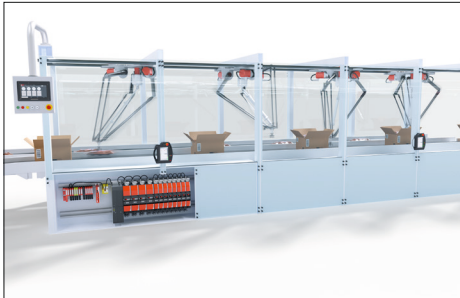
# MOVIKIT® Bundle



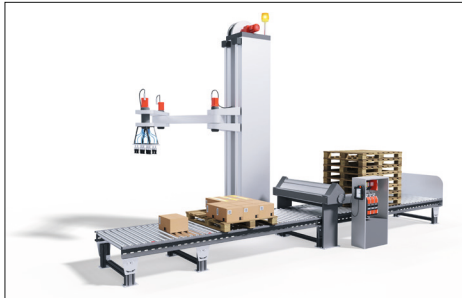
## POSSIBLE USES / TYPICAL APPLICATIONS



**Form, fill, and seal machines**  
MOVIKIT® Bundle FormFillSeal for vertical and horizontal FFS machines



**Multipackers**  
MOVIKIT® Bundle CasePacker with cam control or  
MOVIKIT® Bundle CasePacker Robotics with integrated kinematic model



**Palletizers**  
MOVIKIT® EndOfLine for gantry robots and MOVIKIT® EndOfLine Robotics for palletizing robots

## THE ADVANTAGES AT A GLANCE



**Saves time!**  
Thanks to integrated templates for programming and visualization



**Flexible!**  
Supports parameterization, can be modified, and is freely programmable – anything is possible.



**User-friendly!**  
Selecting a bundle is easy based on the type of machine.



**Comprehensive!**  
From PackML and cam switch to UPC UA – everything is included.

## OVERVIEW OF THE TECHNOLOGY

**MOVIKIT® software modules** are used to create automation and drive solutions. Various MOVIKIT® software modules are available, for everything from simple drive functions to complex automation tasks.

**MOVIKIT® Bundle** solutions consist of several MOVIKIT® software modules that are specially coordinated for the application-specific implementation of particular target applications and machine types. Combining several software modules significantly reduces the amount of configuration work required. The resulting bundle offers greater flexibility when it comes to application-specific implementation, which saves both time and money.

MOVIKIT® bundles are available separately, but can be purchased as part of a complete solution, too, including all hardware components required for the target application. Further customized contents can also be flexibly added.



MOVIKIT® Bundle FormFillSeal on CFAST memory card, SMB0001-060

<b>Customized contents</b>	– Additional software and hardware components
<b>Hardware</b>	– HMI, network, and fieldbus – Controller and runtime – Servo axes and servo drives
<b>Software</b>	– <b>MOVIKIT® modules</b> – Licenses

The following **MOVIKIT® Bundle** options are available:

- MOVIKIT® Bundle FormFillSeal
- MOVIKIT® Bundle FillSeal
- MOVIKIT® Bundle CasePacker
- MOVIKIT® Bundle CasePacker Robotics
- MOVIKIT® Bundle EndOfLine
- MOVIKIT® Bundle EndOfLine Robotics

The key components are comprehensive software licenses, the MOVIKIT® Automation-Framework programming template for an easy introduction to SEW-EURODRIVE's world of automation, MOVIKIT® MultiMotion Camming for cam-based, synchronized movements, and MOVIKIT® Web Visualization for web-based machine operation.



# MOVISUITE® V2.40 engineering software



## POSSIBLE USES / TYPICAL APPLICATIONS



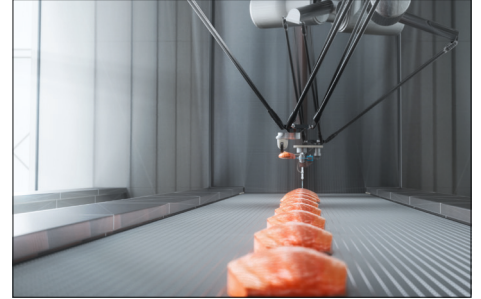
### Planning

Efficient workflows when planning drive components thanks to offline startup.



### Startup

Covers all SEW-EURODRIVE drive components, including control technology products and devices.



### Operation and diagnostics

The intuitive display of devices gives you control over the system.

## THE ADVANTAGES AT A GLANCE



### User-friendly!

Thanks to its optimized usability, MOVISUITE® is designed for easy, intuitive operation.



### Universal!

MOVISUITE® standard is the startup software for the entire MOVI-C® device portfolio, from gear unit to control technology.



### Compact!

MOVISUITE® compact includes all the functions you need to start up inverters. This reduces the amount of hard disk space required and cuts the installation time to just a few minutes.



### Free of charge!

Both versions of the MOVISUITE® software are freely available on the website, and there is no charge for using them.

## OVERVIEW OF THE TECHNOLOGY

### General

Improvements have been made to reduce the time it takes to install MOVISUITE® standard V2.40 and the amount of hard disk space required.

Compared with MOVISUITE® V2.31, the following savings have been achieved:

- Size of installation package reduced by around 27%
- Installation time reduced by around 54%

The new MOVISUITE® help function can be used offline, meaning no Internet connection is required.

MOVISUITE® can now be installed on the Windows 11 operating system.

The PROFINET name can now be assigned separately from the device designation on an end-to-end basis via configuration.

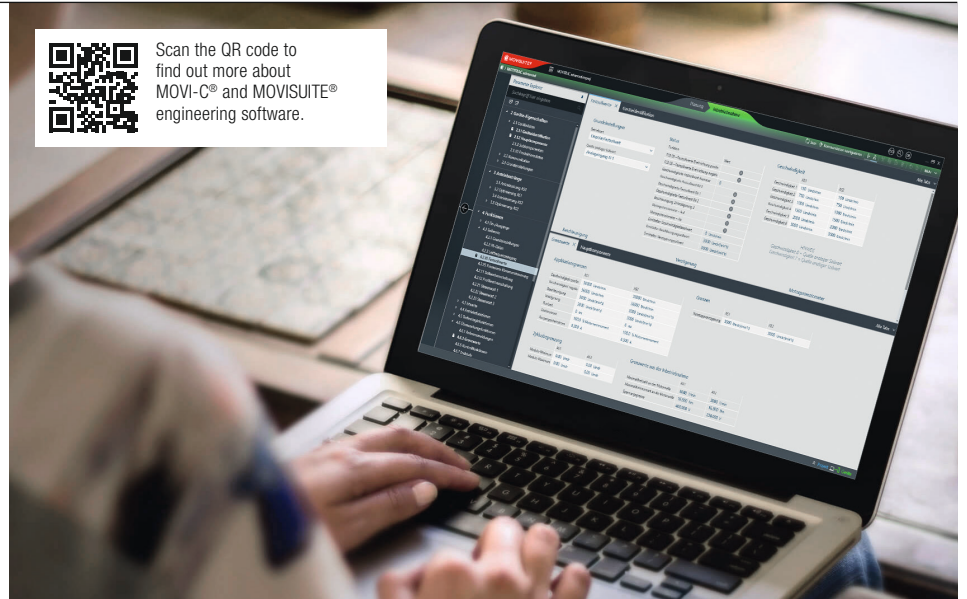
### User interface

The parameter explorer (editor) for devices from the MOVI-C® modular automation system has been revised:

- The navigation area is displayed as a tree structure with optional parameter numbers.
- A search function has been added to the parameter tree and the parameter pages.
- It is now possible to have several parameter pages open simultaneously and to arrange these in a variety of ways.
- Having been opened once, parameter pages are saved and appear in exactly the same position next time they are opened.



Scan the QR code to find out more about MOVI-C® and MOVISUITE® engineering software.



### IEC Editor

The programming environment has been modernized and is now based on CODESYS Version 3.5.18.

For existing IEC projects, Version 3.5.17 is also available as a compatibility package for new installations.

### New devices

Version 3.5.18 now supports the following new devices:

- MOVI-C® CONTROLLER UHX86A
- MOVITRAC® basic
- DCA extra-low voltage drives
- MOVIPRO® technology decentralized drive and positioning inverter
- CM2H...hygienic design drives with PSH gear unit

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## 5 Digital motor integration

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Single-cable technology	54
AC motors – DRN../DR2.. motors	55
Servomotors – CMP../CM3C.. motors	56
MOVIGEAR® classic	57

# Digital motor integration

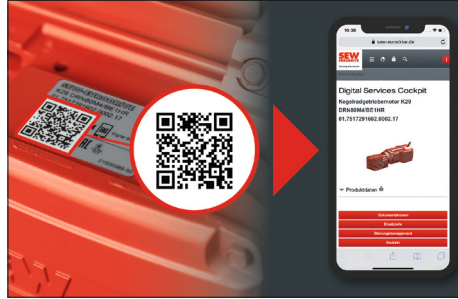
## Overview of single-cable technology

### POSSIBLE USES / TYPICAL APPLICATIONS



#### Startup

An electronic nameplate means motor and gear unit startup procedures are completed in seconds.



#### After purchasing

All details relating to assembly, disassembly, and wear parts/spare parts are available online.



#### Condition monitoring

- Brakes: monitoring of switching on/off and wear
- Gear units: oil age and temperature
- Motor: thermal properties, capacity utilization, and operating hours

### THE ADVANTAGES AT A GLANCE



#### Far less time required during startup!

Identification and auto startup of a gear-motor on an inverter from the MOVI-C® modular automation system, without the need for an engineering tool.



#### Errors prevented in the event of a malfunction!

Starts automatically after the motor is replaced, without the need for an engineering tool.



#### Standardized connection technology!

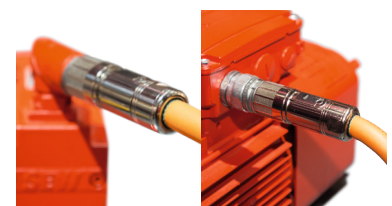
One hybrid cable covers the data connection and power supply of all SEW-EURODRIVE synchronous and asynchronous motors with/without brake.



#### 50% space saving!

Just one cable for power, encoders, temperature, brake, and transmitting further diagnostic data relating to wear, capacity utilization, and aging.

### OVERVIEW OF THE TECHNOLOGY



Installation in control cabinet	MOVIDRIVE® technology	MOVITRAC® advanced
Inverter type	Application inverter	Standard inverter
Data interface	Integrated	Configurable
Features	<ul style="list-style-type: none"> <li>– Intelligent digital data cable, turning the electric motor into an indirect, transparent station in the network</li> <li>– Uniform interface on all inverters from the MOVI-C® modular automation system thanks to a standardized hybrid connector with coaxial technology</li> <li>– Extremely robust, high-performance design for data transmission with coaxial data cable</li> <li>– Suitable for very long cables measuring up to 200 m between motor and inverter</li> </ul>	

Cables	DDI cables
Cable types	Hybrid sheathed cable, inner shielding
Material and color	PU or PVC Orange
Cross sections	– 4 × 1.5 – 4 mm <sup>2</sup> – 4 × 1.0 mm <sup>2</sup> – 1 × coax
Motor connection	Terminals or M23 (M40)
Inverter connection	Terminals or M23 (M40)

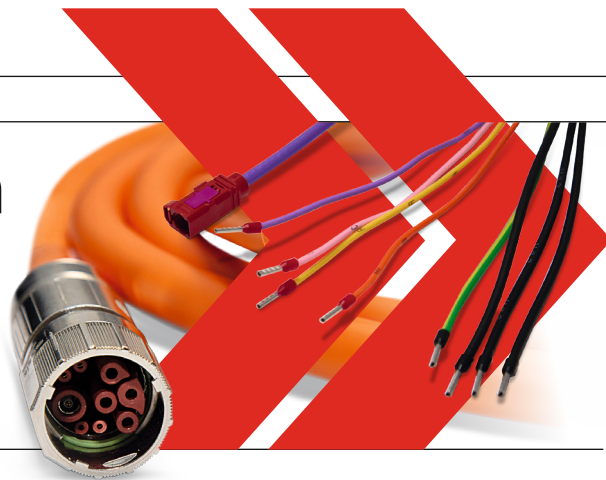
Motors	Servomotors	AC motors
Motor types	Synchronous	Asynchronous
Series	CM3C..	DRN../DR2..
Sizes	63 – 100	71 – 180
Torques	2.5 – 35 Nm	–
Power ratings	–	0.09 – 7.5 kW

Additional type designation		
Encoders	EZ2Z, AZ2Z	EI8Z
Brakes	BZ, BZ..D, BK	BE
Rectifiers	BS1Z, BG1Z	BG1Z

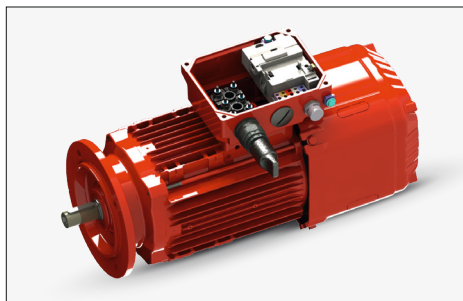


# Digital motor integration

## Single-cable technology



### POSSIBLE USES / TYPICAL APPLICATIONS



#### Design for the motor

The end of the cable is standardized with an M23 or M40 plug connector, with optional wiring via a cable gland.



#### Cable design

Five cable cross sections ( $3 \times 1.5$ , 2.5, 4, 6, or  $10 \text{ mm}^2$ ), with  $4 \times 1 \text{ mm}^2$  and purple coax cable, for fixed or cable carrier installation.



#### Designed for the inverter

The end of the cable is optimized for connection of the power, coax, and control elements, with extensive cable shielding for EMC safety.

### THE ADVANTAGES AT A GLANCE



#### One cable rather than lots of them!

Having just one connection cable cuts down on design and assembly work and saves time and money during installation. A single cable also takes up less space, making cable routes and cable carriers smaller and less expensive.



