

# MOVI-C<sup>®</sup>

Modular automation system  
**The future of automation technology**



# The MOVI-C® modular automation system

Goodbye complexity – hello MOVI-C®

When developing our MOVI-C® modular automation system, we put a lot of thought into how we can make your day-to-day work easier for you, how you can use the products and solutions from our modular concept to get your systems fit for the future, and how, where, and when we can offer you the best possible advice and service.



# 3 × 3 reasons to use MOVI-C®

## Simplicity

3 steps:  
plan – connect – move –  
sounds easy!

Thanks to our MOVISUITE® software, you can reduce complexity right from the engineering stage. Our products also take up much less installation space. Our hardware and software are perfectly coordinated. This speeds up startup, since the hardware and software are connected to each other via a plug-and-work solution with scalable control technology ranging from a simple motion controller to a high-performance cyber-physical controller. Complex processes can also be realized with ease, thanks to the parameterizable MOVIKIT® software modules.

## Future-proofing

3 promises:  
customized solutions –  
today and tomorrow

Our MOVI-C® modular automation system ensures you are perfectly equipped – not just for the tasks of today, but for those of tomorrow, too. We have factored all future challenges into our modular system – from aspects of sustainability such as energy management to end-to-end digitalization and resource-friendly use of materials.

## Engineering and service

3 success factors:  
delivery capability – consulting –  
worldwide

When time really matters, we can provide you with exactly what you need, no matter where in the world you might be. We can supply you with any components from our MOVI-C® modular automation system, with its end-to-end range of hardware and software, in next to no time and anywhere in the world. We also offer you engineering and startup support as and when required, along with comprehensive services during the operation phase. Your dedicated contact person will always be nearby.

# The MOVI-C® modular automation system

Find out more:



<https://www.sew-eurodrive.de/en/movi-c>



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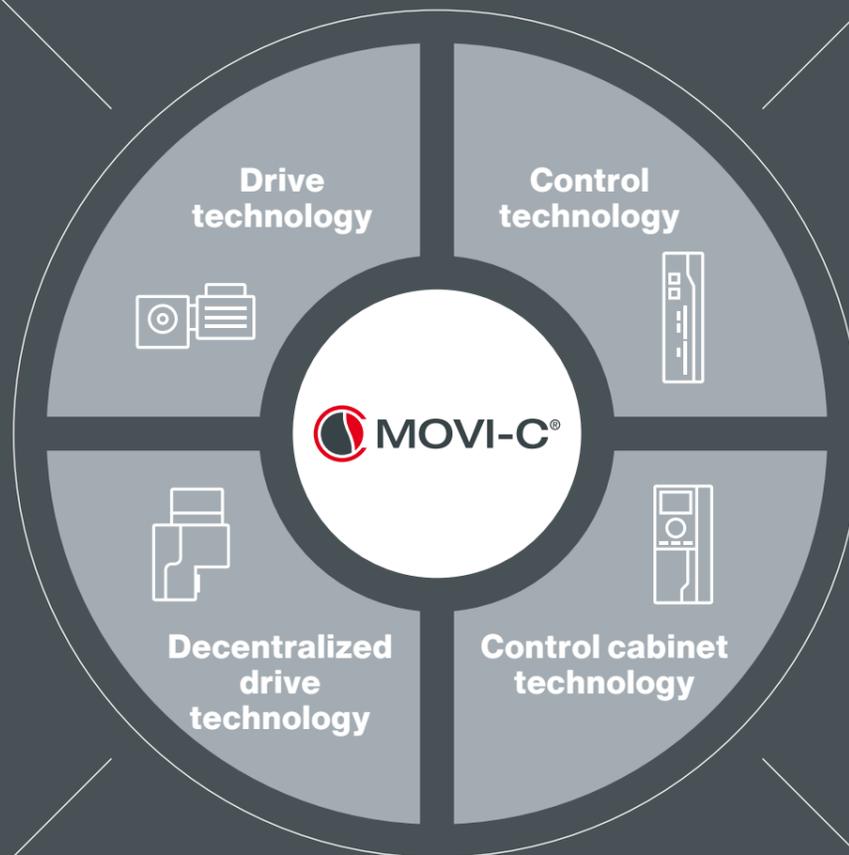


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# Quick engineering, quick startup

## MOVISUITE® engineering software

- Time-saving, user-friendly solution
- Consistent across all devices
- Free engineering software

In the MOVI-C® modular automation system, the MOVISUITE® engineering software is a tool that can be used centrally for all devices. In addition to startup, other functions such as drive diagnostics are available. The aim is to minimize the time and costs for the user through optimized usability. The software is freely available to you on our website, and there is no charge for using it.



