SEW EURODRIVE

PRODUCTS AND SOLUTIONS

INNOVATIONS 2021 UPDATE

Who are we? The reliable partner at your side!

Humanity and partnership, solutions and services, responsibility and quality, tradition and innovation: SEW-EURODRIVE, the owner-managed family firm has stood for all this and much more for 90 years.

As a market leader in drive and automation technology, we do not just power countless applications in virtually every industry. With over 19000 employees, we are also playing a key role in shaping the future of drive technology, for you. So that you and your systems and machines are always up to date. Not just now, but in the future as well. We want you to achieve success with us.

Country
Germany

33
locations

5
Production plants

800
sales and service experts

More than 30
Services

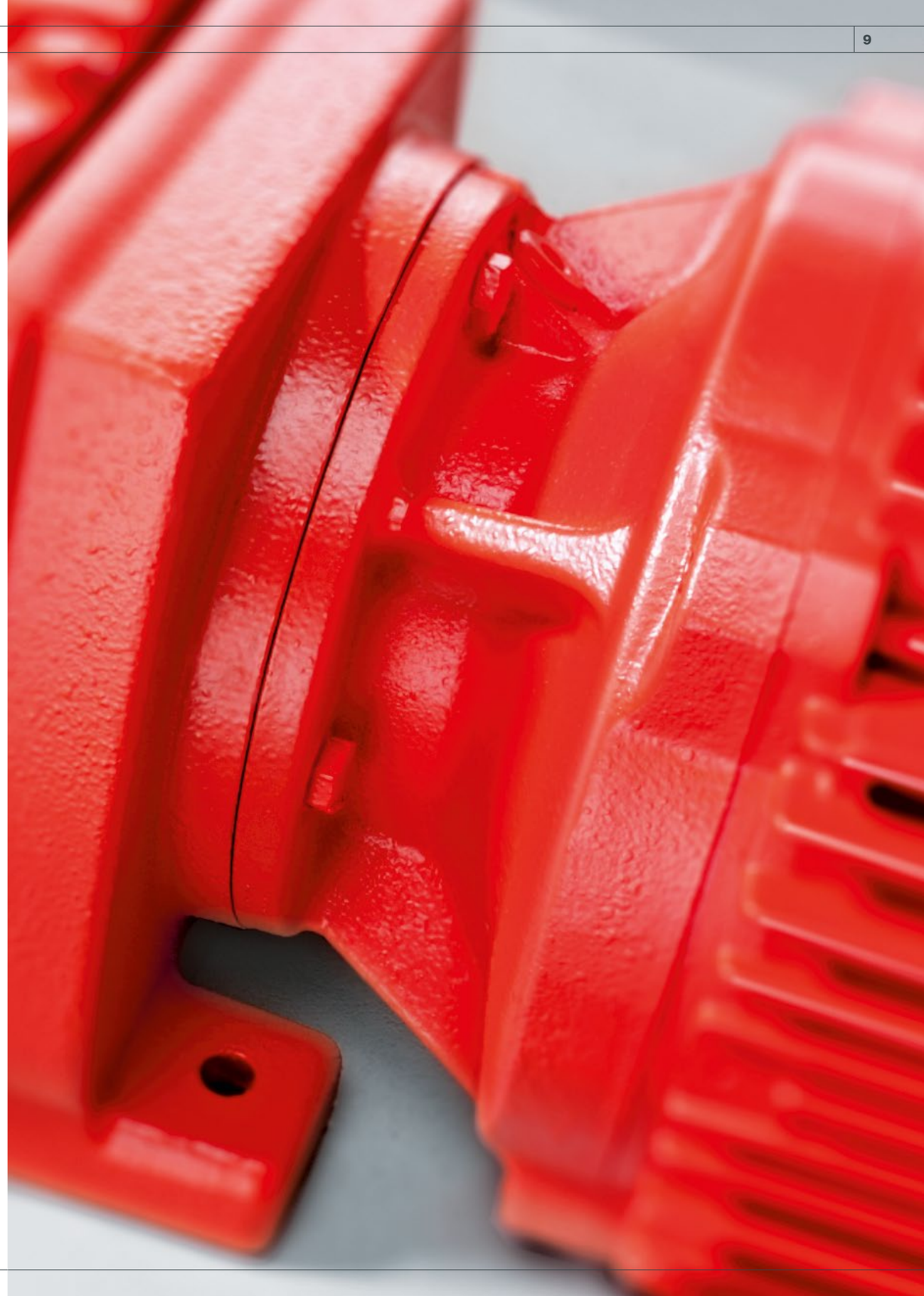
Where can you find us? We are always nearby!

With our 33 sales and service locations, 5 production plants and around 800 sales and service experts throughout Germany, we are always just a phone call away – in a personal, binding, reliable and cooperative manner. In Germany, 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.

SEW-EURODRIVE: The perfect solution for every requirement

Table of contents



MOVI-C® – modular automation system

MOVI-C®: modular automation system

USE CASES / 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

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

Simple, standardized or customized
To help ensure a quick startup, our 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. SEW-EURODRIVE offers flexible components for 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.

AN OVERVIEW OF TECHNOLOGY

The MOVI-C®
modular automation system is the all-in-one solution for automation tasks. Regardless of whether you are implementing single-axis or multi-axis applications based on standards. Whether you want to implement individual 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 high flexibility.

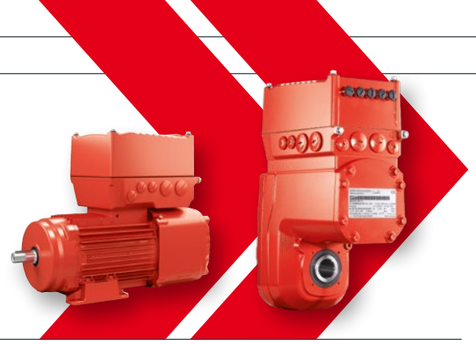
State-of-the-art fieldbus systems
Having a variety of fieldbus protocols available is essential to flexibly integrating solutions into existing infrastructures. MOVI-C® supports all the latest standard fieldbus protocols.

Integrated, digital motor interface
The integrated, digital motor interface allows for extremely robust and high-performance data transmission, which is 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 devices. Higher-level safety functions can be incorporated by inserting option cards.

MOVI-C®: decentralized drive technology



USE CASES / TYPICAL APPLICATIONS

Materials handling technology

Logistics/storage technology

Materials handling

ADVANTAGES AT A GLANCE

Scalability/continuity!
Whether control cabinet installation or inverter installations in the field: Our new inverter platform offers you continuity and scalability for your entire system.

Cost reduction!
Increase overall system efficiency – thanks to condition monitoring and predictive maintenance. Enhanced energy efficiency thanks to integrated standby mode and flux optimization.

Openness!
Wide range of integrated communication interfaces enables easy integration into modern installation topologies.

Flexibility!
Whether it is 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 and save energy and costs.

AN OVERVIEW OF TECHNOLOGY

- 1 decentralized inverter for 4 product families
- Available in 2 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

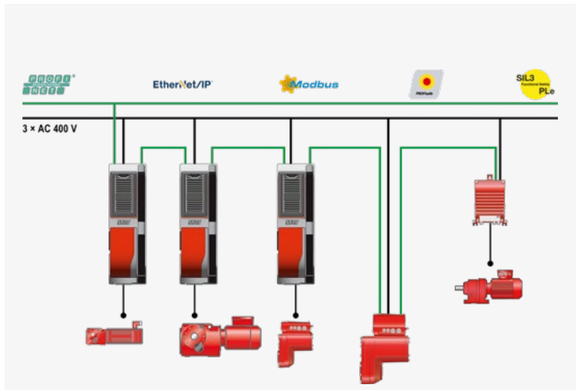
MOVIMOT® flexible
- Decentralized inverter for installation close to the motor
- Different drive types can be connected

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

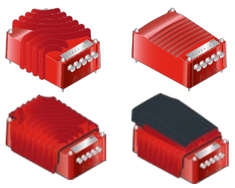
MOVIMOT® performance
- Synchronous motor (IE5) with integrated inverter

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

TOPOLOGY



MOVI-C® 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

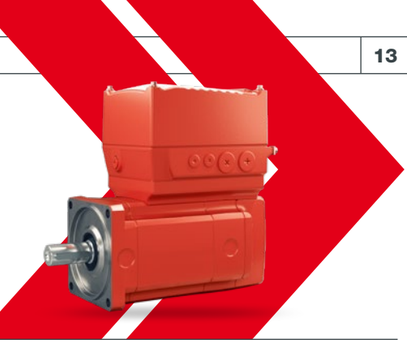
Continuous output current
100% at f = 0 Hz

Degree of protection
IP65 standard

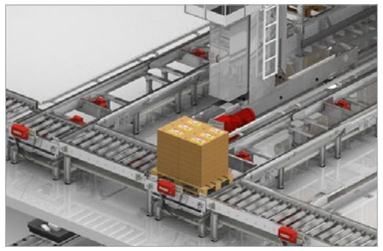
Type of cooling
Convection cooling without fan up to 4.0 kW

Ambient temperature
-25 °C to 40 °C without derating
40 °C to 60 °C with derating

Drive unit MOVIMOT® performance

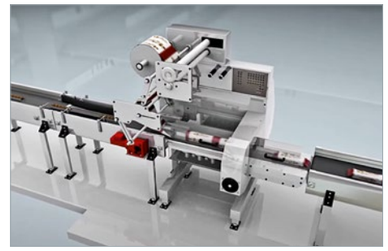


USE CASES / TYPICAL APPLICATIONS



Conveying/sorting
- Corner transfer units
- Sorter belts
- Positioning units

Materials handling
- Conveyor units
- Lift modules
- Rotary tables



Packaging technology
- Winders
- Clock synchronizers
- Positioners

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 ≥ IE4 to IEC TS 60034-30-2.

Precise!
High dynamics, with a large speed range and optional positioning using a multi-turn absolute encoder.

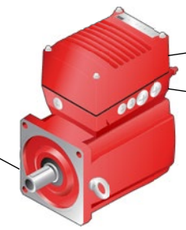
Cost-effective!
Direct wiring via terminals or quick and easy installation using optional plug connectors and the MOVILINK® DDI digital interface.