#### Replacement made easy!

In the event of a failure, plug connectors reduce the machine/system downtime. The auto startup function detects that a component has been replaced and reduces the time required for re-commissioning and release.



#### Tested and reliable quality!

Products prefabricated to the required length by the manufacturer provide a quality pledge, with state-of-the-art, fault-free, and tested cables. Non-prefabricated cables in container format, with a 30 m, 50 m, or 100 m cable ring, can optionally be purchased for fabrication by the customer.

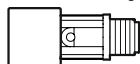


#### Long distances!

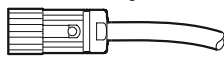
Technically innovative with hybrid stranding, the integrated digital duct with the coax cable even reliably connects 100 m and longer cables running between the drive and inverter.

### OVERVIEW OF THE TECHNOLOGY

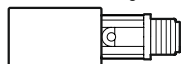
**SDB: M40** – male  
without code ring



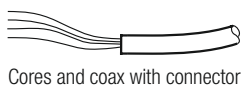
**M40** – female  
without code ring



**KDB: M40** – male  
without code ring

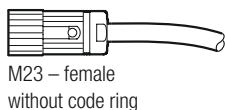


**KD: M25** cable gland  
or **M32** cable gland

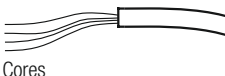


Cores and coax with connector

**KDD: M23** plug connector with  
M40 cable gland or M50 cable  
gland



M23 – female  
without code ring



Cores

Power	Control	MOVILINK®
$3 \times 6 \text{ mm}^2$	$4 \times 1 \text{ mm}^2$	$1 \times \text{coax}$
$3 \times 10 \text{ mm}^2$	$4 \times 1 \text{ mm}^2$	$1 \times \text{coax}$

- For fixed and cable carrier installation
- M40 – M40 permitted as an extension for intermediate sockets

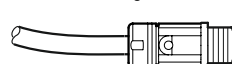
Power	Control	MOVILINK®
$3 \times 4 \text{ mm}^2$	$4 \times 1 \text{ mm}^2$	$1 \times \text{coax}$
$3 \times 6 \text{ mm}^2$	$4 \times 1 \text{ mm}^2$	$1 \times \text{coax}$
$3 \times 10 \text{ mm}^2$	$4 \times 1 \text{ mm}^2$	$1 \times \text{coax}$

**MOVILINK®**  
 $1 \times \text{coax}$

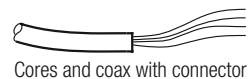
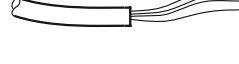
**Power**  
 $3 \times 16 \text{ mm}^2^*$   
 $3 \times 25 \text{ mm}^2^*$

\* Not from SEW-EURODRIVE

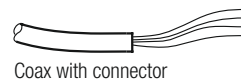
**M40** – male  
without code ring



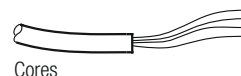
Cores with coax with  
connector



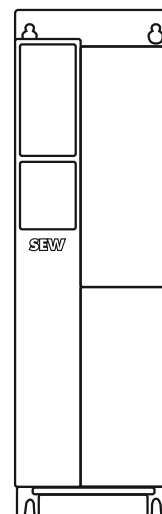
Cores and coax with connector



Coax with connector

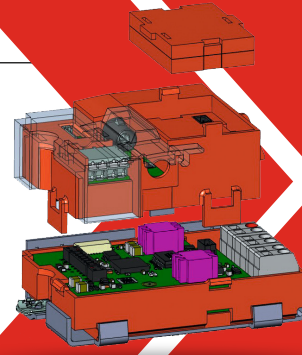


Cores



# Digital motor integration

## DRN../DR2.. motors



### POSSIBLE USES / TYPICAL APPLICATIONS



#### Basic functions

- Auto startup
- Motor identification data
- Encoder data
- Thermal motor protection



#### Brake function group

- Control
- Wear
- Temperature
- Brake capacity utilization



#### Operation function group

- Vibration of the motor and/or gear unit
- Oil change display
- Functional safety
- Motor operating hours

### THE ADVANTAGES AT A GLANCE



#### Automatic identification!

The motor transmits its data to the inverter, which sets its parameters accordingly. In the event of a replacement, the change of motor is detected and a release is requested.



#### Protective function!

The thermal motor protection status is permanently monitored. Any changes or the reaching of threshold values triggers the safety functions programmed in the inverter.



#### Braking!

Switching the brake voltage on and off, measuring the resistance based on temperature detection, using the timing of switching to detect wear, and triggering safety functions when threshold values are reached.



#### Operation!

Sensor technology on the motor and/or gear unit records operating data for digitalized transfer. A timestamp makes it possible to work out operating times and forward this information for monitoring purposes.

### OVERVIEW OF THE TECHNOLOGY

Designation	DRN../DR2..	71MS4 – 132S4	132M4 – 132L4	160M4 – 160L4	180M4 – 180L4
<b>KD1</b>	M23 plug connector (hybrid 3 × 1.5..4 mm <sup>2</sup> + PE)	Standard	Standard, based on the nominal current (I <sub>N</sub> < 22 A)*	–	–
<b>KDB</b>	M40 plug connector (hybrid 3 × 6..10 mm <sup>2</sup> + PE)	–	Alternative, based on the nominal current (23 A ≤ I <sub>N</sub> < 49 A)*	–	–
<b>KD</b>	Cable gland (hybrid 3 × 10 mm <sup>2</sup> + PE)	–	If no plug connector is required (I <sub>N</sub> < 49 A)*	–	–
<b>KDD</b>	Cable gland (> 3 × 10 mm <sup>2</sup> + PE, 3 × 1 mm <sup>2</sup> + PE) M23 plug connector (coax)	–	If, based on the nominal current (I <sub>N</sub> ≥ 49 A)*, a core cross section > 10 mm <sup>2</sup> is necessary (single-cable technology not possible)	–	–
Function (basic)	– Motor ID (electronic nameplate) – Auto startup	Yes Yes	Yes Yes	Yes Yes	Yes Yes
Function (brake)	– Brake voltage – Switching on/off digitally – Recording wear and temperature	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
Assembly options	– Built-in encoder (EI8Z) – Add-on encoder (EK8Z or AK8Z) – Brake (BE*) – Thermal motor protection (PK)	Yes Yes Yes Yes	– Yes Yes Yes	– Yes Yes Yes	– Yes Yes Yes

\* The length of the supply cable must be taken into account.

**DRN../DR2.. 71MS4 – 180L4**  
asynchronous motor –  
an insight into digital  
connection technology

**KD1:**  
M23 max.  
4 mm<sup>2</sup>



**KDB:**  
M40 max.  
10 mm<sup>2</sup>



**KD:**  
KV hybrid  
max.  
10 mm<sup>2</sup>

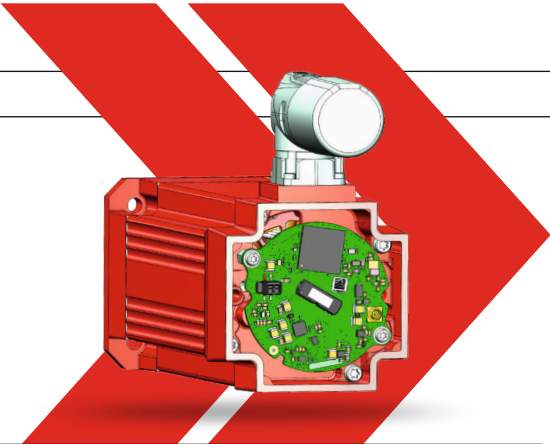


**KDD:**  
> 10 mm<sup>2</sup>  
single +  
coax



# Digital motor integration

## CMP../CM3C.. motors



POSSIBLE USES / TYPICAL APPLICATIONS



- Basic functions**
- Auto startup
  - Motor identification data
  - Encoder data
  - Thermal motor protection



- Brake function group**
- Control
  - Wear
  - Temperature
  - Brake capacity utilization



- Operation function group**
- Vibration of the motor and/or gear unit
  - Oil change display
  - Functional safety
  - Motor operating hours

THE ADVANTAGES AT A GLANCE



**Automatic identification!**  
The motor transmits its data to the inverter, which sets its parameters accordingly. In the event of a replacement, the change of motor is detected and a release is requested.



**Protective function!**  
The thermal motor protection status is permanently monitored. Any changes or the reaching of threshold values triggers the safety functions programmed in the inverter.



**Braking!**  
Switching the brake voltage on and off, measuring the resistance based on temperature detection, using the timing of switching to detect wear, and triggering safety functions when threshold values are reached.



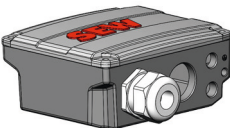
**Operation!**  
Sensor technology on the motor and/or gear unit records operating data for digitalized transfer. A timestamp makes it possible to work out operating times and forward this information for monitoring purposes.

OVERVIEW OF THE TECHNOLOGY (NEW)

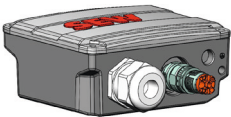
Type	Description	CMP		CM3C	
		50S – 71L	80S – 100L	63S – 71L	80S – 100L
SD1	M23 plug connector (hybrid, 3 × 1.5 mm <sup>2</sup> , 3 × 2.5 mm <sup>2</sup> , or 3 × 4 mm <sup>2</sup> + PE)	×		×	
SDB	M40 plug connector (hybrid, 3 × 6 mm <sup>2</sup> or 3 × 10 mm <sup>2</sup> + PE)	–	×	–	×
KD	Cable gland (hybrid, 3 × 4 mm <sup>2</sup> , 3 × 6 mm <sup>2</sup> , or 3 × 10 mm <sup>2</sup> + PE)	×		×	
KDD	Two cable glands (3 × 16 mm <sup>2</sup> or 3 × 25 mm <sup>2</sup> + PE) + (3 × 1 mm <sup>2</sup> + PE) M23 plug connector (coax)	–	×	–	×
Function (basic)	– Motor ID (electronic nameplate) – Auto startup	Yes Yes			
Function (brake)	– Brake voltage – Switching on/off digitally – Recording temperature – Recording wear and temperature	Yes Yes Yes –		Yes Yes – Yes	
Assembly options	– Encoder: 12-bit EZ2Z / 12-bit + 16-bit AZ2Z – Encoder: 18-bit EZ4Z / 18-bit + 16-bit AZ4Z – Brake (BZ..) – Thermal motor protection (PK)	Yes Yes (CMP50 – 63) Yes Yes		Yes Yes Yes Yes	

**New: CMP/CM3C80S – 100L synchronous motor – an insight into digital connection technology**

**KD:**  
KV hybrid  
max.10 mm<sup>2</sup>



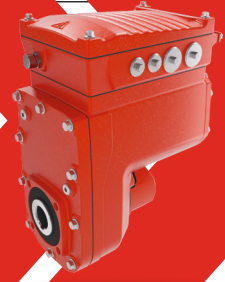
**KDD:**  
KV > 10 mm<sup>2</sup>  
single + coax





# Digital motor integration

## MOVIGEAR® classic



### POSSIBLE USES / TYPICAL APPLICATIONS



#### Basic functions

- Auto startup
- Thermal motor protection



#### Function group (encoder)

- Motor identification data
- Encoder connection data



#### Operation function group

- Vibration of mechatronics
- Functional safety
- Operating hours of mechatronics

### THE ADVANTAGES AT A GLANCE



#### Automatic identification!

The motor transmits its data to the inverter, which sets its parameters accordingly. In the event of a replacement, the change of motor is detected and a release is requested.



#### Protective function!

The thermal motor sensor status is permanently monitored. Any changes or the reaching of threshold values triggers the safety functions programmed in the inverter.



#### Speed!

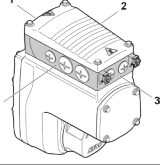
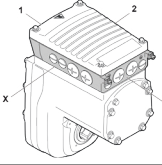
The application dictates which option to choose – encoder-free speed control or with absolute position information comprising the position within a revolution and the number of revolutions. New: 262 144 positions per revolution (2<sup>18</sup>) times 65 536 revolutions (2<sup>16</sup>).



#### Operation!

Sensor technology on the motor and/or gear unit records operating data for digitalized transfer. A timestamp makes it possible to work out operating times and forward this information for monitoring purposes.