Go straight to the download



[www.sew-eurodrive.de/en/dud-movisuite](https://www.sew-eurodrive.de/en/dud-movisuite)

### **NEW: A compact version – MOVISUITE® compact – has been added to the range**

This version is optimized for inverters, thus making it possible to engineer the drive train, via the motor, all the way to the gear unit. Installation takes next to no time – and less hard drive capacity is needed, too. MOVI-C® CONTROLLERS are not supported.

## MOVIKIT® software modules

- Much shorter startup times
- For everything from simple drive functions to complex motion control functions
- Hardware-independent operation, with an intuitive interface



### **AutomationFramework**

Software module with a state and mode manager and PackML compatibility



### **Drive**

Software modules for single-axis movements can be implemented on inverters without a controller



### **MultiMotion**

Software modules for universal closed-loop and open-loop motion control of interpolating axes



### **Power and Energy Solutions**

Software modules for energy management



### **Robotics**

Software modules for robot control



### **StackerCrane**

Software modules for storage and retrieval systems



Our software modules are available for a whole host of movement and drive tasks, visualization, and much, much more.

Find out more:



<https://www.sew-eurodrive.de/en/movikit>

During startup, you can devote all your attention to your application-specific settings – and the relevant MOVIKIT® software module will take care of everything else for you. Simply enter the parameters and that's it.

Each MOVIKIT® module makes an application-specific functionality available, e.g. speed control, positioning, motion profiles, standard communication solutions, or the visualization of machine-relevant data.

MOVIKIT® controller-based software modules are used on a MOVI-C® CONTROLLER. MOVIKIT® inverter-based software modules are available as an alternative, and only require an inverter, such as MOVIDRIVE®.

All MOVIKIT® software modules are incorporated into the MOVISUITE® engineering software, and can be both parameterized and programmed. The range is constantly growing!

# Automation without the headaches

## Control technology

- Extensive hardware
- Easy-to-program software
- User-friendly visualization solutions



## Control cabinet controllers

The performance and/or functionality of our MOVI-C® CONTROLLERS varies according to the number of inverters and the number of synchronous axes and auxiliary axes that are required for the motion and need to be configured. There is a range of performance classes available to choose from. Needless to say, all versions have a compact design, meaning they can fit into even small machine control cabinets.

The controllers can be used as field bus server EtherCAT® / SBus<sup>PLUS</sup> master, a PROFINET slave device, or an EtherNet/IP™ adapter. The controllers can be used both for challenging motion control tasks under any market-standard control system and as higher-level controllers for automation or even cyber-physical control tasks.



## Decentralized controller

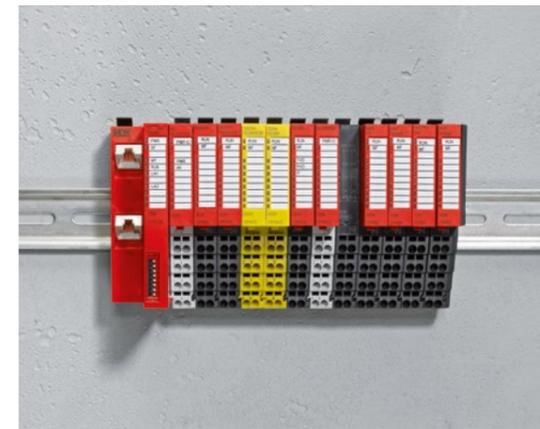
Based on the MOVI-C® modular automation system, a decentralized controller – the MOVI-C® FIELD CONTROLLER – has also been developed for decentralized drive technology. This solution features the same functions and interfaces as the MOVI-C® CONTROLLER, making it a consistent addition to the portfolio.

The MOVI-C® FIELD CONTROLLER consists of a decentralized controller and a connection box with field distributor function. When using hybrid cables, the wiring work for the lower-level drive axes can also be minimized, and costs are therefore reduced accordingly. Up to 16 drive axes can be controlled. Optimized startup and diagnostics reduce the engineering outlay.



## Would you prefer to avoid programming? No problem!

You can use our preconfigured MOVIKIT® software modules to implement even complex control functions with ease – all you need to do is enter parameters and that's it!



## I/O modules

The wide-ranging portfolio of analog and digital MOVI-PLC® I/O modules with functional safety maximizes your flexibility.