AN OVERVIEW OF THE TECHNOLOGY

	MOVIMOT® performance					
	CM3C80S 0020	CM3C80S 0025	CM3C80S 0032	CM3C80S 0040	CM3C80M 0040	CM3C80M 0055
Inverter assignment A	2.0	2.5	3.2	4.0	4.0	5.5
Nominal torque Nm	3.6	4.5	5.7	7.2	8.0	9.0
Nominal speed min^{-1}	2000	2000	2000	2000	2000	2000
Nominal power kW	0.75	0.94	1.19	1.51	1.68	1.88
Overload capacity %	300	300	300	300	300	300
Speed setting range without encoder	1:40	1:40	1:40	1:40	1:40	1:40
Speed setting range with encoder (EZ2Z/AZ2Z)	1:2000	1:2000	1:2000	1:2000	1:2000	1:2000
Motor efficiency	≙ IE5	≙ IE5	≙ IE5	≙ IE5	≙ IE5	≙ IE5

MOVIMOT® performance

Permanent magnet motor
Robust, energy-efficient synchronous motor from the CM3C.. series



Drive inverter
Decentralized inverter with communication interface

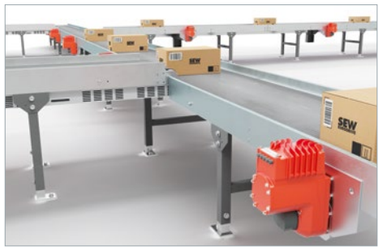
PROFINET, EtherNet/IP™, Modbus TCP,
EtherNet/IP Modbus

POWERLINK, EtherCAT®/SBus^{PLUS}, AS-Interface,
POWERLINK EtherCAT Technology Group AS-i Binary Control

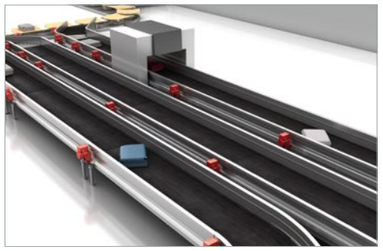
Connection unit
For cable glands and optional plug connectors

Drive unit MOVIGEAR® performance

USE CASES / TYPICAL APPLICATIONS



Parcel logistics/conveying
- Transporting and identifying
- Sorting and distributing
- Loading and unloading



Airport/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, 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.

AN 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^{-1}	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^{PLUS}, AS-Interface, binary control

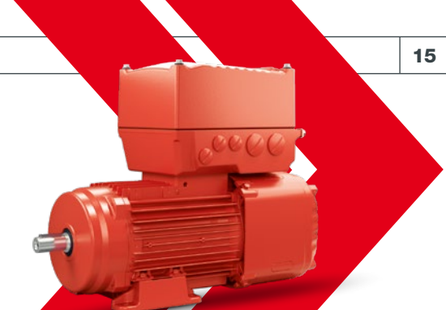
Shaft design:
TorqLOC® hollow shaft with key

Degree of protection:
IP65 standard

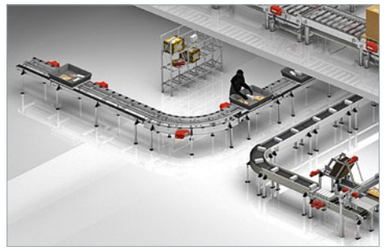
Wet-area designs for different environments

New surface protection:
- High resistance to chemicals
- Up to degree of protection IP66/IP69

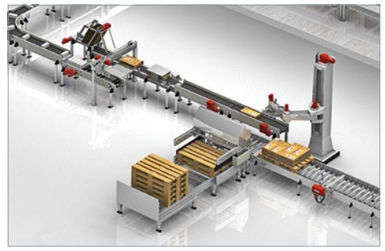
MOVIMOT® advanced drive unit



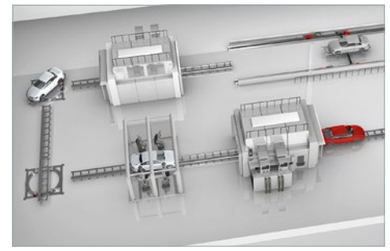
USE CASES / TYPICAL APPLICATIONS



Materials handling technology/logistics
- Roller conveyors
- Chain conveyor
- Belt conveyors



Materials handling
- Conveyor units
- Lift 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. Durability, even under harsh ambient conditions, enables universal use in different industrial environments.

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

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

AN OVERVIEW OF THE TECHNOLOGY

Supported motor sizes		DRN71M	DRN80MK	DRN80M	DRN90S	DRN90L	DRN100LS	DRN100L	DRN112M	DRN132S	DRN132M
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) I 1:1400 (with EI8Z)									
	Delta connection	1:20 (without encoder) I 1:2900 (with EI8Z)									

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

MOVIMOT® advanced

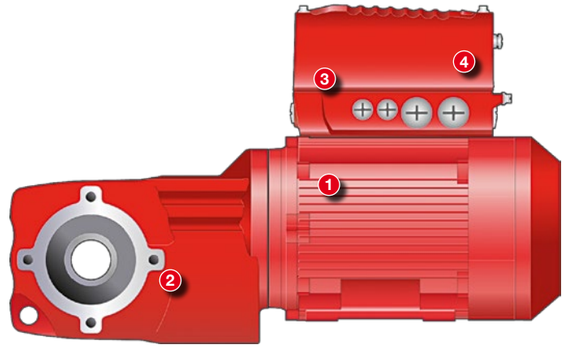
1 Asynchronous motor
Energy-efficient asynchronous motor of the DRN.. series

2 Optional gear unit
Can be combined with gear unit series 7 or 9

3 Connection unit
For cable glands and optional plug connector

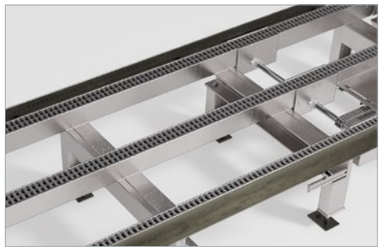
4 Drive inverter
Decentralized inverter with communication interface

PROFINET, EtherNet/IP™, Modbus TCP, POWERLINK, EtherCAT®/SBus^{PLUS}, AS-Interface, binary control



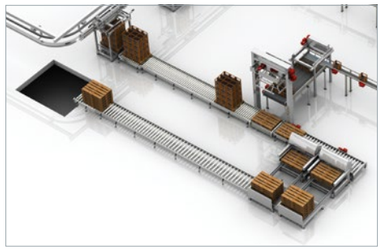
Standard inverter MOVITRAC® advanced

USE CASES / 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 preconfigured MOVIKIT® software modules.

Simplicity!
Fast, simple unit replacement in case of service without engineering PC thanks to portable memory module for storing all device data.

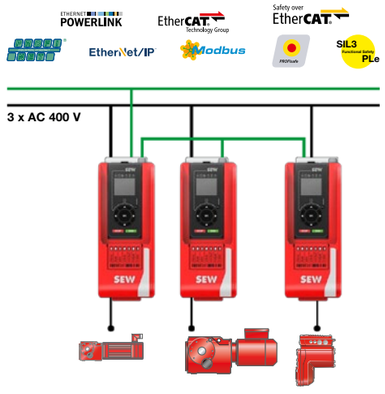
Openness!
Connection to common control systems thanks to support of various fieldbus protocols and the CiA402 drive profile.

Flexibility!
Configurable functional safety – from integrated STO safety function to higher quality safety functions and safe communication.

AN OVERVIEW OF 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	**Controlling and monitoring** – Synchronous and asynchronous AC motors with/without encoder – Asynchronous motors with LSPM technology – Synchronous and asynchronous linear motors	
Communication interface	– Integrated communication interface – choose from PROFINET, EtherNet/IP™, Modbus TCP, EtherCAT®/ SBus^{PLUS}, EtherCAT® CiA402, POWERLINK CiA402	
Functional safety	– STO (safe torque off) in PL d integrated into the basic unit – Other safety functions configurable – such as SBC, SDI or SLS – Safe communication configurable via PROFIsafe/PROFINET and FSoE – Fail Safe over EtherCAT®	
Additional features and equipment	– Configurable MOVILINK® DDI digital data interface – State-of-the-art control modes: V/f; VFC^{PLUS}; ELSM®; CFC – Control of torque, rotational speed and position – Startup via plug-in and scalable operator panels or MOVISUITE® engineering software – Simple startup using MOVIKIT® software modules – Portable memory module for easy unit replacement without engineering software	

MOVITRAC® advanced

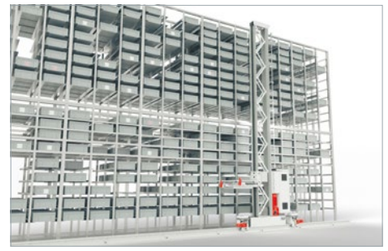


Power and Energy Solutions

USE CASES / TYPICAL APPLICATIONS

Dynamic software modules
Handling modules

Amusement rides
Big wheel



Logistics applications
Storage/retrieval system/
automated small-parts warehouse

ADVANTAGES AT A GLANCE

Scalability!
Distributed DC and AC infrastructure in any combination

Cost reduction!
– Auto-configuring components
– Greatly reduced peak power requirement of the application
– Reduction of energy costs thanks to storage capacitors in the DC link

Reliable!
– High availability of individual production cells
– Uninterrupted system operation in the event of a power failure
– Reduced harmonic load in the supply system

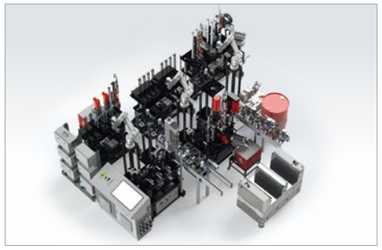
Flexible!
Faster change of the factory layout

AN OVERVIEW OF TECHNOLOGY

MDP92 power supply module with controlled DC link voltage	MDS switched-mode power supply module with AC and DC supply	MDC capacitor module DC link energy module	LSUM EDLC energy module Energy cabinet with EDLC modules
Nominal line voltage: 3 × AC 200 – 500 V DC link voltage controlled: DC 0 – 800 V Nominal power: 25 kW Overload capacity: 160%	Input voltage: 1 × AC 200 V – 3× AC 500 V or DC 150 V – 800 V Nominal output voltage: DC 24 V Nominal output current: 22.5 A	Voltage range: DC 0 – 800 V Typical energy content: 2 kWs Connection via DC bus Option for parallel connection	Voltage range: DC 0 – 800 V Energy content up to: 3000 kWs Options for both parallel and series connection

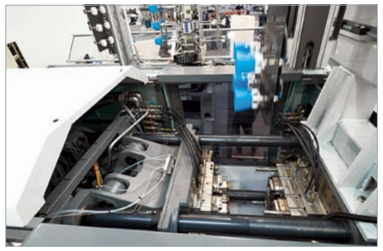
MOVI-C® CONTROLLER UHX65A-M-0x control technology

USE CASES / TYPICAL APPLICATIONS



Higher-level controller for complex systems
Systems with a large variety of sensors and actuators, e.g. 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- or 4-core variants for sophisticated applications. Higher-level controller and motion controller combined in one device.