### OVERVIEW OF THE TECHNOLOGY

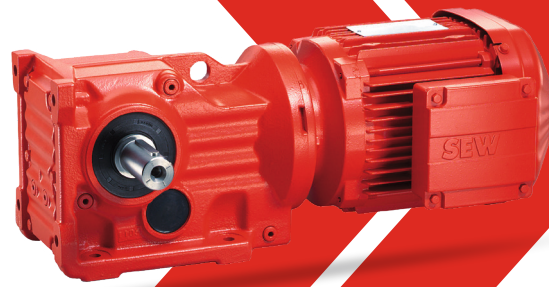
Type	Description	MGF	...1-DSM-C/DI..	...2-DSM-C/DI.. ...4-DSM-C/DI.. ...4-DSM-C/XT/DI..
		3D image with position designations		
	M16 or M25 cable gland	Position X	2 × M25 × 1.5 + 1 × M16 × 1.5	2 × M25 × 1.5 + 2 × M16 × 1.5
	+ 2 × outer ground terminals	Position 1	1 × M16 × 1.5	1 × M16 × 1.5
	+ 2 × inner PE terminals	Position 2	2 × M25 × 1.5 + 1 × M16 × 1.5	2 × M25 × 1.5 + 2 × M16 × 1.5
		Position 3	2 × M16 × 1.5	2 × M25 × 1.5 + 2 × M16 × 1.5
		Power – terminal no.:	X2_A	X2_A
		MOVILINK® DDI – terminal no.:	X16_A	X16_A
/KD1	M23 plug connector (male) (hybrid, power + PE), straight or angled	Permitted positions (male) (hybrid, power + PE), straight or angled	X or 2	X, 2, or 3
Function (basic)		Motor ID (electronic nameplate) Auto startup	Yes Yes	Yes Yes
Function (encoder)		– Encoder-free – Absolute: 12-bit + 16-bit AZ1Z – Absolute: 18-bit + 16-bit AZ3Z	Yes Yes Yes	Yes Yes Yes
Assembly standard		Thermal motor protection (PK)	Yes	Yes

---

## 6 Gearmotors and gear units

Gearmotors	59
SPIROPLAN® gear units W..19 – W..59	60
GearOil and GearFluid by SEW-EURODRIVE	61
Motor adapters – AMS.. for asynchronous servomotors and AQS.. for servomotors	62

# Gearmotors



## POSSIBLE USES / TYPICAL APPLICATIONS



**Horizontal materials handling technology**  
Roller conveyor, chain conveyor, belt conveyor



**Vertical materials handling technology**  
Vertical drive



**Materials handling technology with changes of direction**  
Rotary table, carriage

## THE ADVANTAGES AT A GLANCE



### Flexible!

Can be adapted to your requirements and needs



### Scalable!

- Speed and force
- Torque
- Power rating as required, factoring in overload
- Safety features



### Durable!

Thanks to high-quality wear components and intelligent/innovative designs



### Available!

Worldwide – taking into account laws and regulations at an early stage, making it possible for you to plan

## OVERVIEW OF THE TECHNOLOGY (NEW)

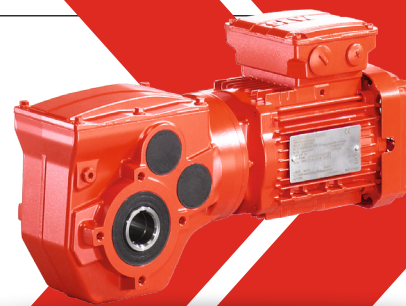


Gear units	Parallel-shaft helical gear units (F.)	Helical-bevel gear units (K.)	Helical-worm gear units (S.)	SPIROPLAN® gear units (W.)	3-phase motors
Flow of force	Axial	Angular			Number of poles
Type	–	K..9 (2-stage) 4 sizes 19 – 49	S..7 (2-stage) 7 sizes 37 – 97	W..0 (1-stage) 3 sizes 10 – 30	Type
	F..7 (2-/3-stage) 11 sizes 27 – 157	K..7 (3-stage) 12 sizes 37 – 187	S..7p (2-stage) 7 sizes 37p – 97p	W..9 (2-/3-stage) 5 sizes 19 – 59	Single-speed: DRN..., DRU..., DR2C..., DR2S..., DR2L..., DR2M.. 31 sizes: 56 – 315 Pole-changing: DR2S... 10 sizes: 63 – 180
Maximum output torque Nm	–	K..9: 80 – 500	S..7: 92 – 4000	W..0: 30 – 70	Power kW
	F..7: 120 – 20 000	K..7: 200 – 53 000	S..7p: 105 – 4300	W..9: 80 – 600	DR2S... 0.09 – 96 DRN... 0.09 – 375 DRU... 0.75 – 375 DR2C... 0.69 – 20
Reduced backlash	F..7: Yes	K..7: Yes	–	–	Frequency Hz
Gear unit ratio i	–	K..9: 2.81 – 75.20	–	W..0: 6.57 – 75.00	IE class
	F..7: 3.77 – 281.71	K..7: 3.98 – 197.37	S..7/S..7p: 3.97 – 288.00	W..9/W..9HG: 4.68 – 2426.20	DRN... IE3 Premium Efficiency DRU... IE4 Super Premium Efficiency DR2C... IE5
Double gear unit ratio i	–	K..9 R..7: 75 – 7137	–	–	
	F..7 R..7: 87 – 31 434	K..7 R..7: 94 – 32 625	S..7/S..7p R..7: 110 – 33 818	W..9 R..7: 72 – 4815	DR2S: IE1 (S1 – S3, S9)
					Details
					See the page for the relevant motor type.



# SPIROPLAN® gear units

## W..19 – W..59

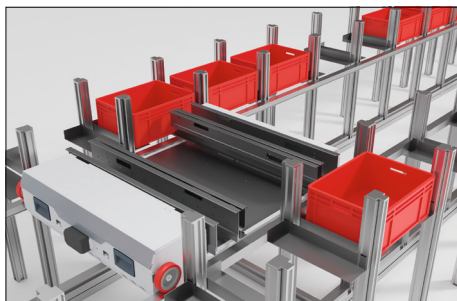


### POSSIBLE USES / TYPICAL APPLICATIONS



#### Horizontal materials handling technology

- Roller conveyor
- Chain conveyor
- Belt conveyor



#### Mobile logistics applications

- Travel drives
- Load handling devices
- Pallet transfer shuttles



#### Vertical conveyors

- Lifting stations
- Transfer units

### THE ADVANTAGES AT A GLANCE



#### Lightweight!

Particularly beneficial for lightweight machine designs and mobile applications.



#### Efficient!

Low energy costs thanks to energy-efficient gear units with a high level of efficiency across the entire gear ratio range.



#### Quiet!

Low noise development and quiet operation at any speed, for reduced noise levels at nearby workstations.



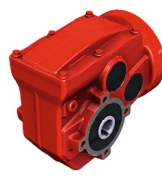
#### Future-proof!

Using the latest technologies in both the gear unit and motor ensures long-term availability and functionality.

### OVERVIEW OF THE TECHNOLOGY



Solid shaft with key and flange



Hollow shaft with keyway



Hollow shaft with key and flange



Hollow shaft with shrink disk and flange



Hollow shaft with shrink disc



Hollow shaft with shrink disk in TorqLOC® design



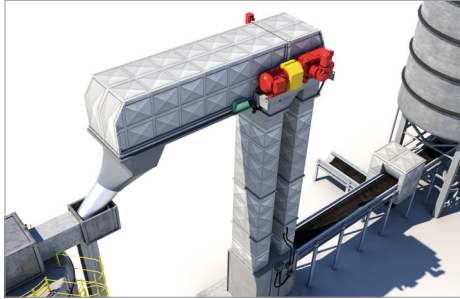
Hollow shaft with keyway and torque arm

Gear unit size	W..19 (NEW)	W..29	W..39	W..49 (NEW)	W..59 (NEW)
$M_{amax}$ Nm	80	130	200	400	600
Gear ratio range i	5.90 – 167.59	4.68 – 188.47	4.72 – 210.49	7.22 – 200.76	6.76 – 213.21
Motor power range kW	0.09 – 0.75	0.12 – 1.1	0.12 – 1.5	0.12 – 3.0	0.18 – 4.0
Hollow output shaft diameter mm	18 / 20	20 / 25 / 30	25 / 30	30 / 35	35 / 40
Flange diameter mm	110 / 120	120 / 160	160 / 200	160	200

# GearOil and GearFluid by SEW-EURODRIVE



## POSSIBLE USES / TYPICAL APPLICATIONS



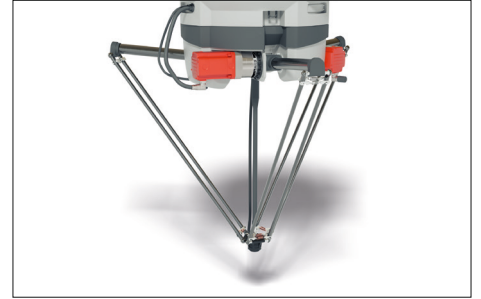
### Industrial gear unit applications

- Conveyor belt drives
- Crushers
- Cranes



### Right-angle gear unit applications

- Roller conveyors
- Load handling devices



### Planetary servo gear unit applications

- Tripod
- Filling and transport starwheels
- Machine interlinking

## THE ADVANTAGES AT A GLANCE



### Efficient!

Our GearOil and GearFluid lubricants achieve a higher level of efficiency than mineral oils, reduce energy consumption, and cut operating costs.



### Durable!

Compared to conventional polyglycol oils, our GearOil and GearFluid products can extend the service life of the lubricant and the interval between oil changes for the gear units by as much as 50%.



### Sustainable!

The base oil for our GearFluid is made from sustainable biomass and does not use any fossil raw materials.



### Environmentally friendly!

Manufacturing the base oil for our GearFluid emits 84% less CO<sub>2</sub> compared with conventional polyglycol base oils.

## OVERVIEW OF THE TECHNOLOGY

### GearOil

#### Sustainability

- Up to 50% longer service life than conventional lubricants
- High level of resistance to aging reduces wear, resulting in a longer life
- The premium lubricant's low friction coefficients mean it saves energy and reduces operating costs
- Less waste than conventional lubricants thanks to a long shelf life of up to six years

#### Features

- Maximum protection against gearing wear prevents the risk of fretting and pitting damage
- Self-cleaning properties that bind water and dirt particles prevent deposits
- High level of protection against wear reduces the risk of early rolling bearing failure

### GearFluid

#### Sustainability

- No use of fossil raw materials
- Premium lubricant made from sustainable biomass
- Biomass is sourced without any use of additional agricultural-grade land being involved
- An 84% reduction in Product Carbon Footprint (rPCF) during manufacturing
- Rapidly biodegradable in accordance with OECD 301B
- Can be used in environmentally sensitive areas
- Canister material contains a proportion of recycled plastic

#### Features

- Up to 50% longer lubricant service life than conventional polyglycol lubricants
- Longer operation phases = fewer oil changes
- Few energy losses = low energy and operating costs thanks to high efficiency
- All in all, maximum performance and optimum efficiency

Viscosities	Mineral GearOil	Synthetic GearOil	
		Polyglycol	Polyalphaolefin
150	CLP	CLP PG CLP PG NSF H1 *	CLP HC
220	CLP	CLP PG CLP PG NSF H1 *	CLP HC CLP HC NSF H1 *
320	CLP	–	CLP HC
460	CLP	CLP PG CLP PG NSF H1 *	CLP HC CLP HC NSF H1 *
680	CLP	–	CLP HC

Viscosity	Natural GearFluid
220	CLP PG rPCF



\* Suitable for use in the food and feed industries.



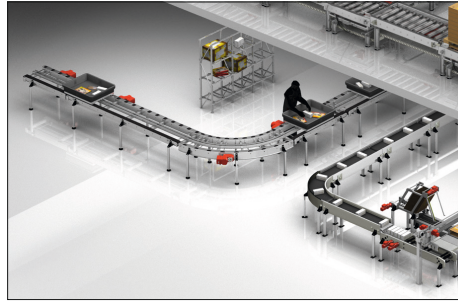
# Motor adapters – AMS.. for asynchronous servomotors and AQS.. for servomotors



## POSSIBLE USES / TYPICAL APPLICATIONS



**Conveyor belt / cycled operation**  
– Helical-bevel gear unit with AQS.. adapter



**Roller conveyor, traditional materials handling technology**  
– SPIROPLAN® right-angle gear unit with AMS.. adapter



**Vertical shaft, e.g. shuttle drive**  
– Parallel-shaft helical gear unit with AMS.. adapter

## THE ADVANTAGES AT A GLANCE

### AMS.. adapters for mounting on asynchronous motors (IEC and NEMA)



#### Lightweight!

The short design of AMS.. adapters reduces the drive's total weight.



#### Wide variety of options!

The two-part construction makes it possible to use a backstop /RS and a condensation drainhole/DH in all sizes.

### AQS.. adapters for mounting on servomotors



#### Space-saving!

A very short length means the adapters can even be used in compact machines and applications with limited space.



#### Fast and safe installation!

The smooth motor shaft can be assembled or disassembled without the coupling element getting warm. The clamping ring's spreading function simplifies this process.