Take advantage of the wide range of functional modules and the different ways they can be combined. Simply integrate them into the controller's EtherCAT® bus via the bus coupler and take advantage of the full range of functions in your everyday work, e.g. to read binary or analog signals or SSI encoder signals, or to obtain data from counter or measurement modules, e.g. in relation to energy consumption.

I/O modules that are compatible with Safety over EtherCAT® are also available for special requirements in functional safety areas.



## Visualization

Our modular visualization system helps you maintain an overview, even when you are dealing with a large number of axes and degrees of freedom. What's more, it makes complex system processes transparent, and ensures intuitive operation.

- Our modular visualization system consists of three components:
- The hardware, monitors, and web and handheld panels
  - The software, including the MOVIKIT® Visualization software module
  - The visualization frameworks and preconfigured templates

Ranging from standard to customized visualization, the system caters for any need.

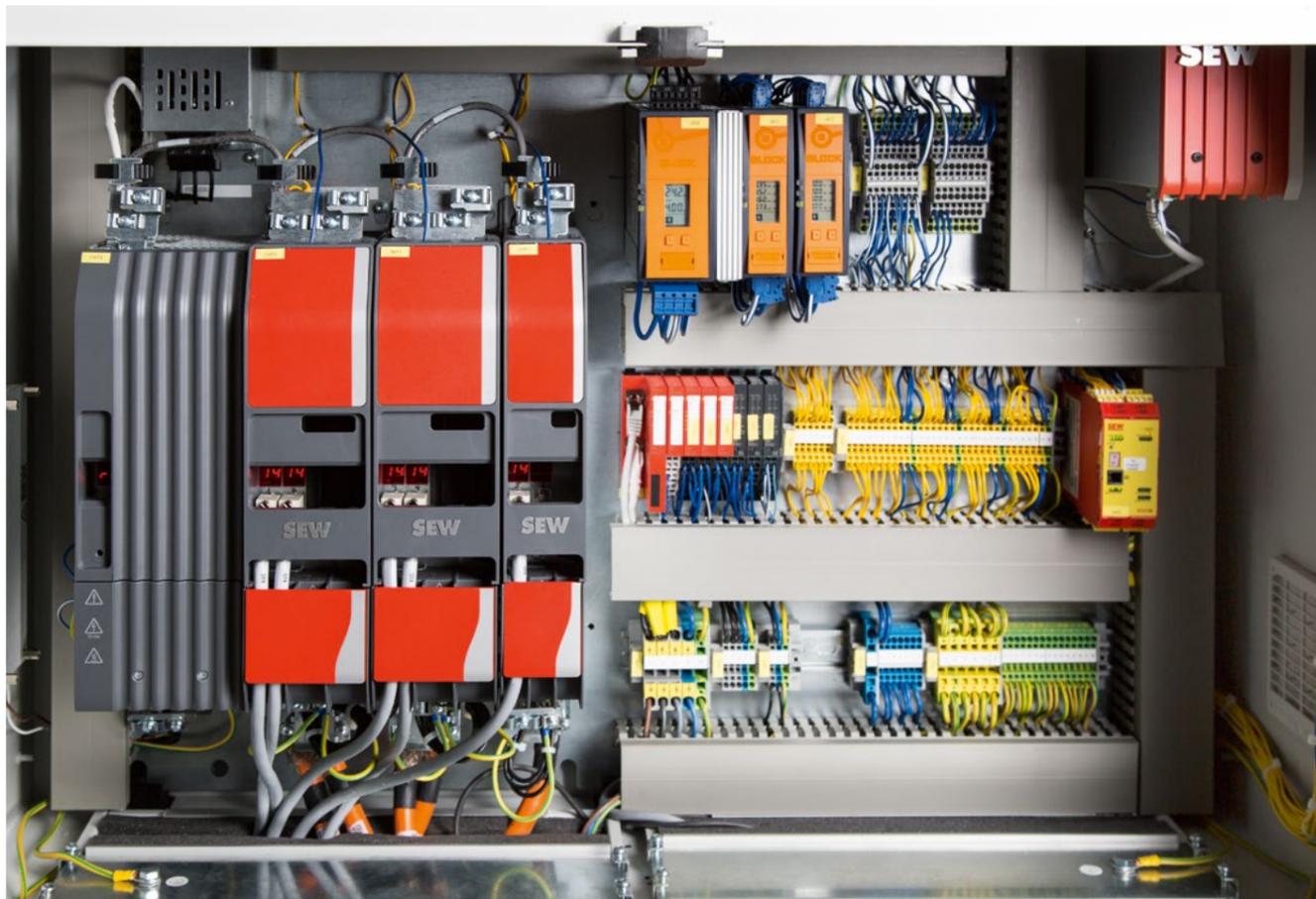
# Taking the strain off the control cabinet

## Control cabinet technology

- From the frequency inverter to the multi-axis system
- Inverter technology that ranges from simple to high-performance
- Functional safety included

Control cabinets are often full to bursting point. Supplier A's controller needs to be fitted in, as do supplier B's inverters for supplier C's drives. Countless kilometers of connection and communication cables also need to be fitted into a control cabinet – and all this space costs money.