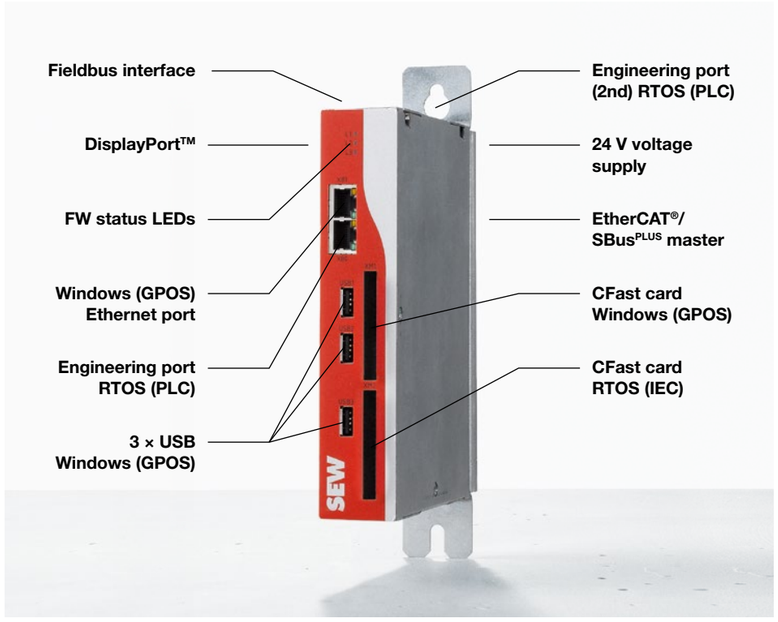
Open!
Windows/higher-level language environment and high-performance motion controller in one (4-core variant). EtherCAT® and PROFINET IO/EtherNet/IP™ sensors in parallel.

Individual!
Perfectly coordinated to the extensive portfolio for decentralized and control cabinet drive technology. Any individual customer requests can therefore be implemented.

AN OVERVIEW OF THE TECHNOLOGY

With the MOVI-C® CONTROLLER UHX65A-M, SEW-EURODRIVE has expanded the versatile controller of the "progressive" performance class with the integrated functions of a PROFINET IO controller or EtherNet/IP™ scanner. Sophisticated mixed topologies can be implemented from MOVISUITE® version 2.20 onward: use the high-performance EtherCAT® fieldbus for the most demanding motion control tasks and at the same time read out corresponding sensors and control actuators as PROFINET IO or EtherNet/IP™ master. Gain flexibility and choice in the hardware you can use for complex applications without losing the previous advantages of the UHX65A platform, such as user-friendly, fast startup via MOVISUITE®.

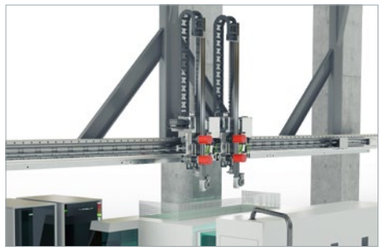
MOVI-C® CONTROLLER UHX65A (PROGRESSIVE)



MOVIKIT® Robotics

USE CASES / TYPICAL APPLICATIONS

Single-column palletizer



Machine tool gantries

Robots for handling tasks

THE ADVANTAGES AT A GLANCE

Easy!
Enormous time saving due to the fast integration of the software module into the project by means of automatic IEC code generation and adaptability of the robot program directly on the machine.

Individual!
Various kinematic models can be selected from a catalog. Customer-specific kinematic models can be integrated. The software offers significant degrees of freedom for individual solutions.

Durable!
SEW-EURODRIVE keeps components and software available on the market for about 20 years. This saves software conversion costs and obviates redesigns due to discontinuations by the supplier.

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

AN OVERVIEW OF THE TECHNOLOGY

Quick startup
The MOVIKIT® Robotics is especially easy to start up. It supports a variety of different kinematic models with different types, numbers and arrangements of joint axes. The kinematic models can be put into operation quickly and easily purely by parameterization.

Integration
Full integration into the MOVISUITE® engineering software with automatic IEC code generation enables you to start with a fully functional program. Do not waste any time selecting libraries. Start directly with your actual automation task.

Expandable with add-ons
Many other add-ons allow you to extend the functionality of your kinematic models, e.g. with Touchprobe or CollisionDetection. MOVIKIT® Robotics can also be combined with other MOVIKIT® modules. This allows you to combine kinematic models with MOVIKIT® Camming or MultiAxis-Controller.

Scalable
The MOVIKIT® Robotics can be installed on all devices from the MOVI-C® CONTROLLER portfolio. This allows you to adapt the hardware to your application.

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

Customizable program code
The program code of MOVIKIT® Robotics can be flexibly expanded. The module provides both function-oriented and object-oriented programming interfaces. This allows the integration of the program module into a full machine automation solution or the implementation of customer-specific kinematic models with special functions.

Compatible with the
MOVI-C® modular automation system, it is the all-in-one solution for automation tasks. Regardless of whether you are implementing standardized single-axis or multi-axis applications, or implementing individual and particularly complex applications from the fields of motion control or automation – MOVI-C® makes all of this possible and gives you the scope to optimize automation for new projects.

Ease of use
Once started up, the kinematic model can be operated via the MOVISUITE® RobotMonitor or directly from the IEC program. The RobotMonitor can be run both on a PC and on a separate control plate.

This means that the same user interface is always available to you for operation. The movement can be conveniently defined with SRL (the "SEW Robot Language" interpreter language) and by teach-in mode.

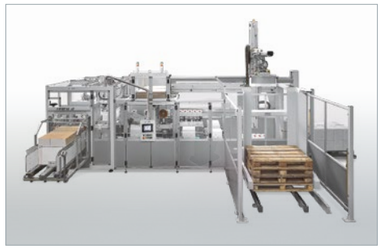
Standardized fieldbus data interfaces
Standardized fieldbus interfaces with different data widths offer you the correct interface to a higher-level controller, depending on the range of functions you require. The data interfaces do not depend on the protocol used. This means you do not have to make any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

Modular units MOVI-PLC® I/O system C

USE CASES / TYPICAL APPLICATIONS

Robotics applications
e.g. pick and place

Machine automation
e.g. FFS machine, H/V FFS machine



Palletizing systems
e.g. palletizer, pallet unloader

THE ADVANTAGES AT A GLANCE

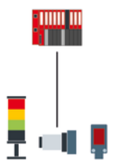
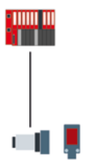
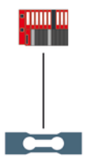
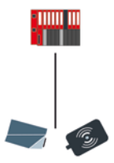
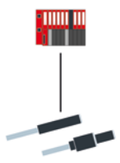
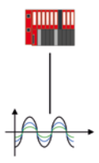
Universal!
The portfolio is supplemented by safe I/O terminals and further non-safe function modules which are operated via the same coupler.

Easy maintenance!
Easy to assemble and service thanks to extremely simple and quick assembly with a safe sliding mechanism.

Space-saving!
Space-saving, step-shaped wiring level with spring clamp technology.

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

AN OVERVIEW OF THE TECHNOLOGY

Presence control/reference initiators (binary signals)	Height check/ distance measurement (analog signals)	Evaluation of encoder signals (counter modules, SSI module)	Load cell, strain gage	Serial interfaces	Temperature measurement	Energy measurement	Protection of danger area with hand and rear area guards
ODIxxC ODOxxC	OAIxxC OAOxxC	OSM12C OSM13C OSM14C	OSM11C	ORS11C	OAI45C	OEM12C	OFI41C OFO41C
							
Optoelectronic sensors, ultrasound sensors, inductive/ capacitive sensors, laser light sensors, print mark sensors, light columns and fluid sensors	Optoelectronic distance measuring devices, ultrasonic sensors, 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. To meet all requirements in the field of functional safety, the SEW-EURODRIVE portfolio includes two FSoE I/O modules, each with 4 safe inputs and outputs. These can be integrated into your automation solution with a 3rd party safety controller.

Modular visualization system

USE CASES / TYPICAL APPLICATIONS

Development
Prefabricated templates for time-saving integration during the development phase.

Simulation and startup
In connection with the MOVIKIT® AutomationFramework for visualization of machines and systems.

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

THE ADVANTAGES AT A GLANCE

Flexible!
Flexible browser-based access through the use of web visualization and web panel.

Intuitive!
Universal engineering tool for visualization and motion applications with direct access to the variables of the controller.

User-friendly!
Time saving in creation thanks to the integration of prefabricated user interface templates.

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

AN OVERVIEW OF THE TECHNOLOGY

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

It is important to keep 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. The SEW-EURODRIVE visualization hardware has been specifically developed for use in harsh industrial environments immediately next to the machine.

Capacitive touch displays enable use, even when wearing gloves. Safety functions such as key switch and emergency stop or motionless detector are already integrated. Of course, in addition to an extensive portfolio of visualization solutions, SEW-EURODRIVE also supplies the corresponding accessories, such as prefabricated cables, mounting parts and the voltage supply – all from a single source.

SEW-EURODRIVE offers an extensive portfolio of visualization solutions for various application purposes.

Based on the MOVI-C® CONTROLLER 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. In the second step, it is possible to create a graphical user interface using the MOVIKIT® Visualization software module (Web Visualization, Visualization basic, Visualization flexible or Visualization multi). This can be freely designed or simple (free) to complex (paid) prefabricated templates (frameworks) can be used. One example is the software module MOVIKIT® Visualization addon ParameterMonitor.

For this purpose, use the Codesys user interface that you also use for IEC programming. This creates a seamless transition between the two worlds. Depending on the visualization task, visualization can be conducted on the MOVI-C® CONTROLLER or on a separate Windows PC.

MOVIKIT® StackerCrane

USE CASES / TYPICAL APPLICATIONS

Storage/retrieval systems
The MOVIKIT® StackerCrane effiDRIVE can be used for all storage/retrieval systems with up to 4 travel axes and 4 lifting axes.

Drive variants
- Single and double hoist
- 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 that can be easily started up and monitored using 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.