## OVERVIEW OF THE TECHNOLOGY

### AMS.. adapters for asynchronous motors (IEC and NEMA)

- 14 sizes for IEC motor installation, AMS63 to AMS280
- 10 sizes for NEMA motor installation, AMS56 to AMS364/365

#### Available options:

- Backstop /RS
- **NEW:** Condensation drainhole /DH for mounting position M4, for indoor and outdoor use
- **NEW:** Reinforced bearings for a big increase in bearing service life

#### Motor adapter for mounting on:

- Helical gear units from the RX..7 series (size 57 – 107) and the R..7 series (size 07 – 167)
- Parallel-shaft helical gear units from the F..7 series (size 27 – 157)
- Helical-bevel gear units from the K..7 series (size 37 – 187) and the K..9 series (size 19 – 49)
- Helical-worm gear units from the S..7 series (size 37 – 97) and the S7..p series (size 37 – 97)
- SPIROPLAN® W..9 right-angle gear units (size 19 – 59)

### AQS.. adapters for synchronous motors

- 29 adapter variants, including 11 new designs for connecting market-standard synchronous servomotors – AQS.50 to AQS.190

#### AQSA..

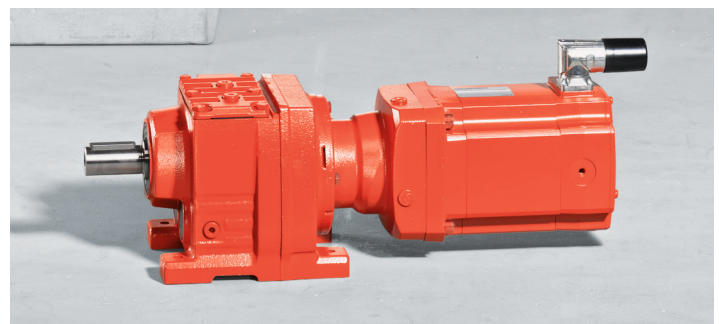
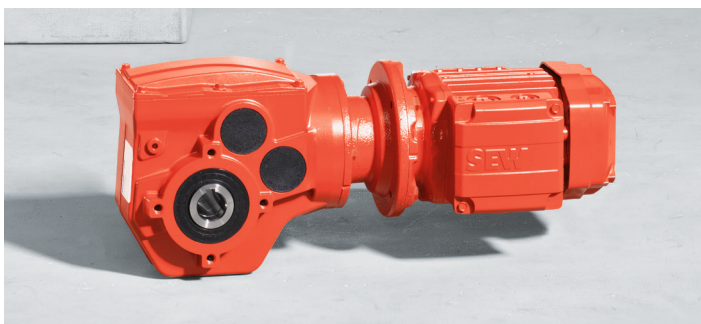
- For mounting servomotors with a shaft with keyway and key

#### AQSH..

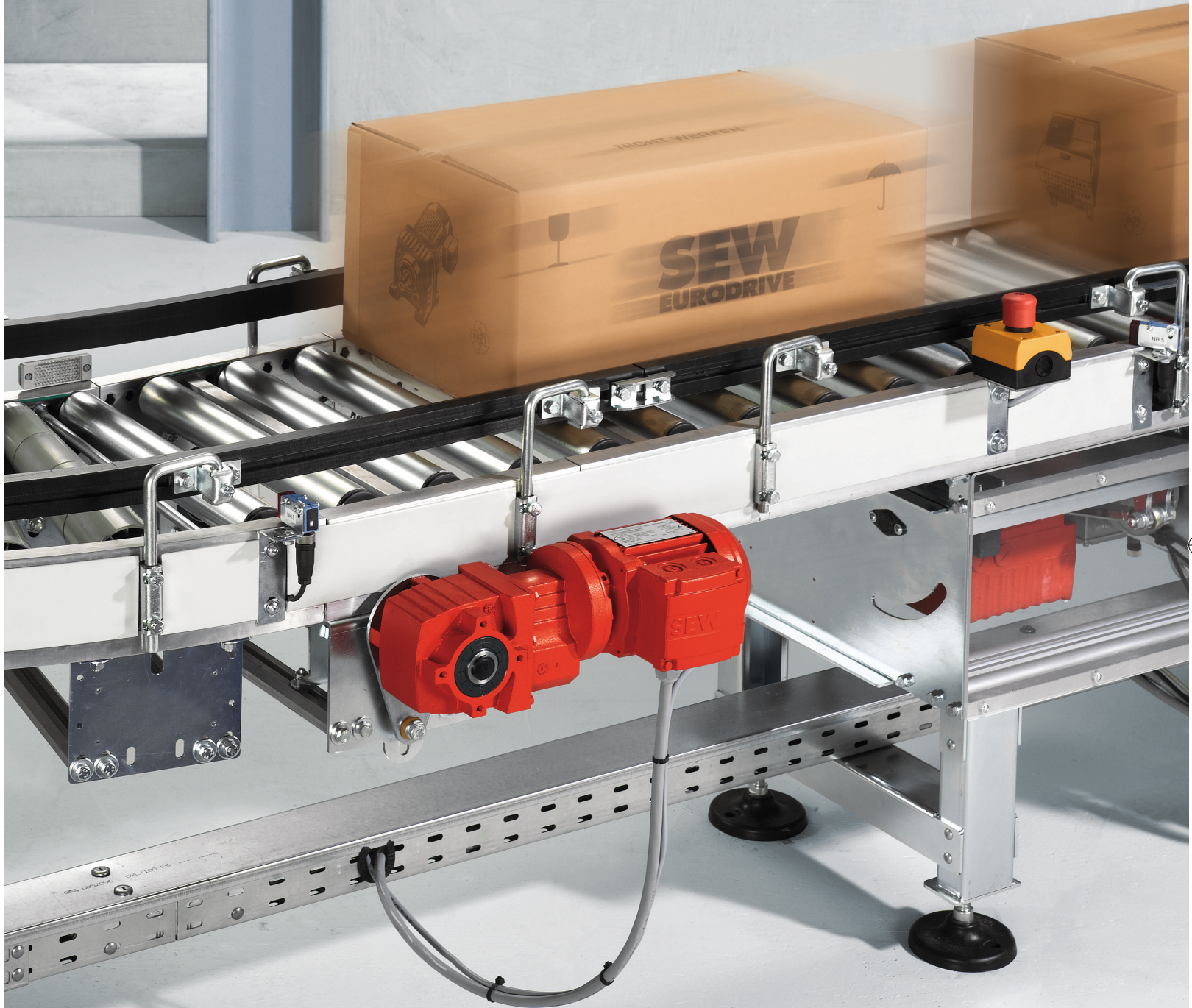
- For mounting servomotors with a smooth motor shaft

#### Motor adapter for mounting on:

- Helical gear units from the RX..7 series (size 57 – 107) and the R..7 series (size 07 – 147)
- Parallel-shaft helical gear units from the F..7 series (size 27 – 127)
- Helical-bevel gear units from the K..7 series (size 37 – 127) and the K..9 series (size 19 – 49)
- Helical-worm gear units from the S..7 series (size 37 – 67) and the S7..p series (size 37 – 67)
- SPIROPLAN® right-angle gear units (size 19 – 59)







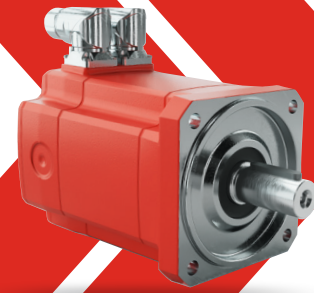


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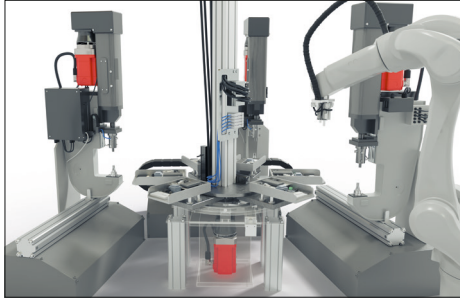
## 7 Motors

CM3C.. servomotor	65
Stainless steel servo gearmotors	66
PxG® CM3C.. planetary servo gearmotors with compact mounting	67
AC motors – DR2C.. series	68
AC motors – DR2S.. series	69
AC motors – DR2L.. series	70
DR2M.. series 8-pole torque motors	71
IE4 AC (gear)motors	72
Motor efficiency requirements	73

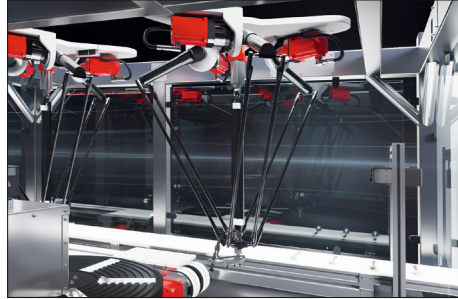
# CM3C.. servomotor



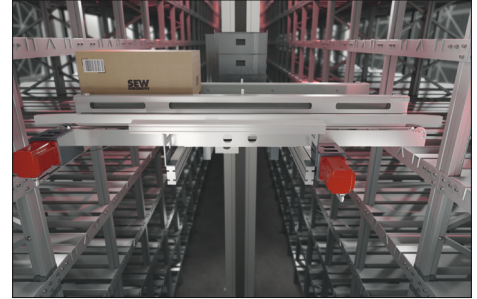
## POSSIBLE USES / TYPICAL APPLICATIONS



- Heavy-duty gantries
- Cartesian robots
- Palletizers



- Deep drawing and forming machines
- Dynamic removal and loading units
- Machine tools



- Vertical drive applications
- Materials handling technology with heavy external loads

## THE ADVANTAGES AT A GLANCE



### Saving on installation outlay and costs

... by using single-cable technology in a modular system with MOVILINK® DDI.



### Also suitable for use in the food industry

... thanks to a hygiene-friendly design.



### Fast, reliable startup with autotuning

... using the electronic nameplate.



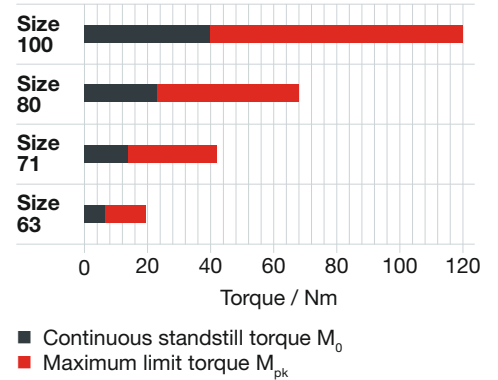
### For global markets

... thanks to international certificates and approvals (UL, CSA, EAC, ATEX, etc.).

## OVERVIEW OF THE TECHNOLOGY

	Size 63*	Size 71*	Size 80*	Size 100*
$M_0$ Nm	2.7 – 6.4	6.5 – 14	10.5 – 22.8	19 – 40
$M_{pk}$ Nm	8.1 – 19.2	19.5 – 42	31.5 – 68.4	57 – 120
Edge dimension mm	88	116	138	163
Speed min <sup>-1</sup>	3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k

\* Each size is available in three lengths – S, M, and L.



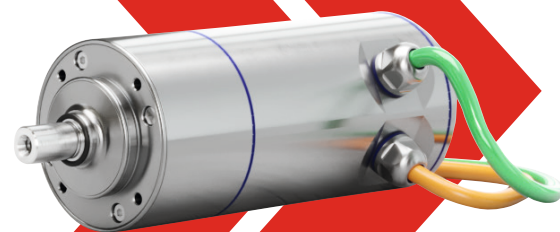
### Supported third-party encoders





# Hygiene portfolio

## PSH..CM2H.. stainless steel servo gearmotor



### POSSIBLE USES / TYPICAL APPLICATIONS



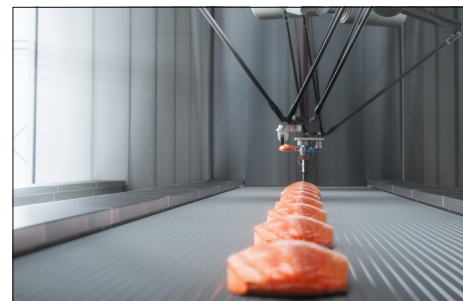
#### Aseptic filling systems

For the toughest cleaning and disinfection requirements



#### Cutting machine for cheese, sausages, etc.

Tried and tested for food contact and daily cleaning intervals



#### Filleting machines for fish, meat, etc.

Suitable for wet areas and all areas of the food processing industry

### THE ADVANTAGES AT A GLANCE



#### Fast cleaning!

Rapid product changeover and faster cleaning processes, with simple cleaning and corrosion-resistant surfaces thanks to a hygienic design and the use of stainless steel.



#### Compact design!

Thanks to a preinstalled gear unit on the motor unit, with optimized servo gearmotors for particularly precise and dynamic applications in the food industry.



#### Easy startup!

Short machine development time thanks to quick delivery of components and faster installation thanks to the electronic nameplate.



#### Quality!

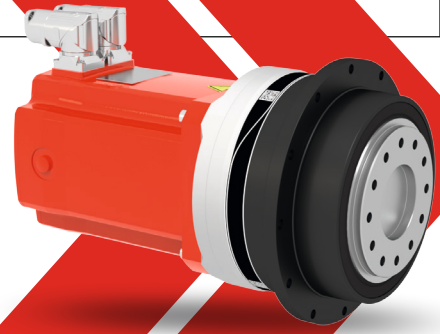
Top "Made in Germany" quality for maximum machine design flexibility, durability, short delivery routes, and long-lasting product availability.

### OVERVIEW OF THE TECHNOLOGY

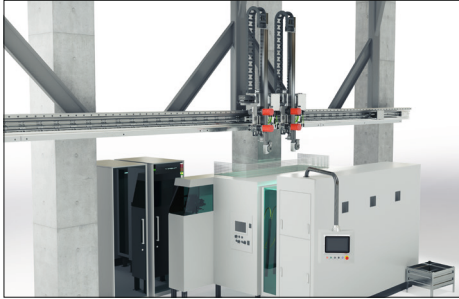
- Resistant to aggressive and strong cleaning agents as well as hot steam, and suitable for CIP/SIP (Cleaning in Place / Sterilization in Place)
- Hygienic and ergonomic design with no corners, edges, or cavities (radii > 3 mm, roughness < 0.8 µm)
- Entire portfolio comprising five sizes, each in different lengths
- Maintenance-free
- Hygiene risk minimization for the machine
- Robust, degree of protection up to IP69K, and therefore suitable for high-pressure and steam-jet cleaning
- Available with optional brake
- Optimized operation on MOVIDRIVE® inverters from the MOVI-C® modular automation system
- Feedback systems (HIPERFACE® and resolvers) for dynamic and safe positioning
- Compact size thanks to integrated planetary gear unit in various gear ratios
- Higher productivity thanks to shorter cleaning time
- Simple, flexible, and modular, with open communication interfaces
- Designed according to the guidelines of the EHEDG (European Hygienic Engineering Design Group)
- Drives comply with FDA (Food and Drug Administration) requirements
- Nominal torque of 1.0 Nm to 103.6 Nm
- Short delivery times



# PxG® CM3C.. planetary servo gearmotors with compact mounting

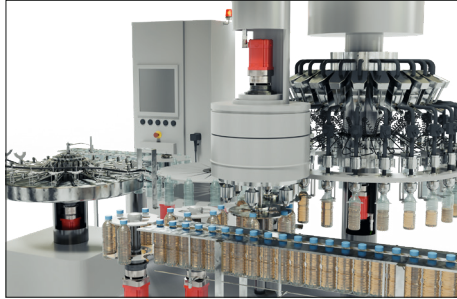


## POSSIBLE USES / TYPICAL APPLICATIONS



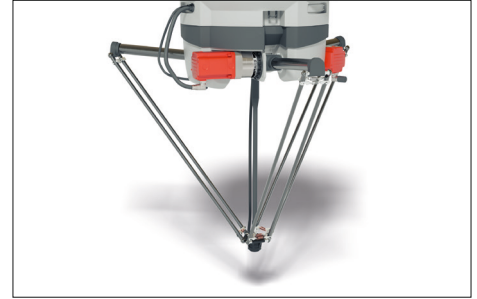
### P5.G.. MD.. CM3C..

