
MOVI-C[®] modular automation system: Control technology and more

Everything from a single source

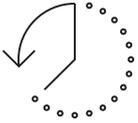
Quick and easy

Automation without the headaches? Absolutely!

Especially when motion, automation control, and thus the corresponding complete solutions and services, come from a single source. Our control technology combines high-performance hardware, parameterizable and easily programmable software, as well as user-friendly visualization

solutions. Would you rather not have to do any programming? Not a problem. MOVI-C[®] comes with prefabricated software modules for simple and complex control functions. All you have to do is set the parameters.

Time-consuming programming is a thing of the past.



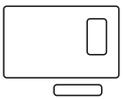
Save time

Quick and easy startup thanks to the user-friendly MOVISUITE[®] engineering tool and the use of preconfigured MOVIKIT[®] software modules.



Straightforward

In terms of startup and ongoing production. Parameterization instead of programming! Even when it comes to a service: Simple and quick device replacement is enabled without an engineering PC thanks to a portable memory module for storing all of the device data.



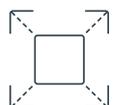
Open and flexible

Connection to common control systems thanks to the support of various fieldbus protocols. Configurable functional safety is also available, ranging from STO to higher-level safety functions and safe communication.



Customized

Our components are combined to create a tailor-made automation solution for your application.



Universal

Interchangeable, scalable and expandable with components from a modular automation system: MOVI-C[®]

Simplify your automation – with application-specific software and durable hardware