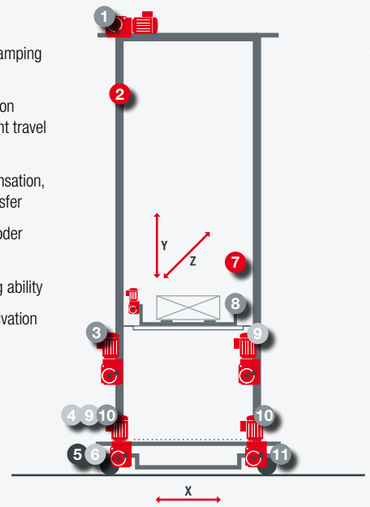
AN OVERVIEW OF THE TECHNOLOGY

Software
- Optimization of 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® software modules StackerCrane, MultiMotion and MultiAxisController
- 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 independent of the subordinate MOVIKIT® functions

Power and Energy Solutions
- Up to 40% reduction in energy consumption by means of storage solutions
- Using storage capacitors in the DC link reduces power peaks from the supply system by a factor of 7 to 10
- Intelligent power failure management
- Block 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. Top drive for vibration damping on the mast
2. TowerSway anti-oscillation control through intelligent travel profiles
3. Rope elongation compensation, also in case of load transfer
4. Electrical braking if encoder fault occurs
5. SRS units with cornering ability
6. Emergency mode/deactivation of external encoder
7. Anti-oscillation control – BellySway for load handling device
8. Auto leveling: Anti-skew also 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 the MOVIKIT® StackerCrane effiDRIVE in combination with:

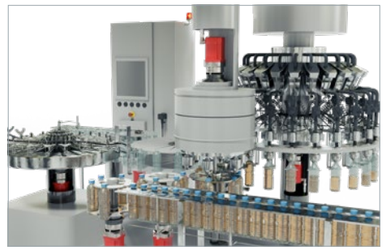
MultiMotion · MultiAxisController · Motion add-on AntiSway · MOVIKIT® Custom CurveDrive

Gear units/gearmotors

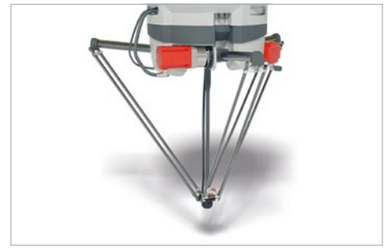
PxG® planetary servo gear units

USE CASES / TYPICAL APPLICATIONS

P5.G.. machine tool gantry
- Mounting press
- Drilling and pegging machine



P6.G.. Filling and transfer starwheels
- Printing machine
- Diaper machine



P7.G.. Delta/tripod kinematics
- Laser cutting machine
- Chain magazine and tool changer

THE ADVANTAGES AT A GLANCE

Easy!
Huge time savings due to rapid integration into existing systems thanks to 100% geometrical compatibility with the market standard.

Individual!
100% configuration designed to precisely suit your requirements in terms of service life, precision and performance thanks to a comprehensive modular system.

Durable!
Up to 200% service life for seals due to use of the exclusive Premium Sine Seal.

Powerful!
High torque and simultaneously high speeds, even at 100% continuous duty.

AN OVERVIEW OF THE TECHNOLOGY

Planetary servo gear units		P5.G..	P6.G..	P7.G..
Sizes		21, 22, 31, 32, 33, 41, 42, 43, 51, 52, 53, 61, 62, 63, 71, 72, 73 (NEW)		
Gear ratio	1-stage	3 – 10		4 – 5.5
	2-stage	12 – 100		16 – 55
	3-stage	64 – 1000	On request	64 – 550
Acceleration torque		66 – 4200 Nm	40 – 2000 Nm	80 – 6150 Nm
Rotational clearance		3 – 4 arcmin		1 arcmin
Service life		20 000 h (cdf 60%)	30 000 h (cdf 100%)	20 000 h (cdf 60%)
Output variants		Solid shaft (smooth, key or splining), flange block shaft with or without index bore		Flange block shaft without index bore
Lubrication for life		GearOil Poly E1 by SEW-EURODRIVE or Grease HL 2 E1 by SEW-EURODRIVE, also in H1 (food grade)		
Seal		Premium Sine Seal or labyrinth seal (in the case of grease lubrication)		

Corrosion resistance
Housing surfaces and the interfaces with corrosion protection as standard, no painting.

Bearing systems
Accurate bearing service life predictions using precise calculation of the contact pressure distribution.

Gearing surfaces
Precise and low-noise transfer of high torques using tribologically optimized gearing surfaces.

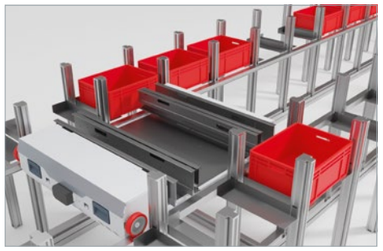
Sealing systems
Long service life thanks to exclusive Premium Sine Seal oil seal in the gear unit adapter.

Tribological systems
High efficiency and low wear thanks to lubrication for life with GearOil by SEW-EURODRIVE from the factory.

SPIROPLAN® gear units W..19 – W..49

USE CASES / TYPICAL APPLICATIONS

Horizontal materials handling technology
- Roller conveyor
- Chain conveyor
- Belt conveyor



Mobile logistics applications
- Travel drives
- Load handling devices
- Pallet transfer shuttles

Vertical conveyor
- Lifting stations
- Transfer units

THE ADVANTAGES AT A GLANCE

Lightweight!
Particularly advantageous 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 gear unit and motor ensures long-term availability and functionality.

AN 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 disk

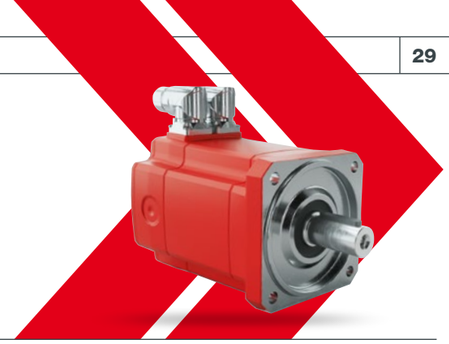
Hollow shaft with shrink disk in TorqLOC® design

Hollow shaft with keyway and torque arm

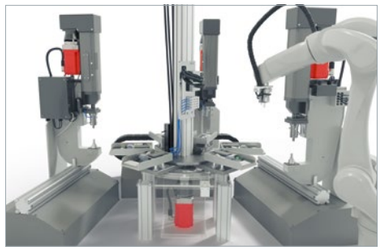
Gear unit size	W..19 (NEW)	W..29	W..39	W..49 (NEW)
M_{amax} Nm	80	130	200	400
Gear ratio range i	5.90 – 167.59	4.68 – 188.47	4.72 – 210.49	7.22 – 200.76
Motor power range kW	0.09 – 0.75	0.12 – 1.1	0.12 – 1.5	0.12 – 3.0
Hollow output shaft diameter mm	18 / 20	20 / 25 / 30	25 / 30	30 / 35
Flange diameter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

Motors

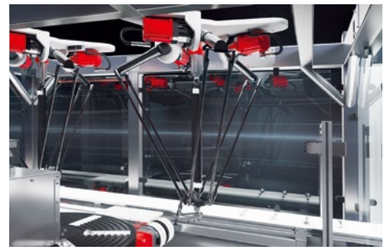
CM3C.. servomotor



USE CASES / TYPICAL APPLICATIONS



- Heavy-duty gantries
- Cartesian robots
- Palletizers



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

- Hoist applications
- Materials handling technology with heavy external loads

THE ADVANTAGES AT A GLANCE

Can even be used in very confined installation spaces
… thanks to its extremely compact design.

Savings in installation effort and costs
… by using the MOVILINK® DDI modular single-cable technology.

Also suitable for use in the food industry
… thanks to a hygiene-friendly design.

Can also be used on third-party FIs
… thanks to the availability of many market-standard encoder interfaces.

Safe deceleration of even high loads
… due to its spring-loaded brake with increased working capacity.

High flexibility and optimum drive selection
… thanks to the unique modular gearmotor system from SEW-EURODRIVE.

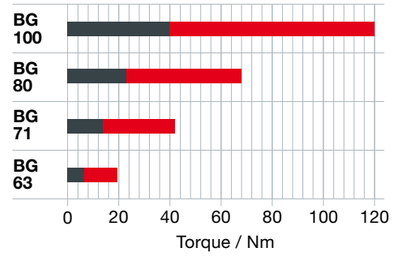
Fast, reliable startup with autotuning
… using the electronic nameplate.

For global markets
… thanks to international certificates and approvals (UL, CSA, EAC, ATEX, etc.).

AN OVERVIEW OF THE TECHNOLOGY

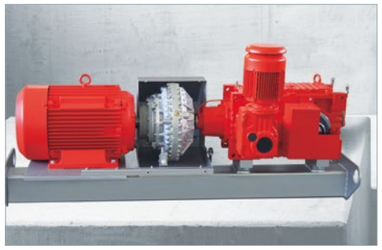
	Size 63*	Size 71*	Size 80*	Size 100*
M_0 Nm	2.7 – 6.4	6.5 – 14	10.5 – 22.8	19 – 40
M_{pk} Nm	8.1 – 19.2	19.5 – 42	31.5 – 68.4	57 – 120
Edge dimension in mm	88	116	138	163
Speed min^{-1}	3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k

* Each size available in 3 lengths S, M and L.

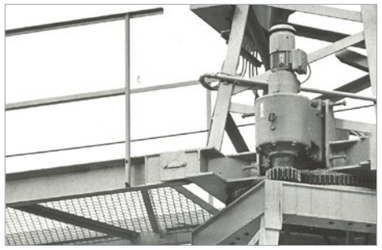


AC motors

USE CASES / TYPICAL APPLICATIONS



Building materials
Bucket elevator drive on joint swing base with main motor, turbo coupling and auxiliary gearmotor



Cranes
Slow-turning crane drive, line-powered brakemotor with compound helical gear unit

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

ADVANTAGES AT A GLANCE

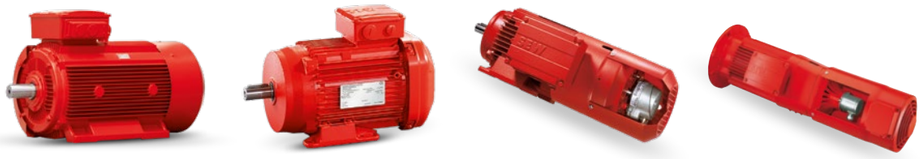
Scalable from 0.03 to 375 kW, and from 750 to 3000 min^{-1}!
Customized speed, rotational speed, force, torque and power, taking into account overload and safety factors.

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 local laws and regulations in a way you can plan and early on.

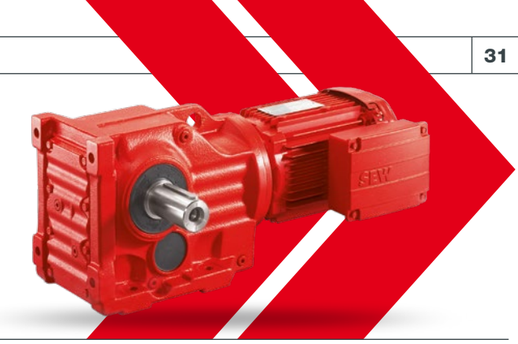
Dynamic with a high load-bearing capacity!
High continuous and peak torques in the standard AC motor make it easier for you to select the right elements in the drive train: braking and holding, position and speed sensors, thermal and mechanical protection, etc.