- Machine tool gantries
- Mounting presses
- Drilling and pegging machines



### P6.G.. MD.. CM3C..

- Filling and transfer starwheels
- Printing machines
- Diaper machines



### P7.G.. MD.. CM3C..

- Delta kinematics
- Laser cutting machines
- Chain magazines and tool changers

## THE ADVANTAGES AT A GLANCE



### Space-saving!

Up to 20% more power density thanks to a short design.



### Reliable!

A continuous positive connection ensures reliable torque and speed transmission.



### Simple assembly/disassembly!

The gear unit and motor are simple to replace, thanks to an innovative interface between them.



### Durable!

Having fewer bearing and sealing points reduces thermal losses in the gearmotor and extends the service life.

## OVERVIEW OF THE TECHNOLOGY



PxG® planetary servo gear units		P5.G.. MD..	P6.G.. MD..	P7.G.. MD..
<b>Sizes</b>		21, 31, 32, 41, 42, 43, 51, 52, 62, 72		
<b>Gear ratio</b>	<b>1-stage</b>	3 – 10		4 – 5.5
	<b>2-stage</b>	12 – 100		16 – 55
	<b>3-stage</b>	64 – 1000	On request	64 – 550
<b>Acceleration torque</b>		66 – 4200 Nm	40 – 2000 Nm	80 – 6150 Nm
<b>Rotational clearance</b>		4 – 5 arcmin		
<b>Service life</b>		20 000 hours (cdf 60%)	30 000 hours (cdf 100%)	20 000 hours (cdf 60%)
<b>Output variants</b>		Solid shaft (smooth, key, or splining), flange block shaft with or without index bore		Flange block shaft without index bore
<b>Lubrication for life</b>		GearOil Poly E1 by SEW-EURODRIVE or Grease HL 2 E1 by SEW-EURODRIVE, also in H1 (food grade)		
<b>Seal</b>		Premium Sine Seal or labyrinth seal (in the case of grease lubrication)		

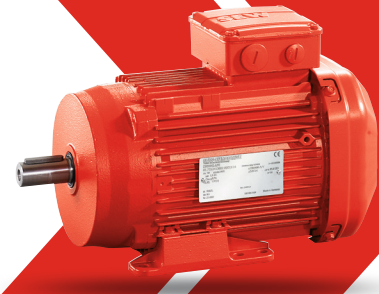


CM3C.. synchronous servomotors	Size 63*	Size 71*	Size 80*	Size 100*
<b>Standstill torque <math>M_0</math> Nm</b>	2.7 – 6.4	6.5 – 14	10.5 – 22.8	19 – 40
<b>Dynamic limit torque <math>M_{pk}</math> Nm</b>	8.1 – 19.2	19.5 – 42	31.5 – 68.4	57 – 120
<b>Flange edge dimension mm</b>	88	116	138	163
<b>Speed class min<sup>-1</sup></b>	3000 / 4500 / 6000	2000 / 3000 / 4500 / 6000	2000 / 3000 / 4500 / 6000	2000 / 3000 / 4500

\* Each size is available in three lengths – S, M, and L.



# IE5 solutions – DR2C.. series synchronous motors

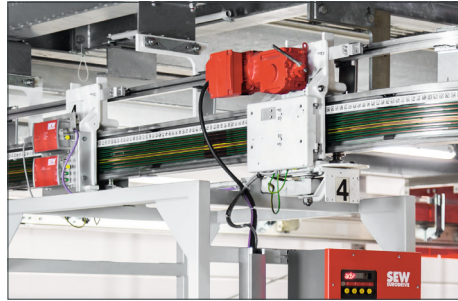


## POSSIBLE USES / TYPICAL APPLICATIONS



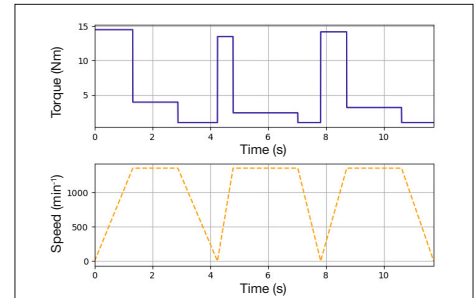
### Fine-tune your materials handling

Materials are moved fast and without any collisions. Saving energy – which used to be of secondary importance – is now an equal priority in the production process.



### Use speed to your advantage

Optimize motor speed and, therefore, overall speed. To make your conveying system energy efficient, only run motors as fast as you actually need to.



### Customize load profiles

Put an end to the oversizing of drives and make better use of overload capacity. Stretch out drive tasks in terms of time/energy, reduce idle periods, and put productivity and energy saving on an equal footing.

## THE ADVANTAGES AT A GLANCE



### Maximum overall efficiency!

Efficient solutions utilize high-quality components and unlock further energy-saving potential in relation to system time management by making use of the range of speeds.



### Standard-based efficiency!

IE5 energy efficiency is measured to IEC 60034-2-3 and certified in the standard-based classification of the highest IE class with the maximum speeds from IEC TS 60034-30-2.



### Strength is optional!

Many possible uses, thanks to two speed classes, the IE5 efficiency class, and the option of making greater use of the thermal capacity.



### Part of a modular system!

Four installation lengths in the 4-pole design and six installation lengths in the 6-pole design are DR2C.. components of the DR.. modular motor system with all its options (connectors, encoders, brakes, forced cooling fans, etc.).

## OVERVIEW OF THE TECHNOLOGY



### MOVIDRIVE® modular and MOVI-C® CONTROLLER UHX45 performance class

- Nominal line voltage: 3 × AC 380 – 500 V
- Nominal power of power supply module: 10 – 110 kW
- Axes: 2 – 180 A, 2 × 2 A – 2 × 8 A
- Overload capacity: 250%



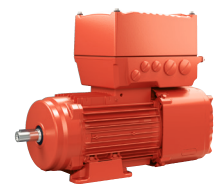
### MOVIDRIVE® technology/system and CBG21A keypad

- Nominal line voltage: 3 × AC 380 – 500 V
- Nominal power: 0.55 – 315 kW
- Overload capacity: 200%



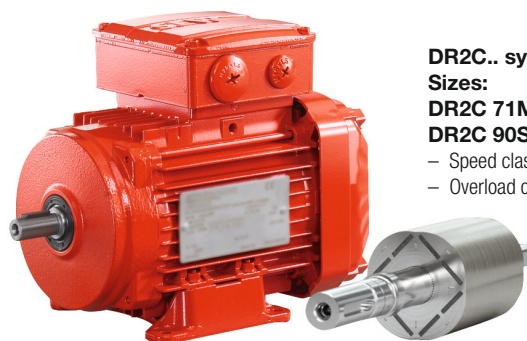
### MOVITRAC® advanced

- Nominal line voltage: 3 × AC 380 – 500 V
- Nominal power: 0.25 – 315 kW
- Overload capacity: 150%



### MOVIMOT® advanced

- Nominal line voltage: 3 × AC 380 – 500 V
- Nominal power: 0.37 – 2.2 kW
- Overload capacity: 210%



### DR2C.. synchronous motors

#### Sizes:

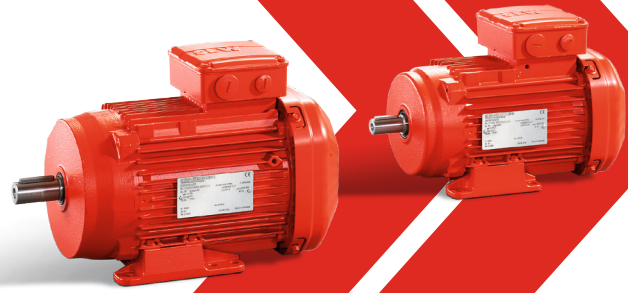
DR2C 71MS4 – 80MA4  
DR2C 90SA6 – 132SA6\*

- Speed classes: 2000 and 3000 min<sup>-1</sup>
- Overload capacity: 200 – 250%

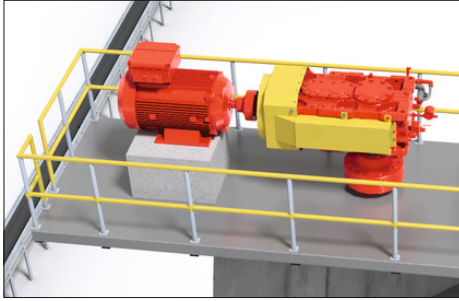




# AC motors – DR2S.. series



## POSSIBLE USES / TYPICAL APPLICATIONS



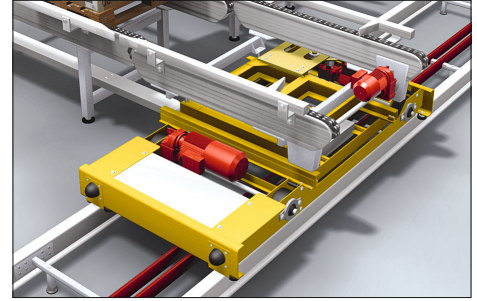
### Continuous duty (S1)

Motors in line operation with a high continuous load, for crushing, pulverizing, and grinding



### Inverter-only mode (S9)

Motors operating on the inverter only, with movements at different speeds, for transporting, accelerating, and decelerating



### Cycle mode (S3/xx%)

Motors with/without brakes in line operation with high, varying on and off times, for turning and positioning

## THE ADVANTAGES AT A GLANCE



### Tailored to your needs!

Continuous duty (S1), inverter-only mode (S9), or cycle mode (S3/xx%), with velocity/speed and force/torque/ power rating as required, also taking overload/safety factors into account.



### Long life and reliable operation!

Thanks to high-quality wear parts and intelligent, innovative designs, you benefit from long maintenance and inspection cycles.



### Available and legally compliant!

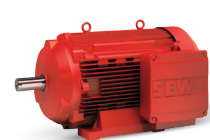
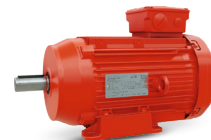
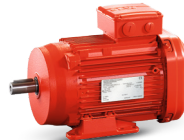
Our closely knit global network of sites ensures the same parts are available all over the world, taking into account laws and regulations at an early stage and making it possible for you to plan.



### Dynamic and robust!

High continuous and peak torques in the standard AC motor make it easier for you to select the right elements in the drive train – braking and holding, position and speed sensors, thermal and mechanical protection, etc.

## OVERVIEW OF THE TECHNOLOGY



Operating mode	Technology	4-pole DR2S 56M4 – 80M4	4-pole DR2S 90S4 – 160L4	4-pole DR2S 180M4 – 225S4	4-pole DR2S 250M4 – 280S4
<b>S1</b>	50 Hz power ratings kW	0.09 – 1.1	1.5 – 18.5	22 – 45	–
	60 Hz power ratings kW	0.09 – 1.1	1.5 – 18.5	22 – 45	–
	hp	0.12 – 1.5	2.0 – 25	30 – 60	–
	Frequencies Hz	50, 60, 50/60	50, 60, 50/60	50, 60, 50/60	–
	IE class for line-operated motors (IEC 60034-30-1)	IE1	IE1	IE1	–
		Note for EU27 countries: S1 with IE1 – motors not permitted according to (EU) 2019/1781.			
<b>S9</b>	53 Hz power ratings kW	0.13 – 1.2	1.7 – 21	24 – 53	60 – 95

Operating mode	Technology	4-pole DR2S 63MS4 – 80M4	4-pole DR2S 90S4 – 160L4	4-pole DR2S 180M4 – 225S4	4-pole DR2S 250M4 – 280M4
<b>S3/40%</b>	50 Hz power ratings kW	0.22 – 1.4	1.9 – 23	27 – 55	–
	60 Hz power ratings kW	0.27 – 1.7	2.3 – 26	30 – 60	–
<b>S3/25%</b>	50 Hz power ratings kW	0.25 – 1.5	2.2 – 26	31 – 63	–
	60 Hz power ratings kW	0.29 – 1.8	2.4 – 28	33 – 66	–
<b>S3/15%</b>	50 Hz power ratings kW	0.30 – 1.8	2.5 – 33	37 – 75	–
	60 Hz power ratings kW	0.30 – 1.8	2.5 – 33	37 – 75	–

# AC servomotors – DR2L.. series

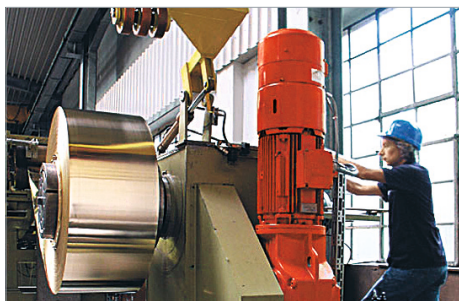


## POSSIBLE USES / TYPICAL APPLICATIONS



### Cranes

Speed-based start-stop operation on the girth gear, and rope hoist drive with a wide range of lifting and lowering speeds



### Winders

Winding/unwinding with constantly changing speeds and loads



### Intralogistics

Travel unit and lifting drive in the form of a position-based, dynamic brakemotor with a low-backlash helical-bevel gear unit

## THE ADVANTAGES AT A GLANCE



### Choice of dynamic levels and speeds!

Two alternative dynamic peak torques (D1 or D2) for force/torque and four different speeds to suit your requirements, also taking into account overload, safety factors, and hazards.



### Standard-compliant and legally compliant!

DR2L.. motors are designed in accordance with the internationally applicable IEC 60034 standard. As inverter-only motors, they are not subject to any legislation on minimum efficiency anywhere in the world.