**Take the strain off your control cabinet with MOVI-C®.**



## MOVITRAC® basic

Controlling speed with ease – this is what MOVITRAC® basic was designed and developed for. A very compact inverter that has been optimized for asynchronous AC motors.

Unpack – connect – specify setpoint – motor runs!



## MOVITRAC® advanced

MOVITRAC® advanced is a compact all-rounder. It can be combined with synchronous and asynchronous AC motors / linear motors and also with asynchronous motors with LSPM technology.

- Fast and simple startup
- Connection to standard control systems
- Configurable functional safety



## MOVIDRIVE® modular, system or technology

The application inverters from the MOVI-C® modular automation system are available as single-axis application inverters with rated outputs of up to 315 kW and as modular multi-axis systems incorporating single-axis and double-axis modules with rated currents of up to 180 A. They exhibit an overload capacity of up to 250% for dynamic motion. Inverter technology “made by SEW-EURODRIVE” – both as single-axis application inverters and in the modular design – controls and monitors all types of motors, from synchronous and asynchronous AC motors with/without an encoder to asynchronous motors with LSPM technology or synchronous and asynchronous linear motors.



# Combinations for modularity in the field

## Decentralized drive technology

- Modular and compact drive units
- Optimally combined mechanics and electronics
- For extended systems

It's hard to imagine the SEW-EURODRIVE modular system without its modular drive elements for decentralized system concepts. Here, you will find the exact drive solution you need, even for extensive systems.



### MOVIMOT® advanced

MOVIMOT® advanced is an all-rounder that provides functionality and end-to-end compatibility. By integrating an energy-efficient asynchronous motor from the DRN.. series or an IE5 synchronous motor from the DR2C.. series with the new decentralized inverter from the MOVI-C® modular automation system, users have drive units at their disposal that are optimized in terms of both function and energy.

The integrated digital interface ensures quick, easy, and convenient startup, even with the widest range of gear-motor options.



### MOVIMOT® performance

MOVIMOT® performance is our precision and flexibility specialist. It complements existing MOVI-C® products in terms of functionality and consistency and extends the range of possible applications for our decentralized drive technology, which has been proving its worth for decades. The MOVIMOT® performance drive unit consists of a decentralized inverter and a permanent-field synchronous motor of the CM3C.. series.



### MOVIMOT® flexible

MOVIMOT® flexible enables the decentralized inverter to be installed close to the motor in your application. With MOVIMOT® flexible, it's up to you whether you opt for a synchronous or asynchronous motor.

The MOVIMOT® flexible decentralized inverter consists of an inverter and a connection box with field distributor function. MOVIMOT® flexible is available in two versions. MMF1. is the streamlined basic version that still offers the full range of inverter functions. MMF3. offers additional options for simplified installation and operation over and above the full range of inverter functions.



### MOVIGEAR® performance

The MOVIGEAR® performance drive unit consists of a decentralized inverter, a permanent-field synchronous motor, and a gear unit. These three core components are located in a single compact die-cast aluminum housing.

Thanks to its integrated digital interface, the electronic nameplate is transferred, along with various sensor signals between the motor and inverter, without having to undertake any additional installation work. Communication takes place via fieldbus interfaces such as PROFINET IO, EtherNet/IP™, and Modbus TCP, and also via integrated digital inputs and outputs.

# Always on the move

## Modular energy-efficient drive technology

- Wide range of variants
- Single-cable technology
- Communication interfaces

### Just connect, and you're good to go

As a rule, it is the application that dictates whether the motors are line-operated or run on an inverter. Asynchronous motors from the DR.. series of the modular system work both as line modules and as frequency or application inverters.

In contrast, servomotors or synchronous motors are specially designed for inverter operation and have offered reliable use, including in decentralized installations, for decades. The individual motor series comply with different energy efficiency classes – a concise overview is provided below.