AN OVERVIEW OF TECHNOLOGY (NEW)



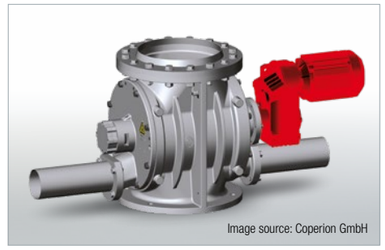
Type	4-pole (NEW) DRN355MS – DRN355ML	8-pole (NEW) DRN90S – DRN132S	4-pole (NEW) DR2L180M – DR2L225S	4-pole (NEW) DR2S180M – DR2S225S
50 Hz power ratings kW	250 – 355	0.37 – 2.2	–	22 – 45
60 Hz power ratings kW hp	260 – 375 350 – 500	0.37 – 2.2	–	22 – 45
Torques Nm	M_N: 1380 – 2250 M_K: 4140 – 6750	M_N: 4.1 – 29.5 M_K: 10.8 – 70.8	M_0: 165 – 300 M_{PK}: 520 – 1100	M_N: 118 – 290 M_K: 401 – 783
Frequencies Hz	50, 60, 50/60	50, 60, 50/60	41, 58, 71, 101	50, 60, 50/60
IE class IEC 60034-30-1	IE3	IE3	not defined	IE1
Speeds min^{-1}	50 Hz: 1492 60 Hz: 1792 – 1794	50 Hz: 710 – 715 60 Hz: 866 – 872	41 Hz: 1200 58 Hz: 1700 71 Hz: 2100 101 Hz: 3000	50 Hz: 1477 – 1482 60 Hz: 1776 – 1785

Explosion-protected AC motors



USE CASES / TYPICAL APPLICATIONS

Painting
– Movements as lifting, turning, twisting and/or holding
– In environments with solvent or dust contamination



Locks
– Transport and/or dosing of powders/granulates
– Hot and/or cold products

Stirring
– Substances/powders/liquids
– Dosing, mixing, distributing or pumping

THE ADVANTAGES AT A GLANCE

Gas-protected!
– Normative according to IEC 60079-0, -7, -15, NFPA 70 – Articles 500 – 503 and GB3836.1, .3, .8
– ATEX, IECEx, cCSA$_{UL}$, CCC: with third party certificates

Dust-protected!
– Normative according to IEC 60079-0, -31, NFPA 70 – Articles 500 – 503 and GB12476.1, .5
– ATEX, IECEx, cCSA$_{UL}$, CCC: with third-party certificates

Available for
– Europe with PTB certificates (EU notified body no. 0102)
– China with NEPSI certificates (GYJ20.1162X)
– North America with CSA certificates (MC170602)

Available for
– IECEx – countries with PTB certificates (IECEx PTB …)
– Brazil, South Korea: supplemented IECEx certificates (DNV…, KCS…)
– Australia, New Zealand: direct IECEx approval

AN OVERVIEW OF THE TECHNOLOGY

Certificates/approvals		ATEX	IECEX	CCC	HazLoc-Na®
Explosion protection identification		Ex	IEC IECEx	Ex NEPSI	MC170602 cSP us Energy Verified
Certifier	Cat. 2, EPL b	PTB[1]	PTB[1]	NEPSI[3]	–
	Cat. 3, EPL c, Division 2	SEW[2]	PTB[1]	NEPSI[3]	CSA[4]

[1] PTB = Physikalisch Technische Bundesanstalt; Braunschweig
[2] SEW = SEW-EURODRIVE; Bruchsal
[3] NEPSI = National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation; Shanghai
[4] CSA = Canadian Standards Association; Toronto

Type	Energy efficiency class		IE3		Grade 3	Premium efficiency IE3	Nominal speeds	Torques N = nominal; K = breakdown
Motor sizes		**EDRN.. 63 – 315**		**Type designations**			**min^{-1}**	**Nm**
50 Hz power ratings	**kW**	Zone 1 or 1/21: 0.12 – 110 Zone 2 or 21: 0.12 – 200 Zone 22 or 2/22: 0.12 – 200	2G, 2GD 3G, 2D 3D, 3GD	2G-b, 2GD-b 3G-c, 2D-b 3D-c, 3GD-c		–	1360 – 1489	M_N: 0.84 – 1280 M_K: 2.3 – 4864
60 Hz power ratings	**kW**	Zone 1 or 1/21: 0.12 – 110 Zone 2 or 21: 0.12 – 200 Zone 22 or 2/22: 0.12 – 200	2G, 2GD 3G, 2D 3D, 3GD	2G-b, 2GD-b 3G-c, 2D-b 3D-c, 3GD-c		–	1660 – 1790	M_N: 0.69 – 1070 M_K: 2.1 – 4601
		CID2: 0.12 – 200 CIID2: 0.12 – 200 CICIID2: 0.12 – 200	–	–		Group A, B, C and D Group F and G Group A, B, C, D, F and G	1695 – 1792	M_N: 0.67 – 1070 M_K: 2.3 – 4601

FOR USE IN THE FOLLOWING COUNTRIES

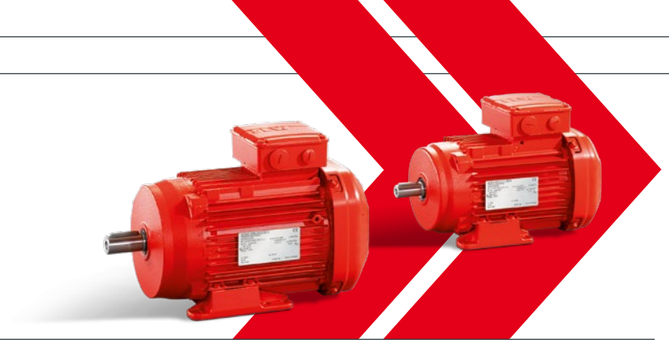
North America (HazLoc-NA®)
– For use in Division 2 Class I (gas) and/or Class II (dust)
– Hazardous material groups for the motor: Gas/vapor: A, B, C and D Dust/lint: F and G

Europe (ATEX)
– For use in Zone 1 or 2 (gas) and/or Zone 21 or 22 (dust)
– Explosion protection principles for the motor: pressure-resistant, increased safety, dust-protected or dust-tight

IECEx countries
– For use in Zone 1 or 2 (gas) and/or Zone 21 or 22 (dust)
– Explosion protection principles for the motor: pressure-resistant, increased safety, non-sparking, dust-protected or dust-tight

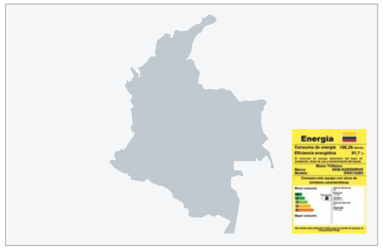
PR China (CCC)
– For use in Zone 1 or 2 (gas) and/or Zone 21 or 22 (dust)
– Explosion protection principles for the motor: pressure-resistant, increased safety, non-sparking, dust-protected or dust-tight

Energy saving specifications AC motors



CURRENT NEW REGULATIONS

China (expanded)
- Grade 3 (= IE3)
- 0.12 to 1000 kW
- 50 Hz



Colombia (expanded)
- B (C* < 0.75 kW, C* + VSD)
- 0.18 to 375 kW
- 60 Hz

Ukraine (NEW)
- IE3 (IE2* + VSD)
- 0.75 to 375 kW
- 50 Hz, 50/60 Hz

THE ADVANTAGES AT A GLANCE

Latest News!
- All approvals and certificates are kept up to date by SEW-EURODRIVE
- Cooperation in standardization and design (national, European, international)
- Political activities always ensure topicality

Easy!
- Just specify where you want to deliver to
- SEW-EURODRIVE provides the current certificates and approvals
- Anytime (SEW-EURODRIVE website: search for “IE-Guide”)

Combinable!
- Also standardized combinations of individual country versions
- Decades of experience with global solutions

Safe!
- Even if something has been forgotten, we are prepared for retrofitting and retooling
- Because we are also present in more than 70 countries worldwide

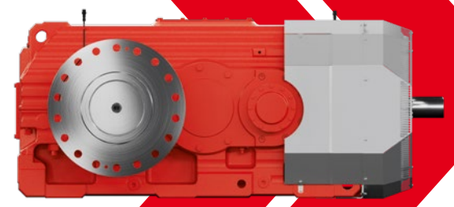
AN OVERVIEW OF THE LEGAL SITUATION

Country	China	Colombia	Ukraine
Compulsory from	June 1, 2021	September 1, 2021	September 15, 2021
Energy efficiency class	Grade 3 (= IE3)	B (=IE3), C* < 0.75 kW or C* (=IE2) with VSD	IE3 or IE2* with VSD
Power ratings kW	0.12 – 1000	0.18 – 375	0.75 – 375
Identification kW	0.75 – 375	0.18 – 375	0.75 – 375
By means of	Label	Label	Logo
Approval	Third party	Third party	Third party
Number of poles	2, 4, 6 or 8-pole	2, 4, 6 or 8-pole	2, 4 or 6-pole
Frequency in Hz	50	60	50, 50/60
Combinable	Yes, with global motor	No	Yes, with global motor
Exception	Pole-changing motors (more than one speed)	Pole-changing motors (more than one speed)	Pole-changing motors (more than one speed)
	–	Permanent magnet synchronous motors	Permanent magnet synchronous motors
	Non-ventilated motors	–	Non-ventilated motors
	Forced-ventilated motors	–	Forced-ventilated motors
No exception	Permanent magnet synchronous motors	–	–
	Brakemotors	Brakemotors	Brakemotors
	Gearmotors	Gearmotors	Gearmotors
	–	Non-ventilated motors	–
	–	Forced-ventilated motors	–

* IE2, no longer from SEW-EURODRIVE

Industrial gear units

Generation X.e helical and bevel-helical gear units



USE CASES / TYPICAL APPLICATIONS

Conveyor belts

Crushers

Cranes

THE ADVANTAGES AT A GLANCE

Reliable!
Up to 220% increase in the calculated bearing service life of the gear unit thanks to the order-specific setting of the bearing preload and use of the reference service life calculation to ISO/TS 16281.

Sturdy!
Thanks to an optimized gearing topology, the tooth engagement is unaffected by meshing faults caused by misalignments due to external loads. Static overhung loads at unfavorable application angle increased by up to 41%.

Cost-effective!
Longer oil service life due to lower thermal load and savings of up to 30% of the oil volume thanks to a reduced oil level.

AN OVERVIEW OF THE TECHNOLOGY

Gear unit design	Stages	Gear ratio i	Nominal torque M_{N2} kNm
Helical gear unit X.F.100e – 320e	2- to 4-stage	6.3 – 450	6.8 – 475
Bevel-helical gear unit X.K.100e – 320e	2- to 4-stage	6.3 – 450	6.8 – 475
Bevel-helical gear unit X.T.100e – 250e	3- or 4-stage	12.5 – 450	6.8 – 175
Output variants	Solid shaft: Key, smooth design, splining Hollow shaft: Keyway, shrink disk, splining, TorqLOC® hollow shaft mounting system		

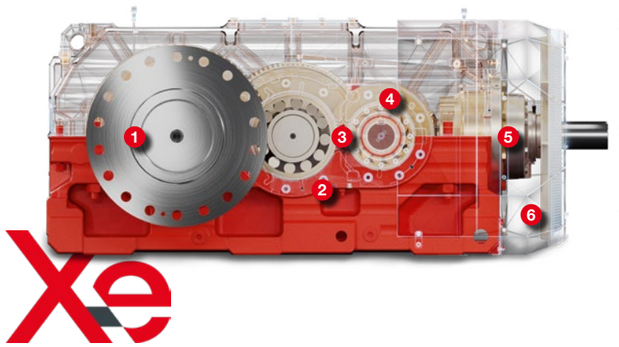
For sizes X.100e – 250e, the first oil change after 500 hours can be omitted if the gear units are filled with GearOil by SEW-EURODRIVE at the factory.