### Information whenever you need it, including ideal combinations!

Scan the QR code below to obtain online details of DR2L.. motors with an SEW-EURODRIVE frequency inverter in just a few clicks.



### Dynamic and robust!

Extremely high continuous and peak torques in the standard AC motor design make it easier for you to select the right elements in the drive train – braking and holding, position and speed sensors, thermal and mechanical protection, etc.

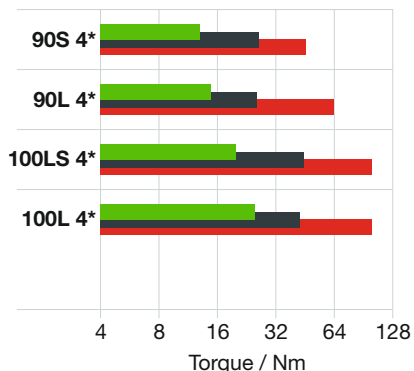
## OVERVIEW OF THE TECHNOLOGY

Technology	4-pole DR2L 90S4 to 100L4				4-pole DR2L 112M4 to 160L4				4-pole DR2L 180M4 to 225S4			
Voltage V	340 – 320				340 – 330				360 – 330			
Connection type	Star	Star	Delta	Delta	Star	Star	Delta	Delta	Star	Star	Delta	Delta
Frequency Hz	43 – 42	60 – 59	73 – 72	103 – 102	42 – 41	58	72 – 71	101	41	58 – 57	71	101
Speed class min <sup>-1</sup>	1200	1700	2100	3000	1200	1700	2100	3000	1200	1700	2100	3000
Nominal torque Nm	12 – 26	12 – 26	12 – 25	11.5 – 21	36 – 140	36 – 140	35 – 135	31 – 115	165 – 300	165 – 300	165 – 300	130 – 220

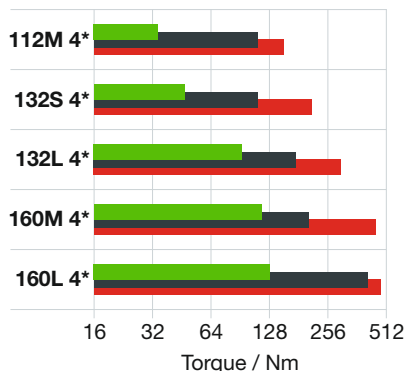


Scan the QR code to find out more about motor/inverter characteristic curves!

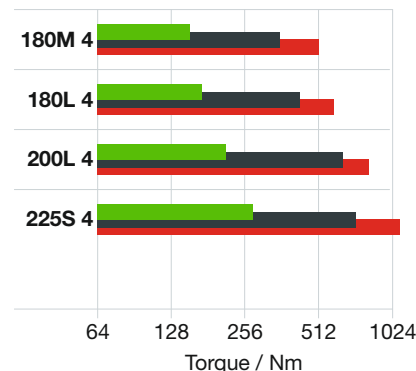
■ Nominal ■ D1 peaks ■ D2 peaks



■ Nominal ■ D1 peaks ■ D2 peaks

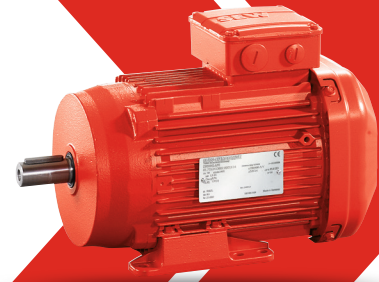


■ Nominal ■ D1 peaks ■ D2 peaks

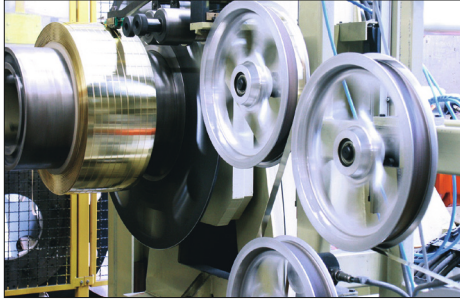


\* New sizes in the DR2L.. series.

# DR2M.. series 8-pole torque motors

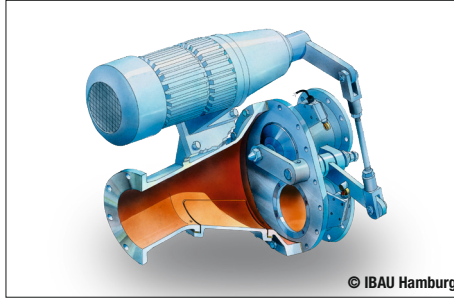


## POSSIBLE USES / TYPICAL APPLICATIONS



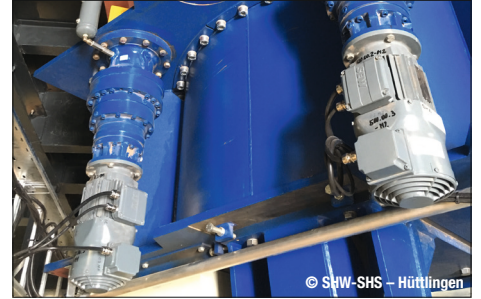
### Winding

Unwinding wound materials in a controlled manner, keeping tensions within the permissible range.



### Holding

Counteracting external forces to keep valves and switches closed or hold them in position.



### Moving

Enabling load-based reduction of the motor speed down to zero without thermal self-destruction.

## THE ADVANTAGES AT A GLANCE



### Short-circuit-proof design!

Designed to allow load-side braking to standstill and operation when the rotor is blocked.



### Opposite directions!

Also designed to allow a stator rotating field and rotor rotation in opposite directions, which ensures controlled braking while in motion. The limit for the counter-rotating torque is minus 1.8 times the nominal speed.



### Strength is optional!

Four different operating modes make correct selection easier.  
A) Star connection (in S1)  
B) Delta connection (in S3/15%)  
C) Also combined, with two data sets  
D) Delta connection with forced air cooling (in S1) for 50 Hz or 60 Hz



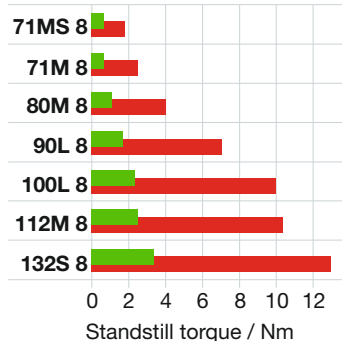
### Part of a modular system!

Seven torque motor sizes in an 8-pole design complement the current 12-pole designs. They also form part of the modular system of gear units and motors with all its options (connectors, encoders, brakes, forced cooling fans, etc.).

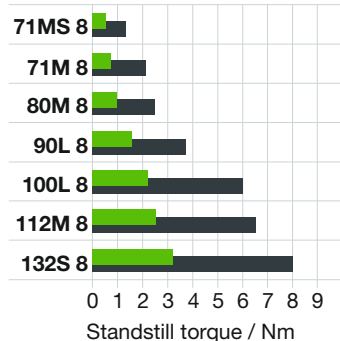
## OVERVIEW OF THE TECHNOLOGY

Operating mode	A)	B)	C)	D)
Data sets	1	1	2	1
Type of ventilation	Not ventilated (IC 410)	Not ventilated (IC 410)	Not ventilated (IC 410)	Forced air cooling (IC 416)
Connection type	1: Star	1: Delta	1: Star 2: Delta	1: Delta
Cyclic duration factor %	1: S1/100	1: S3/15	1: S1/100 2: S3/15	1: S1/100

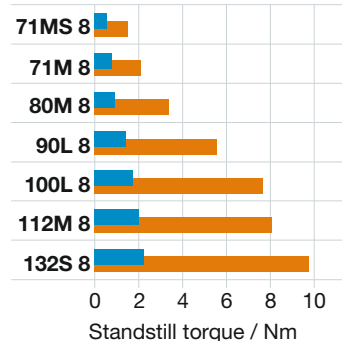
■ A): DR2M.. in S1 @ 50 Hz  
■ B): DR2M.. in S3/15% @ 50 Hz



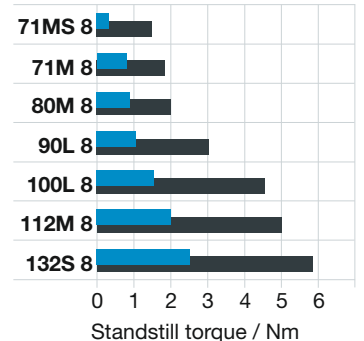
■ A): DR2M.. in S1 @ 50 Hz  
■ D): DR2M../V in S1 @ 50 Hz



■ A): DR2M.. in S1 @ 60 Hz  
■ B): DR2M.. in S3/15% @ 60 Hz

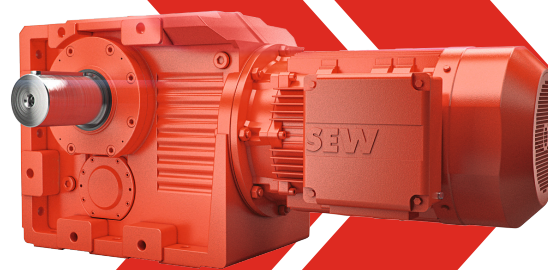


■ A): DR2M.. in S1 @ 60 Hz  
■ D): DR2M../V in S1 @ 60 Hz





# IE4 (gear)motors and IEC AC motors



## POSSIBLE USES / TYPICAL APPLICATIONS



### Sewage

Pumps, filters, and aerators are run continuously, making them ideal applications for IE4 motors.



### Bulk material

Continuously transporting sugar, for example, puts drives under unrelenting strain. IE4 motors cope better.



### Cement

Distributing, conveying, milling, and packing limestone and clinker – all these jobs can be done more energy efficiently with IE4 motors.

## THE ADVANTAGES AT A GLANCE



### IE4 line-operated motor efficiency classes – scalable from 0.75 kW to 375 kW!

Velocity/speed and force/torque/power rating as required, with overload/safety factors also taken into account.



### Replace something worse or start off efficiently!

Reduce energy consumption with a retrofit or new design, and replicate something more cost-effectively – with public funding under certain circumstances.



### Available and legally compliant!

IE4, as required by European regulation (EU) 2019/1781, thanks to motors with smaller power ratings from 0.75 kW and larger power ratings of up to 355 kW (50 Hz).



### Dynamic and robust!

High continuous and peak torques in the standard AC motor make it easier for you to select the right elements in the drive train – braking and holding, position and speed sensors, thermal and mechanical protection, etc.

## OVERVIEW OF THE TECHNOLOGY

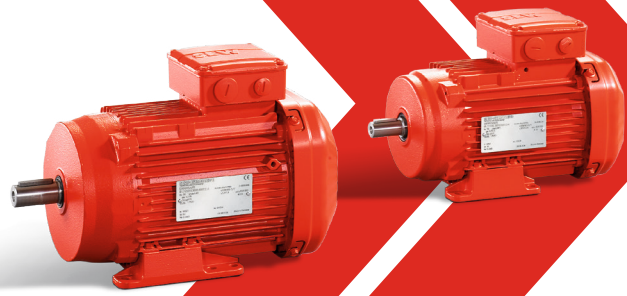
IE4 motors can also be combined with various gear units to save energy – helical, parallel-shaft helical, helical-bevel, and SPIROPLAN® gear units offer corresponding reduction ratios.

	Helical gear units	Parallel-shaft helical gear units	Helical-bevel gear units	SPIROPLAN® right-angle gear units
<b>Types</b>	RX..7 (1-stage) 6 sizes, 57 – 107  R..7 (2-/3-stage) 13 sizes, 27 – 167	–  F..7 (2-/3-stage) 11 sizes, 27 – 157	K..9 (2-stage) 3 sizes, 29 – 49  K..7 (3-stage) 12 sizes, 37 – 187	W..9 (2-/3-stage) 4 sizes, 29 – 59  –
<b>Output torques Nm</b>	RX..7: 69 – 830 R..7: 130 – 20 000	– F..7: 130 – 20 000	K..9: 130 – 500 K..7: 200 – 53 000	W..9: 130 – 600 –
<b>Gear unit ratios i</b>	RX..7: 1.30 – 8.65 R..7: 3.37 – 289.74	– F..7: 3.77 – 276.77	K..9: 2.81 – 60.27 K..7: 3.98 – 197.37	W..9: 4.68 – 213.21 –



	Energy-efficient motors (IE4)		IEC energy-efficient motors (IE4)	
<b>Types</b>	DRU90S4	DRU315H4	DRU355MQ4	DRU355ML4
<b>Number of poles</b>	4-pole		4-pole	
<b>Output power kW</b>	0.75 – 200		250 – 355	260 – 375
<b>Conformity</b>	CE, UKCA, CEL, UA.TR	ABNT, UR, CSA (available soon)	CE, UKCA, CEL	ABNT, UR, CSA
<b>Voltages V</b>	230/400 or 400/690	380/660 266/460 440/– or 460/–	230/400 or 400/690	380/660 440/– or 460/–
<b>Frequency Hz</b>	50	60	50	60

# Motor efficiency requirements



## POSSIBLE USES / TYPICAL APPLICATIONS



Applying within the European Economic Area, Ecodesign Regulation (EU) 2019/1781 defines the energy-efficiency requirements relating to electric motors and speed control systems.



From January 1, 2025

Other European countries that are not members of the EU, such as the United Kingdom, Switzerland, and Turkey, will have incorporated all relevant guidelines and regulations into their own legislation. The CE marking will therefore also be recognized in these countries.