## Asynchronous or synchronous motors

In terms of power rating and energy efficiency, there is a broad range of "standard motors":

- Efficiency class IE5 synchronous motors, DR2C.. series, power range from 0.69 to 3.5 kW
- Efficiency class IE4 asynchronous motors, DRU.. series, power range from 0.75 to 375 kW
- Efficiency class IE3 asynchronous motors, DRN.. series, power range from 0.09 to 375 kW
- Efficiency class IE2 to IE4 synchronous motors, DR..J series (Line Start Permanent Magnet motor), power range from 0.18 to 4 kW

### Motors for special applications

- Aseptic motors, DAS.. series, in continuous duty (S1) from 0.25 to 1.5 kW
- Explosion-protected motors, EDR.. series from 0.12 to 200 kW



## Servomotors

Servomotors are compact and powerful, with low levels of inertia, and are suitable for positioning tasks and accelerations:

- Synchronous servomotors, CM3C.. series  
These motors are fundamentally comparable with the drives described in standard IEC TS 60034-30-2 and can therefore be rated as efficiency class IE5 as defined in the standard.  
Power range from 0.8 to 5.3 kW

### Other servomotors and synchronous motors

- Synchronous servomotors, CMP.. series (high dynamic)
- Synchronous servomotors, CM.. series (high inertia)
- Asynchronous servomotors, DRL../DR2L.. series
- Explosion-protected synchronous servomotors, CMP.. series



## Linear motors / linear movement

Drive components for applications that have high requirements in terms of the dynamics of the drive technology used:

- Synchronous linear servomotors, SL2 series
- Standard and modular electric cylinders, CMS../CMSM.. series
- Electric cylinders for welding tongs



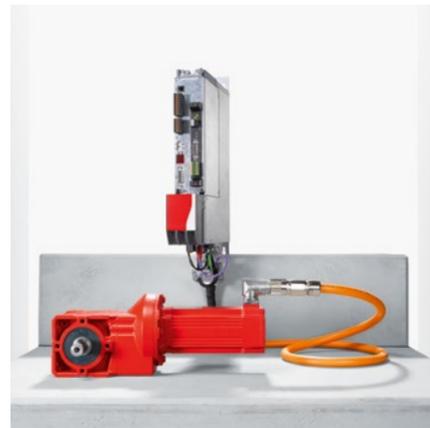
## Drive units

MOVIGEAR® classic combines a parallel-shaft helical gear unit and a permanent-field synchronous motor in a single compact die-cast aluminum housing. This drive unit is suitable for use under special ambient conditions, and especially in decentralized installations. The drive unit meets the requirements of efficiency class IE5. The power range is between 0.4 and 3.0 kW.



# Our contribution and pledge

The MOVI-C® modular automation system is our contribution toward mastering the technological tasks of the present and the challenges of the future.



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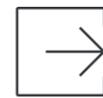
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- 2 See the system at a glance with DriveRadar®
- 3 Functional safety
- 4 Digital motor integration
- 5 Power and Energy Solutions



**Efficiency and sustainability**  
Throughout the entire product life cycle

We are committed to designing and producing our mechanical and electrical products in a sustainable, resource-friendly way. Working with you, we combine our products to create a powerful, energy-efficient solution for your application.



**Internet of Things (IoT) / security**  
Boosting system availability and productivity – and making infrastructure secure

We offer automated monitoring of systems with our DriveRadar® IoT Suite and our digitalized condition monitoring system. What's more, in all relevant applications, we apply methods to protect industrial systems in line with the IEC 62443-4-1:2018 international series of standards.



**Functional safety**  
Fully integrated safety

Safety technology is a fully integral part of the MOVI-C® modular automation system. Safe inputs and outputs, convenient stop functions, sophisticated movement and positioning functions, reliable braking, and clear communication – and all this from a single source, in one tool, and with one contact partner from planning right through to acceptance.



**Digital motor integration**  
Data flows – anywhere, any time

No matter how extensive your system is, you only need one hybrid cable to supply the motor with power and establish communication with the frequency inverter. Once that's done, everything begins moving and data starts to flow. This saves you time and money, because the exceptionally robust and high-performance design of the cable with coaxial data line makes it possible to implement space-saving installations with ease.



**Energy management**  
Efficient and transparent

If you want to increase energy efficiency and lower your energy requirements, but without affecting your processes, production, or machinery, there is only one solution – an appropriate energy management system. With our Power and Energy Solutions, we offer grid output management and energy management that is perfectly adapted to the relevant application and provides both full transparency and detailed monitoring of the grid data and consumption data.

# MOVI-C® in use



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Further information can be found at:

**<https://www.sew-eurodrive.de/en/movi-c>**



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