GENERATION X.e

1 **Contactless sealing systems**
No wear at the input and output shaft, no oil loss

2 **Thermally improved oil levels**
Optimum heat transfer and reduction of oil bath temperature

3 **Optimized bearing preload**
Reduced point heat generation; the lower compression significantly increases the bearing service life



4 **Optimized gearing topology**
Resistance to misalignments, better tolerance of tooth engagement faults caused by external loads

5 **Improved bevel pinion housing**
Optimized oil flow, higher thermal rating

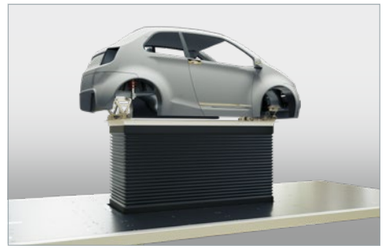
6 **Fan and fan guard concept**
Under one hood: different fan sizes and types

Contactless energy transfer system

MOVITRANS®: contactless energy transfer system

USE CASES / TYPICAL APPLICATIONS

Pallet transfer shuttle
Conveying systems in logistics centers



Skillets with lift table
Lifts or shuttles

Floor conveyor systems
Mobile systems

ADVANTAGES AT A GLANCE

Scalability!
Configure with ease – thanks to its system modules, MOVITRANS® can be easily adapted to suit changing system tasks and modifications.

Cost reduction!
Lower operating costs with MOVITRANS®. It is easy to use, increases system availability and minimizes maintenance outlay in the long term.

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.

AN OVERVIEW OF TECHNOLOGY

STATIONARY COMPONENTS
System frequency 25 kHz or 50 kHz

1 TES31A decentralized supply unit
Power rating: 8 kW or 16 kW
(up to 48 kW in parallel connection)
Line voltage V_{line}:
400 – 500 V ± 10%

2 TCS31A compensation box
compensates for a distance of
25 m to 30 m.

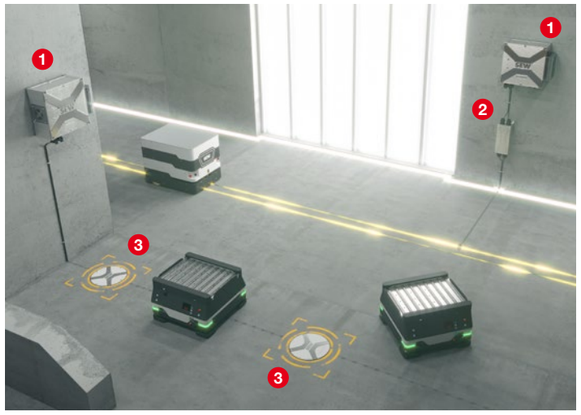
3 Field plate
Inductive point-based charging with high power ratings of up to 11 kW
System frequency B: 50 kHz
Can be installed in the floor or as a floor structure.

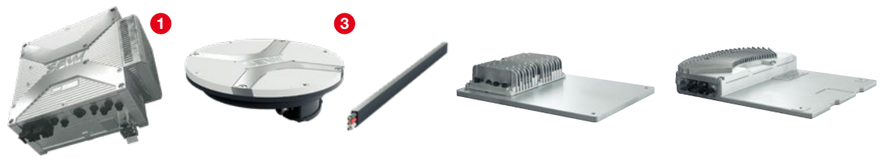
Wedge-shaped conductors
Inductive, linear energy transfer, suitable for currents of up to 60 A. Energy transfer while traveling. Can be installed in the floor or as a floor structure.

MOBILE COMPONENTS

THM90E pick-up
with a direct voltage output and energy storage unit,
1.5 kW / DC 350 V
series and parallel connection possible

TDM80E pick-up
Rated output: 11 kW for
4 min. / Cyclic duration 10%
Field plate nominal current: 30 A
System frequency B: 50 kHz

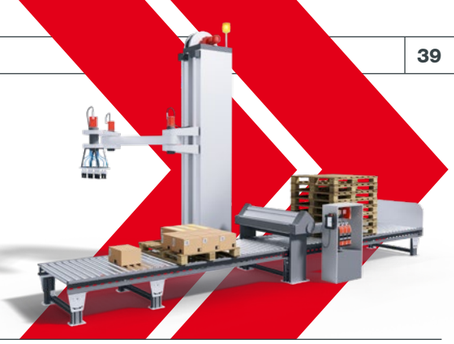




MOVITRANS® technology works on the principle of inductive energy transfer and ensures the perfect power supply – contactless, quiet, low-maintenance and wear-free.

Machine automation

Scalable automation solution for palletizers



USE CASES / TYPICAL APPLICATIONS

High-level palletizer
Palletizer without synchronized motion (drive control)

Horizontal palletizer
Palletizer with synchronized motion (motion control)

Palletizing robot
Palletizer using robot kinematic models (Cartesian control)

THE ADVANTAGES AT A GLANCE

Safe!
Safe palletizing. Fully integrated functional safety. Motion controls up to SIL 3 / EN 62061 / EC 61800-5-2 or PL e as per EN ISO 13849-1

Predictive!
Keep an eye on machine status. Maximum system availability thanks to predictive maintenance solutions and full networking capability.

Efficient!
Don't waste any energy and guard against line interruptions. Up to 70% energy savings thanks to the power and energy modules.

Fast!
Fully automated SEW production plants send customer-specific automation packages out for delivery in just a few days, for the fastest of response times.

AN OVERVIEW OF THE TECHNOLOGY

Perfect transportation

Anything is possible when using the scalable automation solutions from SEW-EURODRIVE. Various perfectly coordinated technologies – all available from the same place – can be used to develop a customized transport solution. Whether you are then looking for a positioning, synchronizing or parallel solution, SEW-EURODRIVE always has the right control system with a fully integrated drive train and the matching MOVIKIT® software module for your requirements.

Align packages perfectly

Flexible pre-grouping requires considerable grouping performance, but very little space is available for this complex part of the line. Delta robots/tripods can, for example, be adapted quickly to a new layer pattern and changing package sizes. Flexible custom changeovers – and thus prompt product changes – can be quickly implemented on the line thanks to simple parameterization. The relevant settings are input using a robot operating and programming interface on a handheld terminal.

Robust and durable

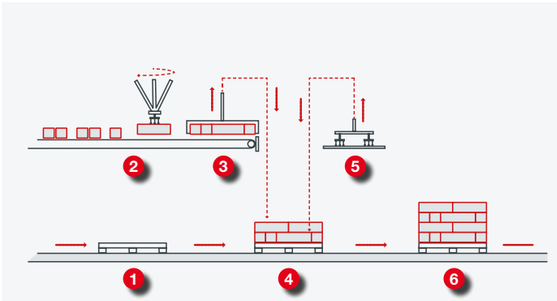
The best "Made in Germany" quality for maximum machine design flexibility and performance. Both robust product design from SEW-EURODRIVE and surface finishes that are highly resistant to external influences maximize service life and machine availability. The comprehensive SEW product configurator guides users quickly to the right product for their specific application.

Precise layer formation

We offer you the flexibility you need for perfect layer formation with our MOVI-C® modular automation system and with the relevant MOVIKIT® software modules integrated into the motion system. MOVIKIT® AutomationFramework and MOVIKIT® Visualization offer additional, optional simulation options for process optimization and layer control purposes. This enables you to thoroughly test all functions and even the grouping performance from as early as the planning phase.

Form intermediate layers correctly

The MOVIKIT® Robotics software modules for 2, 3 to 4, or more axes can be used on a modular basis from the MOVI-C® modular automation system even for additional handling tasks. If the stacking height is not known, the MOVIKIT® Robotics addon Touchprobe enables the robot arm to pick up intermediate layers precisely and then place them in the perfect position. MOVISUITE® RobotMonitor engineering software features an integrated and automatically generated 3D robotics simulation for depicting the paths and significantly reduces startup times.



Stack layers safely

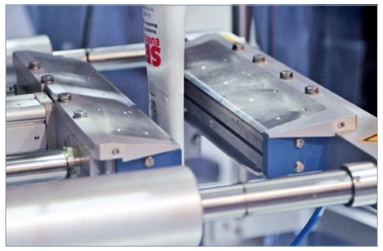
The MOVIKIT® Robotics software module offers the ideal solution for every kinematic model imaginable. The MOVIKIT® Robotics addon CollisionDetection reliably monitors the motion path to detect potential collisions and guards against downtimes caused by malfunctions. Fully integrated functional safety supports all key motion monitoring functions such as Safely Limited Speed (SLS), Safe Direction (SDI) and Safe Operational Stop (SOS) along with position-dependent functions such as Safely Limited Increment (SLI) and Safely Limited Position (SLP).

Automation solution for vertical FFS machines

USE CASES / TYPICAL APPLICATIONS

Flexible automation solutions
Complete solutions for intermittently and continuously running FFS machines.

Flawless look
The right dimensions and a perfect image printed on the product thanks to print mark identification and monitored film transport.



Optimum seal quality
Product-dependent and format-dependent seal parameters ensure the correct temperature and optimum printing for a solid and safe closure.

THE ADVANTAGES AT A GLANCE

Parameterizable!
Using MOVIKIT® software modules, typical FFS functions can be implemented in the shortest space of time via parameterization.

100% automation!
Everything from a single source: Engineering software for planning, startup, all control technology, inverter technology and drive engineering.

Flexible!
Simple and self-explanatory hardware-independent machine operation.

Modular!
Modular application modules for greater flexibility.

AN OVERVIEW OF THE TECHNOLOGY

Flexible synchronization

When it comes to machines that are being run on a continuous basis, the sealing bar needs to be synchronized with the sealing tongs on the continuous film transport. It also needs to run in sync with the printed image on the film. It is only after the desired sealing time has passed and the sealing tongs are open that the bar can return to its starting position. That doesn't present any problems for our solution from the MOVI-C® modular automation system, thanks to the MOVIKIT® MultiMotion Camming software module and the easily parameterizable engagement/disengagement functions it makes possible.

Stable temperature control

The right temperature is crucial to the quality of the seal on the bag. This is where the material and speed of the FFS machine have a direct influence on control. The software modules in the MOVIKIT® AutomationFramework can be used for the high-precision adjustment and monitoring of such control processes with major disturbance variables. This is another area where parameterization without programming delivers rapid and simple automation.