Switzerland: Local regulation EnV 730.02  
Turkey: Local regulation SGM 2021/16  
United Kingdom: Local regulation SI 2021/745  
CE: July 1, 2023 – December 2024  
UKCA: From January 1, 2025

## THE ADVANTAGES AT A GLANCE



### Calculable!

- Indicated as simple percentages
- Multiplying by the line output power directly indicates the losses in watts
- Illustrates the lower losses when using speed control



### Interpolatable!

- Interim values are easy to interpolate
- Can be adapted to any application



### Standardized!

This introductory sentence could be omitted and the solution here would then work.  
1. Constant torque vs. speed requirement:  
 $M = 100\%$  at  $n = 25/50/90\%$   
2. Quadratically increasing torque vs. speed requirement:  $M/n$  in  $\%/ \%$  at 25/25, 25/50, 50/50, 50/90, and 100/90



### Simple!

- Indicating the relevant details in the sales documentation means the requirements can be taken into account directly at the design stage.
- Any confusion is avoided, as no additional data needs to be indicated on the nameplate for line operation.

## OVERVIEW OF THE ECODESIGN REGULATION

Period	0.12 – 0.75 kW	0.75 – 75 kW	75 – 200 kW	200 – 375 kW	375 – 1000 kW
<b>Before July 1, 2023</b>	<b>IE2</b> Three-phase motors: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz Exceptions: Ex eb motors with enhanced safety	<b>IE3</b> Three-phase motors: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz Exceptions: Ex eb motors with enhanced safety			
<b>Since July 1, 2023</b>	<b>IE2</b> Ex eb motors with enhanced safety: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz Single-phase motors	<b>IE3</b> Three-phase motors: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz	<b>IE4</b> Three-phase motors: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz Exceptions: Ex eb motors with enhanced safety	<b>IE3</b> Three-phase motors: 2-, 4-, 6-, and 8-pole, 50, 60, or 50/60 Hz	

### Changes since July 1, 2023

2- to 6-pole three-phase motors with a nominal power of 75 – 200 kW must comply with IE4. The scope has been

extended to Ex eb motors and single-phase motors, which must comply with IE2. Motors added to the ones already not permitted are as follows:

Motor type	Number of poles	Power rating	Exception
DRN..	4	75 – 200 kW	Brakemotors
DRK..	4	0.18 – 1.1 kW	As for standard exceptions
EDRS.. in category 2	4	0.25 – 0.55 kW	

### Single-phase motor

DRK.. single-phase asynchronous motors do not comply with the required IE2 energy efficiency class, which is why they have not been available for the European market since July 1, 2023.

A DR.. motor (DR2S.. S9, DRN.., DR..J) with a MOVITRAC® LTE-B+ simple inverter can be used as an alternative to the DRK.. motor.

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## 8 Industrial gear units

PPK series planetary gear units

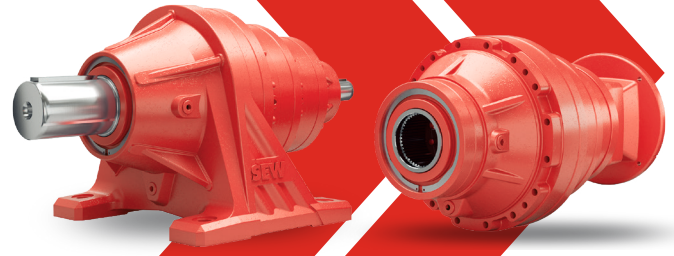
75

Generation X.e helical and bevel-helical gear units

76



# PPK series planetary gear units



## POSSIBLE USES / TYPICAL APPLICATIONS



Shredders



Rotary scrapers



Cranes

## THE ADVANTAGES AT A GLANCE



### Compact!

A space-saving solution, thanks to a more compact design than other gear unit types with the same power rating.



### Reliable!

The gearing's infinite fatigue strength based on DIN 3990 ensures its reliability (a design with finite fatigue strength is also possible).



### Flexible!

The ability to freely combine the gear units with the SEW DR.. modular motor system, 7-series helical and bevel-helical gear units, and the corresponding frequency inverters makes for a versatile solution.

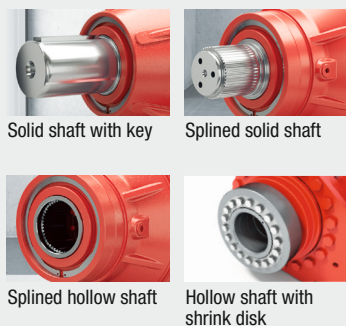


### Available fast!

Short delivery time thanks to local assembly and optimized processes.

## OVERVIEW OF THE TECHNOLOGY

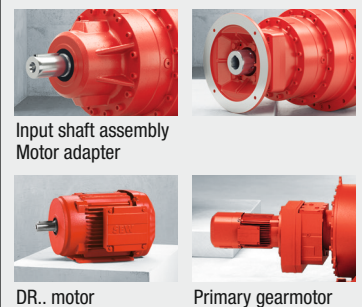
### Output shafts



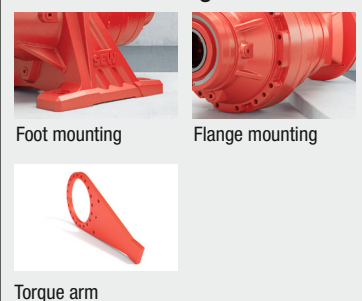
### PT100 temperature sensor



### Input end of the gear unit

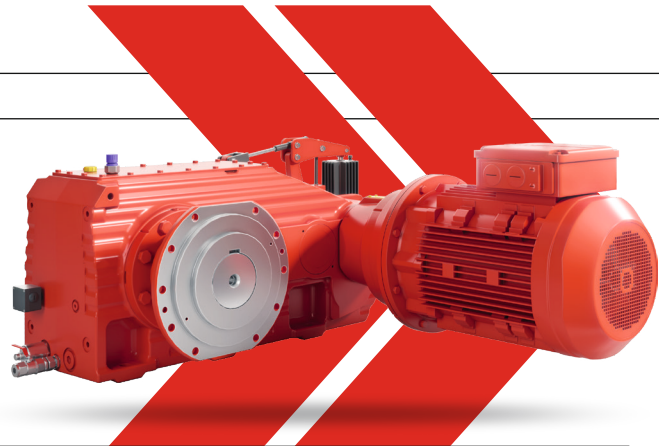


### Gear unit mounting



Size	Gear ratio i – without primary gear unit	Gear ratio i – with primary gear unit	Nominal torque $M_{N2}$ kNm
PPK.010	65 – 390	625 – 10 700	10.7
PPK.017	65 – 268	560 – 10 700	17.7

# Generation X.e industrial gear units – hoist unit design



## POSSIBLE USES / TYPICAL APPLICATIONS



Bridge cranes



Gantry cranes



Slewing tower cranes

## THE ADVANTAGES AT A GLANCE



**Optimized!**  
Ideal for hoist units – the large center distance provides sufficient space to arrange the motor and cable drum on the same side of the gear unit. What's more, the brake console makes it easy to mount drum brakes.



**Cost-effective!**  
The large center distance makes oversizing due to space issues unnecessary.



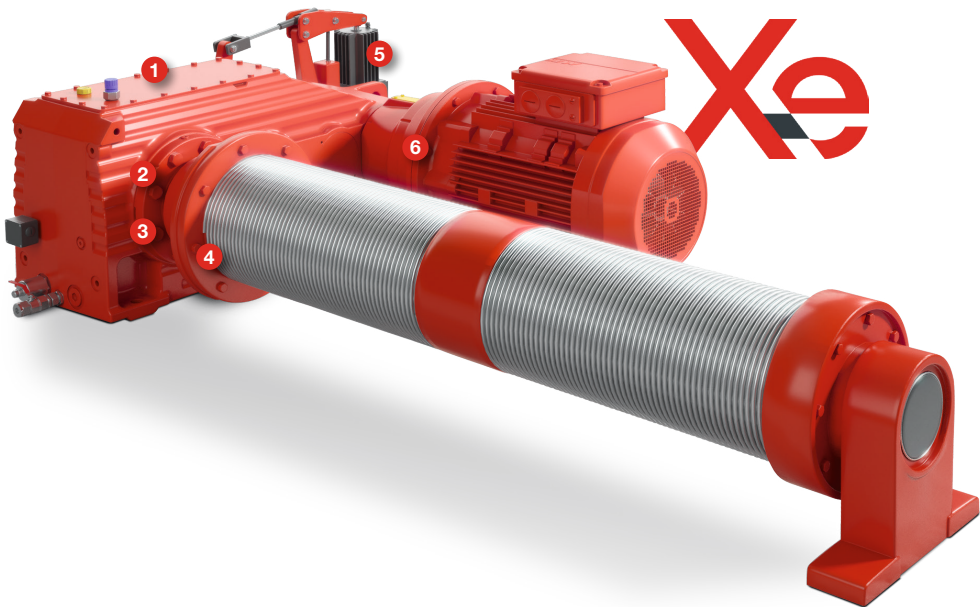
**Robust!**  
The optimized gearing topology of Generation X.e is now also available for the hoist unit design. As a result, tooth engagement is unaffected by meshing faults caused by misalignments due to external loads.

## OVERVIEW OF THE TECHNOLOGY

Gear unit design	Stages	Gear ratio i	Nominal torque $M_{N2}$ kNm
X..e/HC helical gear unit	3- or 4-stage	14 – 250	12.8 – 175

## GENERATION X.e – HOIST UNIT DESIGN

- 1 U-construction – the motor and cable drum are on the same side of the gear unit
- 2 Optimized gearing topology of Generation X.e
- 3 Various sealing systems, such as a radial labyrinth seal
- 4 The bearings and solid shaft are among the reinforced components
- 5 Optional brake and brake console for a drum brake complying with DIN 15435
- 6 Optional motor adapter, including elastic coupling for IEC sizes 132 – 355







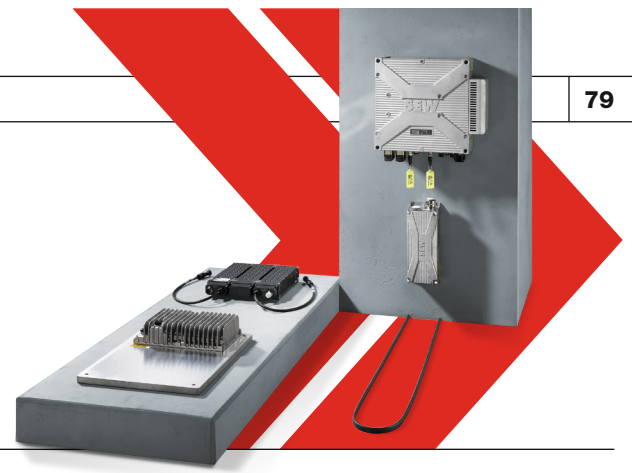


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## 9 Contactless energy transfer system

MOVITRANS® line	79
MOVITRANS® line with pick-up	80
MOVITRANS® spot	81

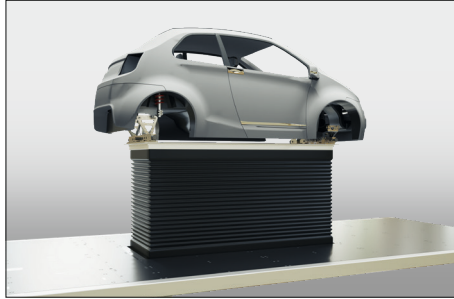
# MOVITRANS® line – contactless energy transfer system



## POSSIBLE USES / TYPICAL APPLICATIONS



**Pallet transfer shuttles**  
– Transport systems in logistics centers



**Skillets with a lift table**  
– Hoists or shuttles



**Floor transport systems**  
– Automated guided vehicle systems (AGVs)  
– Autonomous mobile robots (AMRs)

## THE ADVANTAGES AT A GLANCE



### Scalability!

Thanks to its system modules, MOVITRANS® is easy to configure, and also to adapt to modifications and changing system tasks.



### Cost reduction!

MOVITRANS® reduces operating costs because it is easy to use, increases system availability, and minimizes maintenance outlay on a long-term basis.



### Efficiency!

Increase energy efficiency thanks to state-of-the-art component technologies and short power distribution distances in linear and point-based charging.



### Simplicity!

Make installation easier. No control cabinet is required to house the supply unit, and all inputs/outputs are designed with plug-in connections.

## OVERVIEW OF THE TECHNOLOGY

### Stationary components (system frequency 25 kHz or 50 kHz):

#### 1 TES31A decentralized supply unit

##### System frequency: 25 kHz:

Power: 8 kW – 16 kW  
(up to 45 kW in parallel connection)

##### System frequency: 50 kHz:

Power: 8 kW – 14 kW  
(up to 28 kW in parallel connection)

##### Line voltage U: 380 V – 500 V ± 10%

SAFS (Safe AC Field Stop) function via binary inputs

**New:** The SAFS functional safety feature can be combined with safety-related controllers and sensors.

#### 2 TCS31A compensation box

Compensates for a distance of 25 m to 30 m

#### 3 TLS wedge-shaped cable

Can be installed in or on the ground. The line cable has a specific wedge shape with a cross section of  $3 \times 3 \text{ mm}^2$  up to 60 A. This wedge-shaped cable is pressed into the sawn recesses along the route.

#### 4 TLS circular conductor

A medium-frequency cable with double cable jacket for floor routing. Cross section:  
–  $2 \times 8 \text{ mm}^2$  up to 60 A  
–  $25 \text{ mm}^2$  up to 60 A or up to 85 A  
–  $41 \text{ mm}^2$  for 85 A

#### Mobile components:

#### 5 MOVI-DPS® (Drive Power Solution) energy storage bundle

Energy storage or peak load buffering through double-layer capacitors. Fast and direct energy intake and energy release. High number of charging cycles possible.