Perfect print image

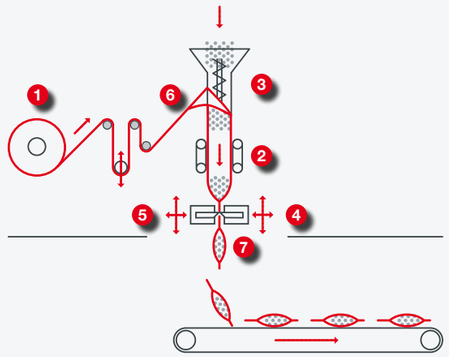
The print mark correction functions developed as part of the MOVI-C® automation system process the print mark identified on the film drive and monitor the synchronized movement of the sealing bar. This closed-loop control ensures the print image is perfectly positioned on the bag and demonstrates the precise interplay of our servo drives. There's no faster or more straightforward way to automate a machine.

Precise dispensing

Automation made easy: The MOVIKIT® MultiMotion Camming software module delivers synchronized volumetric filling in real time – for example by using a worm. This is made possible by the simple parameterization of filling variants and the simultaneous clock-synchronous control of the relevant actuators.

Ultimate seal quality

Our MOVIKIT® MultiMotion software module works without any complicated programming and can be very easily parameterized in a short space of time. Not only does it control the opening and closing of the sealing tongs, it can also monitor the pressure when sealing the bags. Custom setting options for sealing offer users maximum flexibility and quality.



1 Film unrolling
2 Film transportation
3 Dispensing
4 Sealing bar
5 Sealing tongs or jaws
6 Monitoring of print mark
7 Sealing

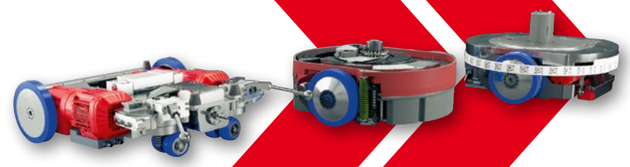
Monitored web tension

Web tension can be controlled either directly and without sensors based on torque or via the position of a dancer. Instead of complex programming, rapid and simple parametrization is all that is needed for unwinding the film and achieving excellent dancer control.

The MOVIKIT® Winder software module is used for this purpose. Together with the MOVIKIT® AutomationFramework software module, it is ready for use immediately and is very easy to integrate into the sequential program of your FFS machine.

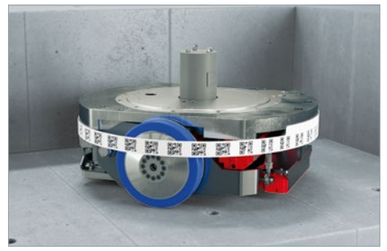
Factory automation

Drive modules MAXO-MS/M/DR

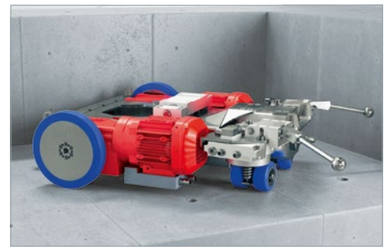


COMPONENTS

MAXO-MS/M/DR-L90



MAXO-MS/M/DR-QO



MAXO-MS/M/DR-PA

ADVANTAGES AT A GLANCE

Innovative!
New drive concepts enable various modes of operation so as to enable the most efficient factory layout possible.

Durable!
Long service life thanks to proven SEW-EURODRIVE drive technology.

Easy!
Standardized interface for rapid vehicle design and simple startup.

Compact!
Small design with integrated driving motors, drive inverters and contactless energy transfer.

AN OVERVIEW OF TECHNOLOGY

MAXO-MS/M/DR-L90

Dimensions	
Diameter × height	600 mm × 215 mm
Wheel diameter	200 mm
Ground clearance	20 mm ± 7.5 mm
Mass	96 kg

Tool flange	
Type	Lockable pivot bearing
Flexibility	Angle of rotation 0° and 90° for turning on the spot without load carrier rotation

Power supply	
Type	Contactless energy transfer system (point charge)
Charging power	10 kW for 4 min (cyclic duration factor 10%)
Charging current	DC 180 A
System voltage	DC 60 V

Drive data	
Type	Differential drive with BP09 spring-loaded brakes and load-dependent pressing force adjustment
Encoder	RH1M resolver and pulse counter with Hall probe MHRM 12G2501 from Baumer
Max. travel speed	– Flat, straight ahead: 1.5 m/s – Incline, descent and curve: 0.5 m/s
Mean drive power per drive	200 W
Peak power per drive	2000 W

MAXO-MS/M/DR-QO

Dimensions	
Diameter × height	606 mm × 213 mm
Wheel diameter	200 mm
Ground clearance	20 mm ± 7.5 mm
Mass	83 kg

Tool flange	
Type	Drive module with safe rotary position
Flexibility	Omnidirectional

Power supply	
Type	Contactless energy transfer system (line charge)
System voltage	DC 120 V – 360 V

Drive data	
Type	Differential drive
Encoder	EZ2Z encoder and pulse counter with Hall probe MHRM 12G2501 from Baumer
Max. travel speed	– Flat, straight ahead: 1.5 m/s – Incline, descent and curve: 0.5 m/s
Mean drive power	1500 W (750 W per drive)
Peak power	3500 W (1750 W per drive)

MAXO-MS/M/DR-PA

Dimensions	
Length × width × height	775 mm × 600 mm × 206 mm
Wheel diameter	200 mm
Ground clearance	21 mm
Mass	100 kg

Tool flange	
Type	Double swing axle
Flexibility	Differential rotation of drive unit including load carrier rotation

Power supply	
Type	Contactless energy transfer system (line charge), TDM90E011-D35-B06-0
Charging power	Mean charging power: 1100 W Peak power 1225 W
Charging current	DC 3.75 A
System voltage	DC 360 V

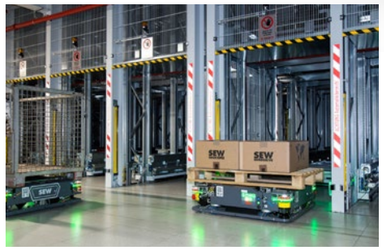
Drive data	
Type	Differential drive with floating double swivel casters with brake
Encoder	EI7C
Max. travel speed	– Flat, straight ahead: 1.5 m/s – Incline, descent and curve: 0.5 m/s
Mean drive power	370 W

MAXOLUTION®
Logistics assistant

MAXO-MS-LA015

USE CASES / TYPICAL APPLICATIONS

Intralogistics
Internal transportation of large load carriers such as pallets, cage pallets and boxes



Warehouse logistics
Conducting goods transportation to, inside and out of the warehouse

Production logistics
Mobile linking of process modules and production systems

ADVANTAGES AT A GLANCE

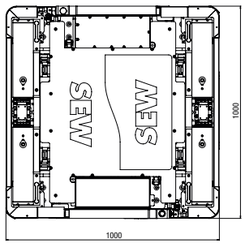
Compact!
Mounting position enables optimized layouts, more efficient use of buffer zones and simple design of transfer stations.

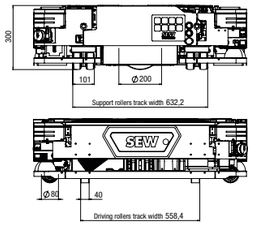
Precise!
Extremely accurate positioning possible thanks to laser-based fine positioning.

Easy!
Simple maintenance thanks to modular design.

Efficient!
The 90-degree rotation of the drive module without the need to rotate the load carrier makes it possible to design smaller, more efficient.

AN OVERVIEW OF TECHNOLOGY





	MAXO-MS-LA015
Dimensions	L = 1000 mm, W = 1000 mm, H = 300 mm
Weight	Min. 400 kg
Load capacity	Max. 1500 kg
Speed	Max. 1.5 m/s
Positioning accuracy	±2 mm to ±10 mm
Stroke	Max. 235 mm
Power supply	Inductive charging, NiMH battery
Navigation	Free contour navigation/inductive/ camera system/RFID
Communication	VLC, WLAN
Curve radius	Min. 0.5 m with 0.5 m/s
Drive concept	Differential drive with rotary axis
Travel time	Up to 40 minutes

MAXOLUTION®
Assembly assistant

MAXO-MS-AA005

USE CASES / TYPICAL APPLICATIONS

Intralogistics
Internal transportation of small load carriers and customer-specific products

Assembly/Production
Mobile assembly platform with ergonomic stroke adjustment

Material provision
Material supply for assembly and logistics

ADVANTAGES AT A GLANCE

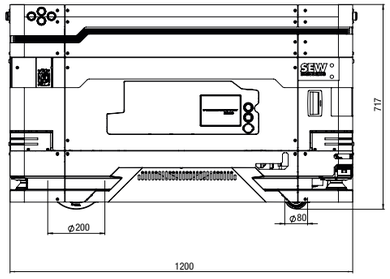
Ergonomic!
Assembly platform with automatic and manual stroke adjustment.

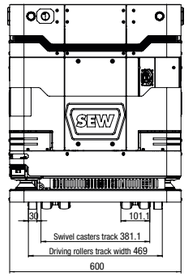
Customized!
Customer-specific load handling level for a range of different applications.

Easy!
Simple maintenance thanks to modular design.

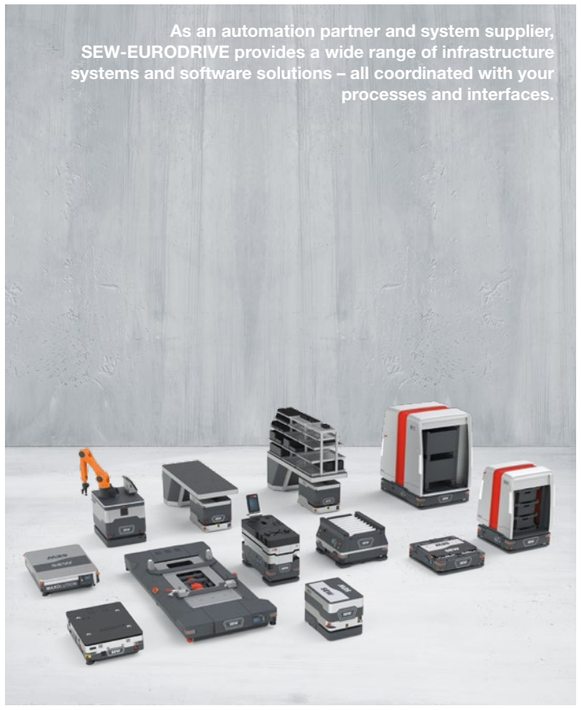
Flexible!
Can be used for assembly tasks and logistics processes.

AN OVERVIEW OF TECHNOLOGY





	MAXO-MS-AA005
Dimensions	L = 1200 mm, W = 600 mm, H = 717 mm
Weight	Min. 450 kg
Load capacity	Max. 350 kg
Speed	Max. 0.8 m/s
Positioning accuracy	±2 mm to ±10 mm
Stroke	Max. 300 mm
Power supply	Inductive charging, double-layer capacitor, lithium-ion battery
Navigation	Free contour navigation/inductive/RFID
Communication	VLC, WLAN
Curve radius	Min. 0.5 m with 0.5 m/s
Drive concept	Differential drive
Travel time	Up to 3 hours



Mobile systems with MOVITRANS®

USE CASES / TYPICAL APPLICATIONS

Mobile systems from SEW-EURODRIVE with contactless energy transfer

Logistics assistant MAXO-MS-LA015

Frame vehicle MAXO-MS-RA006

Assembly assistant MAXO-MS-AA005

ADVANTAGES AT A GLANCE

Scalable!
Charging while traveling or at load transfer, different charging strategies are possible depending on the application and requirements.

Contactless!
Do without ground contact completely, make the routes traversable and transfer the energy maintenance-free and wear-free.

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

Availability!
Use contactless energy transfer with MOVITRANS®, because it offers extremely high availability.

AN OVERVIEW OF TECHNOLOGY

STATIONARY COMPONENTS

System frequency 25 kHz or 50 kHz

1 TES31A decentralized supply unit
- Power: 8 kW or 16 kW (up to 48 kW in parallel connection)
- Line voltage V_{line}: 3 × AC 380 – 500 V ± 10%

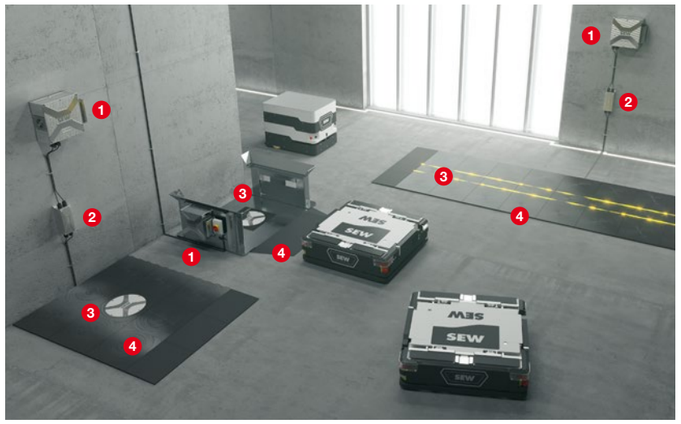
2 TCS31A compensation box
Adjustable compensation for track lengths of 0 to 25 m

3 Field plate
- Inductive point-based charging with high power ratings of up to 11 kW
- System frequency B: 50 kHz
- Can be installed in the floor or on top of it

Cable in wedge-shaped design
- Inductive linear energy transfer
- Suitable for currents of up to 60 A
- Energy transfer on the move
- Installation possible as open and cast routing in the floor or on top of it in installation plates

Circular conductor
- Installation cast into the floor
- Not sensitive to poor ambient conditions

4 Installation plates
- Installation of MOVITRANS® possible without disrupting the floor
- Combining the installation plates using grooves and tongues in a puzzle system enables rapid installation and removal of surfaces. This increases the flexibility and adaptability of the factory.

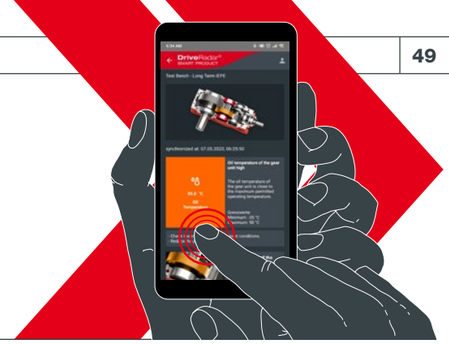


MOVITRANS® technology works on the principle of inductive energy transfer and ensures the perfect power supply – contactless, quiet, low-maintenance and wear-free.

Life Cycle Services

DriveRadar® IoT Suite for industrial gear units

Condition-based component monitoring and maintenance forecasting



USE CASES / TYPICAL APPLICATIONS

Belt drives/conveyor belts/materials handling technology

Agitators

Cranes

THE ADVANTAGES AT A GLANCE

Effective monitoring!
Early warning in the event of critical changes in condition and abnormal operating characteristics, plus identification of trends through continuous monitoring and intelligent visualization.

Increased productivity!
Prevention of unscheduled downtime thanks to transparency regarding the condition and operating characteristics of gear units.

Efficient operations!
Because maintenance and service work are easier to plan.

Conserving of resources!
By utilizing the full service life of components and systems.

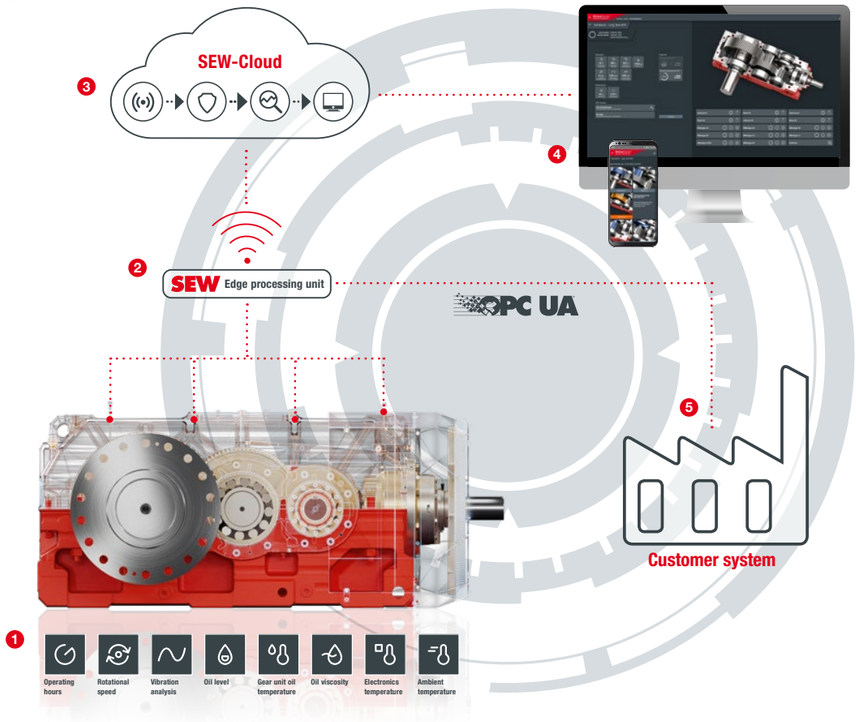
AN OVERVIEW OF THE TECHNOLOGY

The DriveRadar® operating principle using the example of a Generation X.e industrial gear unit

1. Sensor technology and data acquisition
2. Edge processing unit (EPU) / data connection
3. Data calculation and data analysis
4. DriveRadar® IoT Suite / DriveRadar® IoT app
5. Data link via OPC UA

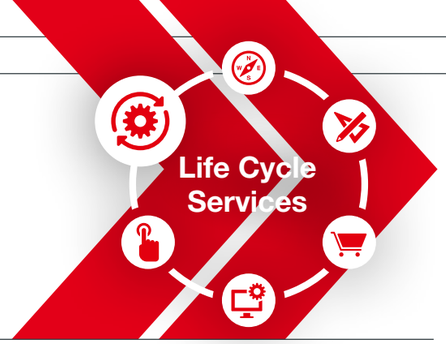
The DriveRadar® IoT Suite

- Intuitive and clear user interface
- Rapid location of all gear units in the asset overview
- Detailed view of all measured variables and components
- Condition history automatically recorded in the event logbook
- Clear recommendations for analyzing and eliminating causes
- Validated analytics for early detection of bearing and gearing damage
- Forecast for oil level and next oil change
- Forecast of rolling bearing and gearing service life

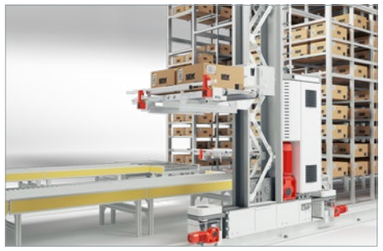


Retrofit

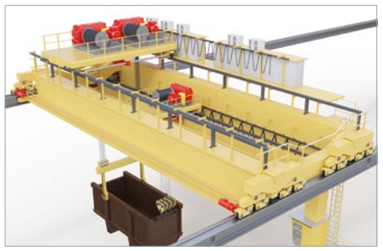
Modernization is part of our service throughout the entire system life cycle.



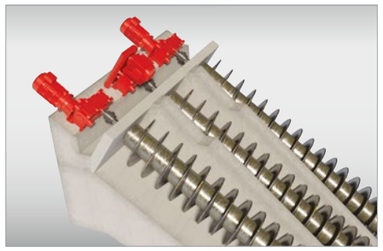
USE CASES / TYPICAL APPLICATIONS



Intralogistics applications
- Storage/retrieval system
- Horizontal materials handling technology
- Hoists



Handling applications
- Gantry cranes
- Palletizers specialists



Other applications
- Screw conveyors/screw pumps
- Stirrers/mixers
- Crushers
- Fans

ADVANTAGES AT A GLANCE

Safeguard system and spare part availability
by using current and available drive technology components.

Prevent production stoppages and reduce downtimes
thanks to planned retrofitting measures and fast, efficient startup performed by SEW-EURODRIVE specialists.

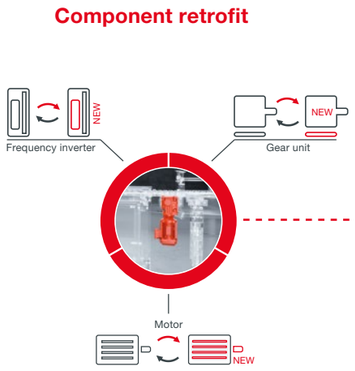
Reduce energy costs
with optimum project planning and the use of energy-efficient drive technology components.

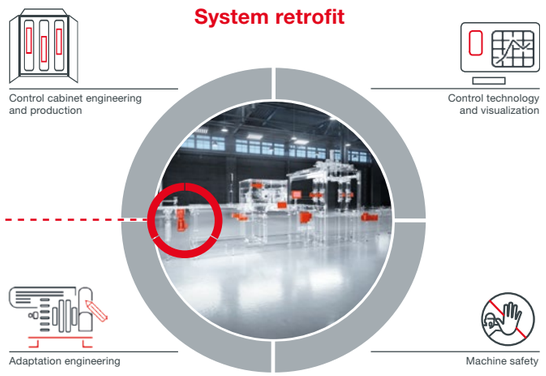
Optimize production processes while maintaining machine safety
by increasing the level of automation and using cutting-edge control and drive technology components.

AN OUR SERVICES AT A GLANCE

Component retrofit:
Replacement of drive technology components
- Actual analysis and status recording
- Project planning and design
- Adaptation engineering of electrical and mechanical components
- Replacement of drive components and drive-related periphery
- Startup

System retrofit:
Modernization of an entire system
- Control cabinet engineering and production
- Adaptation engineering of the system and application
- Automation and application programming
- Project management
- Technical safety consulting and machine safety evaluation
- Conversion of the mechanical periphery of the application and system
- Floor installation of MOVITRANS® systems
- System acceptance





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