#### 6 TDM90E pick-up

With a direct voltage output and energy storage unit, 1.4 kW / DC 350 V series and parallel connection possible

#### THM10E flat pick-up

Power: 1.5 kW

#### THM10C U-shaped pick-up

Nominal power: 0.8 kW

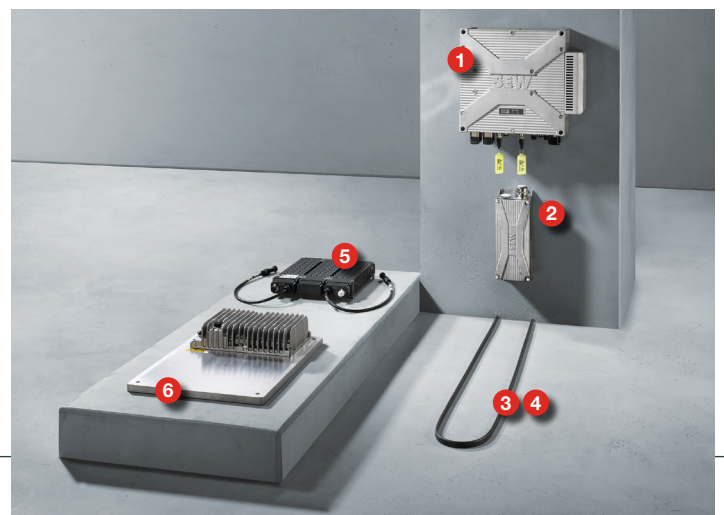
Peak power: 0.9 kW

#### TPM12B mobile converter

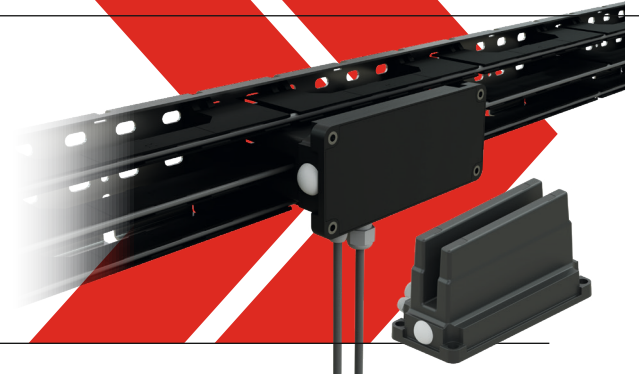
Nominal output power:

- When  $4 \times \text{THM10C}$  connected: max. 3.6 kW
- When  $2 \times \text{THM10E}$  connected: max. 3.0 kW

**MOVITRANS® technology works on the principle of inductive energy transfer and ensures the perfect power supply – contactless, quiet, low-maintenance, and wear-free.**



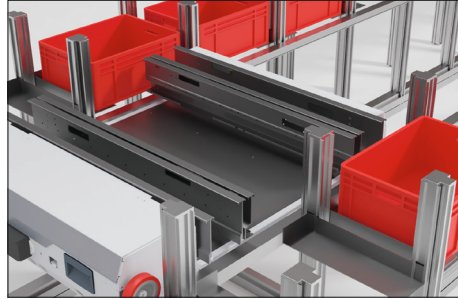
# MOVITRANS® line with TDM90C pick-up



## POSSIBLE USES / TYPICAL APPLICATIONS



Sorters



Compact shuttle solutions



Handling gantry

## THE ADVANTAGES AT A GLANCE



### Powerful!

- Higher power density
- Compact design
- Space-saving



### Simple!

- Plug-in connections
- Error-free, fast installation
- Easy to use



### Reduced costs!

- No control cabinet required
- Lasting reduction in operating costs
- Minimum maintenance costs

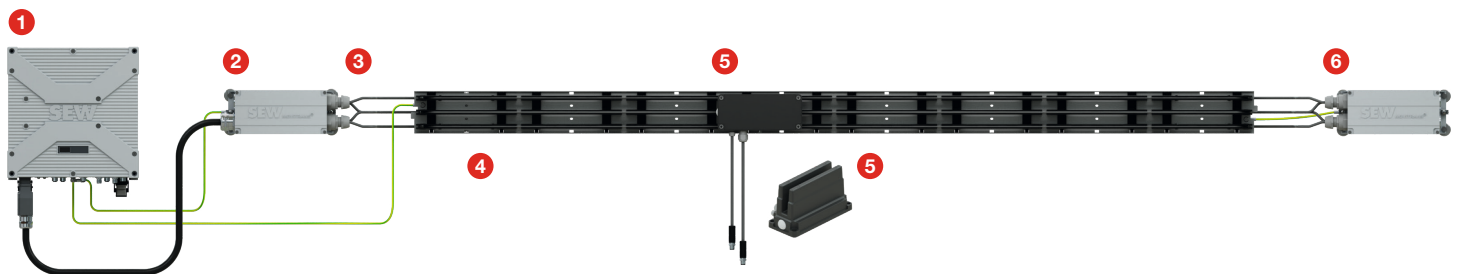


### Efficient!

- High system availability
- Low-maintenance
- Wear-free
- Easy maintenance

## OVERVIEW OF THE TECHNOLOGY

### TDM90C U-shaped pick-up / TIS90 installation system



#### 1 TES31A decentralized supply unit

- System frequency: 50 kHz
- Output power: 3.2 kW / 8 kW / 14 kW
- Line voltage U: 380 V – 500 V ± 10 %
- Output current: 30 A

#### 2 TCS11A compensation box

- Capacitive impedance values:  
1.7 ohms – 15.2 ohms
- Inductive impedance value: 1.6 ohms

#### 3 TFS10A and TFS50A field plates

- Line cable with cross section of 3 × 3 mm²

#### 4 TIS90C installation components

- TIS90C-HS01 holding rail
- TIS90C-KH01 cable holder
- TIS90C-MB01 mounting panel

#### 5 TDM90C pick-up

- Output power: 500 W
- Output voltage: DC 48 V / DC 55 V / DC 352 V

#### 6 TVS11A connection distributor

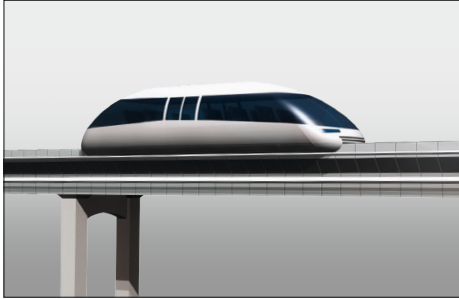
- Connection: line cable or supply cable



# MOVITRANS® spot – contactless energy transfer system



## POSSIBLE USES / TYPICAL APPLICATIONS



### People movers

- Public passenger transportation



### Floor transport systems

- Automated guided vehicle systems (AGVs)
- Autonomous mobile assistants (AMR)



### Pallet transfer shuttles

- Transport systems in logistics centers

## THE ADVANTAGES AT A GLANCE



### Flexibility!

Thanks to the innovative SAFS (Safe AC Field Stop) function, use in public spaces does not pose a problem.



### Scalability!

For charging during load transfer, different charging strategies and charging powers are possible depending on the application and requirements.



### Ground clearance!

High ground clearance for automated guided vehicles and autonomous mobile assistants thanks to the air gap between line cable and pick-up.



### Cost reduction!

MOVITRANS® reduces operating costs because it is easy to use, increases system availability, and minimizes maintenance outlay on a long-term basis.

## OVERVIEW OF THE TECHNOLOGY

### Stationary components (system frequency 50 kHz):

#### 1 TES30 decentralized supply unit

Power: 8 kW  
Line voltage U: 380 V – 500 V ± 10%  
SAFS (Safe AC Field Stop) function via binary inputs

**New:** With the SAFS function, a charging point, for example, can be safely switched off if there is no vehicle above the point. The charging point is thus safely free of a magnetic field.

#### 2 TCS50 compensation box

Compensates the field plate inductance and supply cable.

#### 3 TFS10A and TFS50A field plates

Inductive point-based charging with a high charging power of up to 11 kW. Can be installed in the ground (TFS10A) or with installation plates (TFS50A).

#### 4 TIS30A installation plate

MOVITRANS® spot with TFS50A does not have to be installed in the ground. The surfaces can be assembled and disassembled quickly using a jigsaw system based on groove-and-tongue connection of the installation plates. This increases the flexibility and adaptability of your factory.

### Mobile components:

#### 5 TDM80E pick-up

**Nominal power: up to 11 kW for 4 minutes**  
Engineering via EtherCAT®/SBus<sup>PLUS</sup>

### Nominal voltage: up to DC 60 V

Suitable for use from +5 °C to +40 °C.

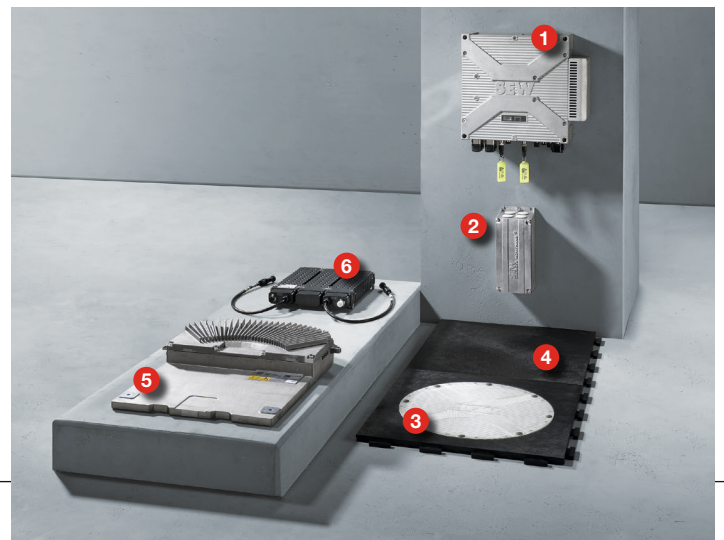
### Nominal voltage: up to DC 360 V

Suitable for outdoor use from -25 °C to +55 °C.

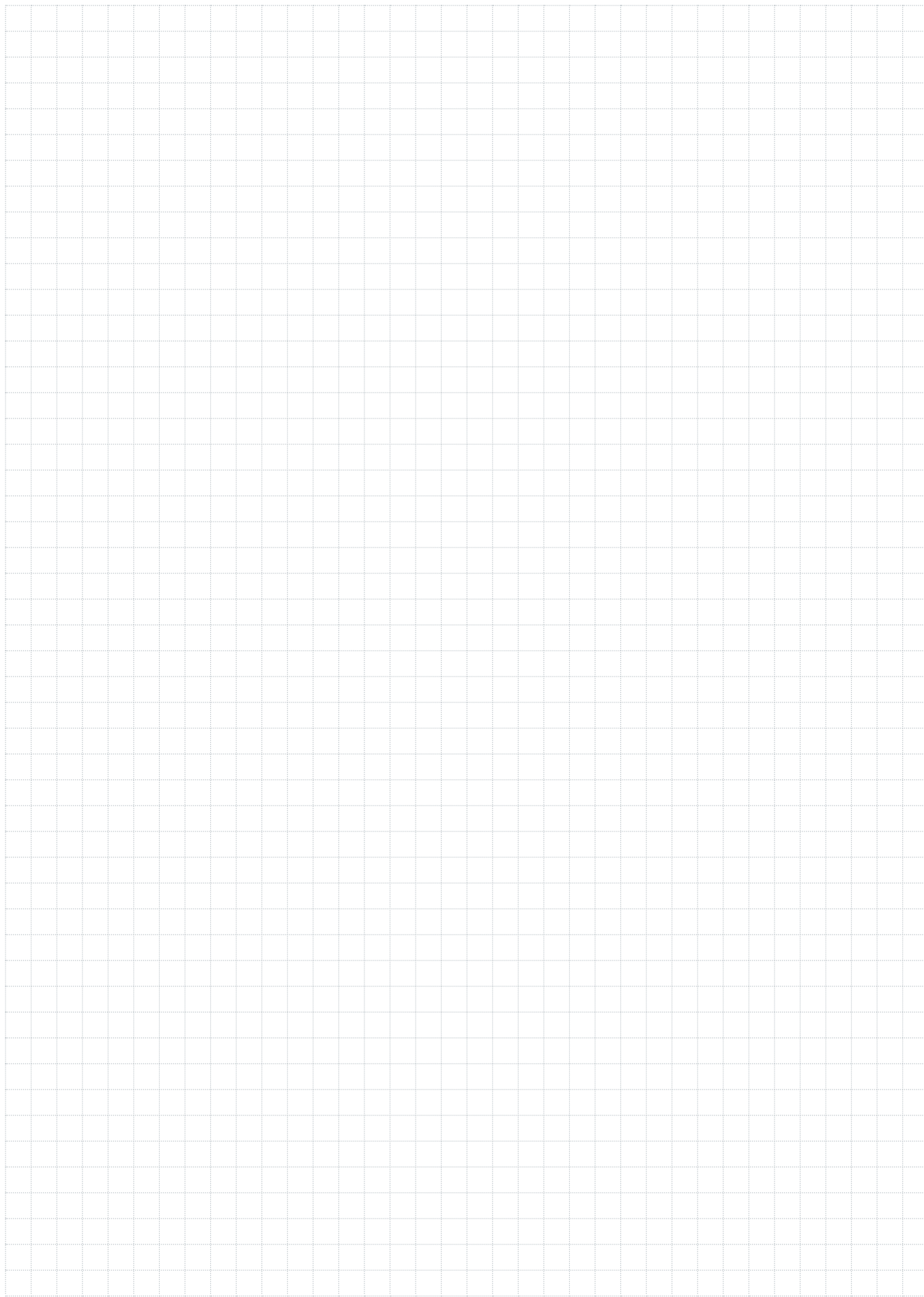
#### 6 Energy storage bundle

Energy storage or peak load buffering through double-layer capacitors. Fast and direct energy intake and energy release. High number of charging cycles possible.

MOVITRANS® spot is made up of both stationary and mobile system components that can be quickly and easily integrated into existing automation systems. The nominal air gap between the point-based charging plate and the pick-up is 20 mm. This makes it possible to achieve high transmission power even with a high ground clearance.









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