Software: Pages 12 – 17
Visualization: Pages 18 – 19



Control cabinet:
Pages 6 – 9
MOVI-C® CONTROLLER



Decentralized:
Pages 10 – 11
MOVI-C® FIELD CONTROLLER

Accessories/options:
I/O modules: Pages 20 – 21
Functional safety: Pages 24 – 25

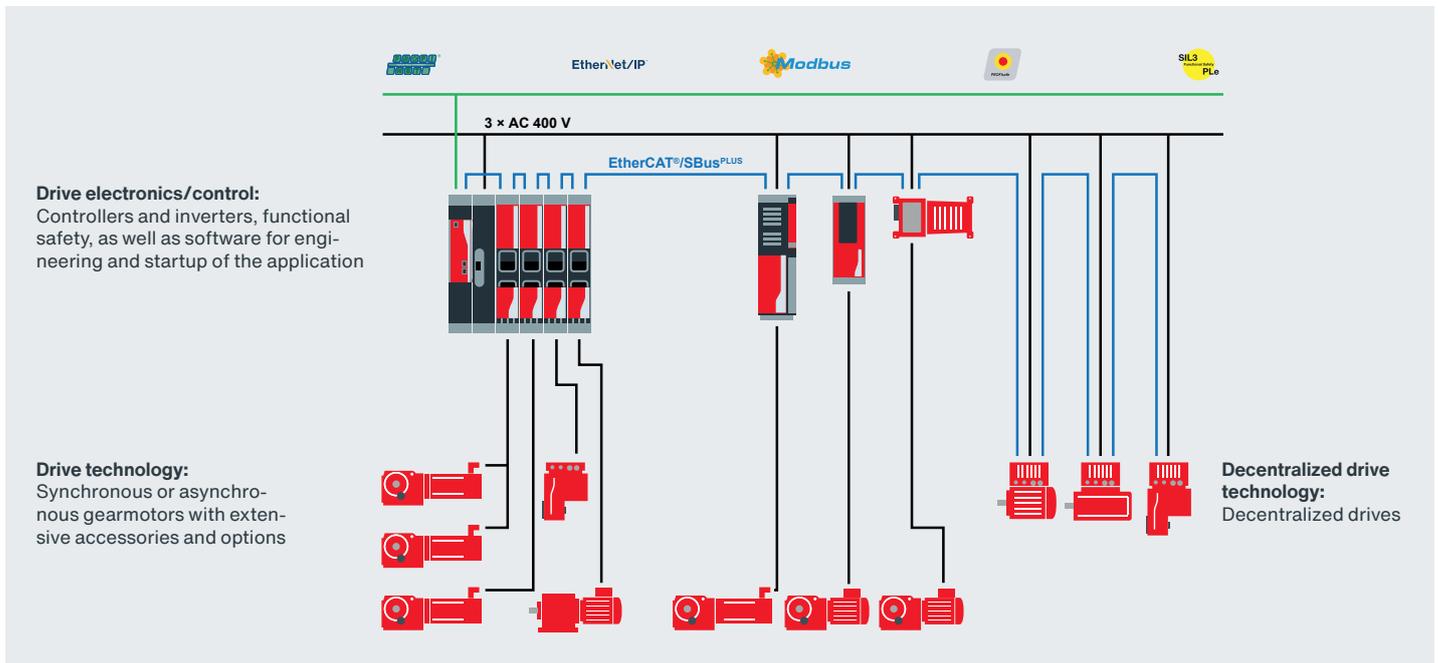


Applications and topologies

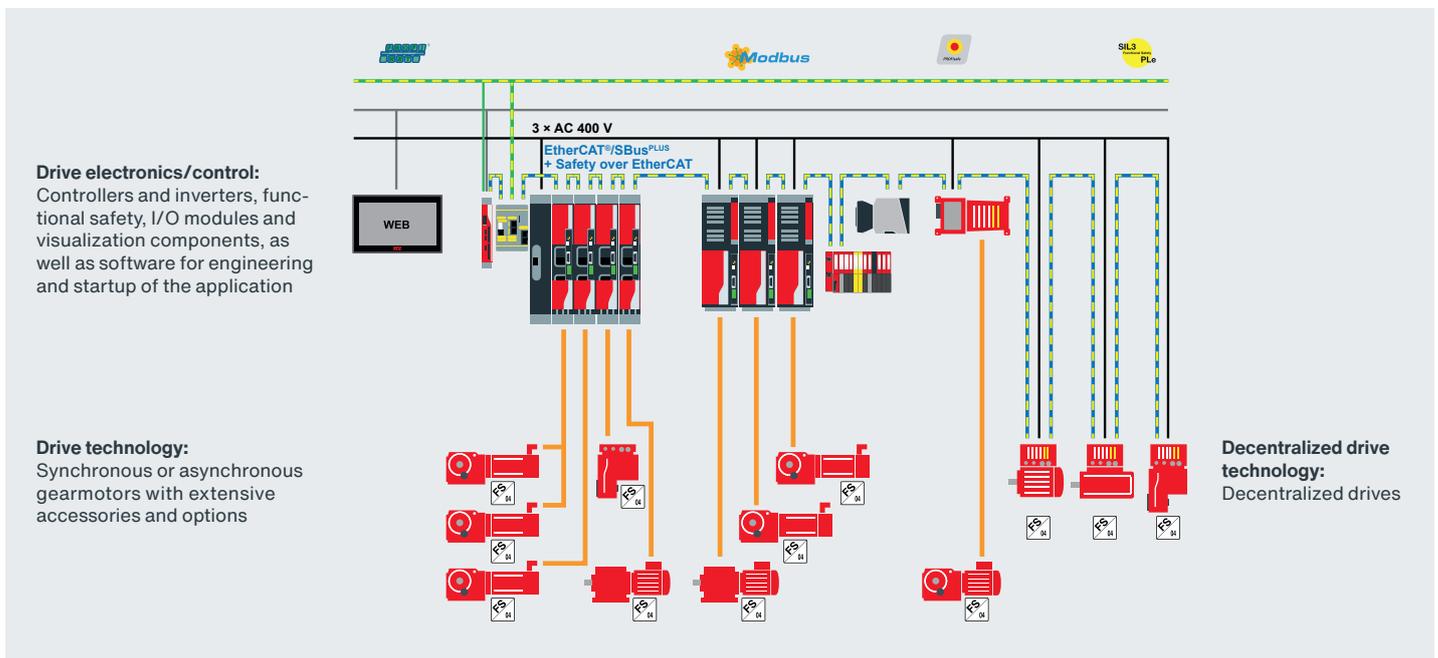
Motion control with safety routing through to Multibus architectures with process and motion control of complex systems – all of this can be realized with hardware and software from the new MOVI-C® modular automation system from SEW-EURODRIVE. No matter which control, communication or energy topology is used – MOVI-C® speaks

every language and supports every machine or system structure.

Want to find out more? Further information about the hardware and software portfolio of the MOVI-C® modular automation system can be found on the following pages.



Topology for motion control with PROFIsafe routing



Multibus topology for module automation combined with process control and motion control, as well as functional safety



Aseptic food filling: Sophisticated motion control topologies promote flexible modularity in systems, as demonstrated by this example of a cup-filling machine with the highest hygiene requirements.



Robotic case packer: The MOVI-C® modular automation system also ensures the perfect interaction between control and drive technology, even when it comes to complex process control and robot kinematics.

MOVI-C[®] CONTROLLER

MOVI-C[®] CONTROLLERS are specially developed for motion control and machine automation. It doesn't matter whether you are creating a single-axis or multi-axis application based on standards or implementing customized, particularly complex motion control applications.

Special functionalities of the MOVI-C[®] CONTROLLER

- Various fieldbus variants available
- Safety routing for integrating an external safety controller into the overall system
- Fast, open real-time EtherCAT[®] bus for controlling drive components and other sensors and actuators
- Rapid replacement of hardware thanks to removable memory cards
- Windows and real-time operating system on a controller with hypervisor concept (available for UHX65A/UHX85A)
- Additional peripheral connections to integrate external devices
- Fast engineering via Ethernet, even over long distances
- Can be combined with the MOVIKIT[®] MultiAxisController

Power class	UHX25A standard	UHX45A advanced	UHX65A progressive	UHX85A power
Memory	512 MB SD memory card	512 MB SD memory card	2 GB CFast memory card	2 GB CFast memory card
CPU	DualCore ARM Cortex-A7, 1 GHz	DualCore ARM Cortex-A7, 1 GHz	Intel Atom [®] E3815 1.46 GHz, Intel Atom [®] E3825, 2 × 1.366 GHz, Intel Atom [®] E3845, 4 × 1.91 GHz	Intel Core2Duo 2.2 GHz
Number of axes interpolated*	Up to 2	Up to 8	Up to 16	Up to 32
Number of axes non-interpolated*	Up to 6	Up to 8	Up to 16	Up to 32

* Number of axes subject to the size of the user program in MOVIRUN[®] flexible and without specifying the minimum task cycle time (not strictly limited).

UHX25A

Motion controller for **simple** motion tasks, such as positioning tasks or speed mode

UHX65A

Higher-level controller and motion controller combined. Process and motion control for **complex** machines

**UHX45A**

Motion controller for **complex** motion tasks, such as synchronous axes with electronic gear unit or electronic cam

UHX85A

Controller for **high-end** motion control, robotics and automation tasks, such as visualization

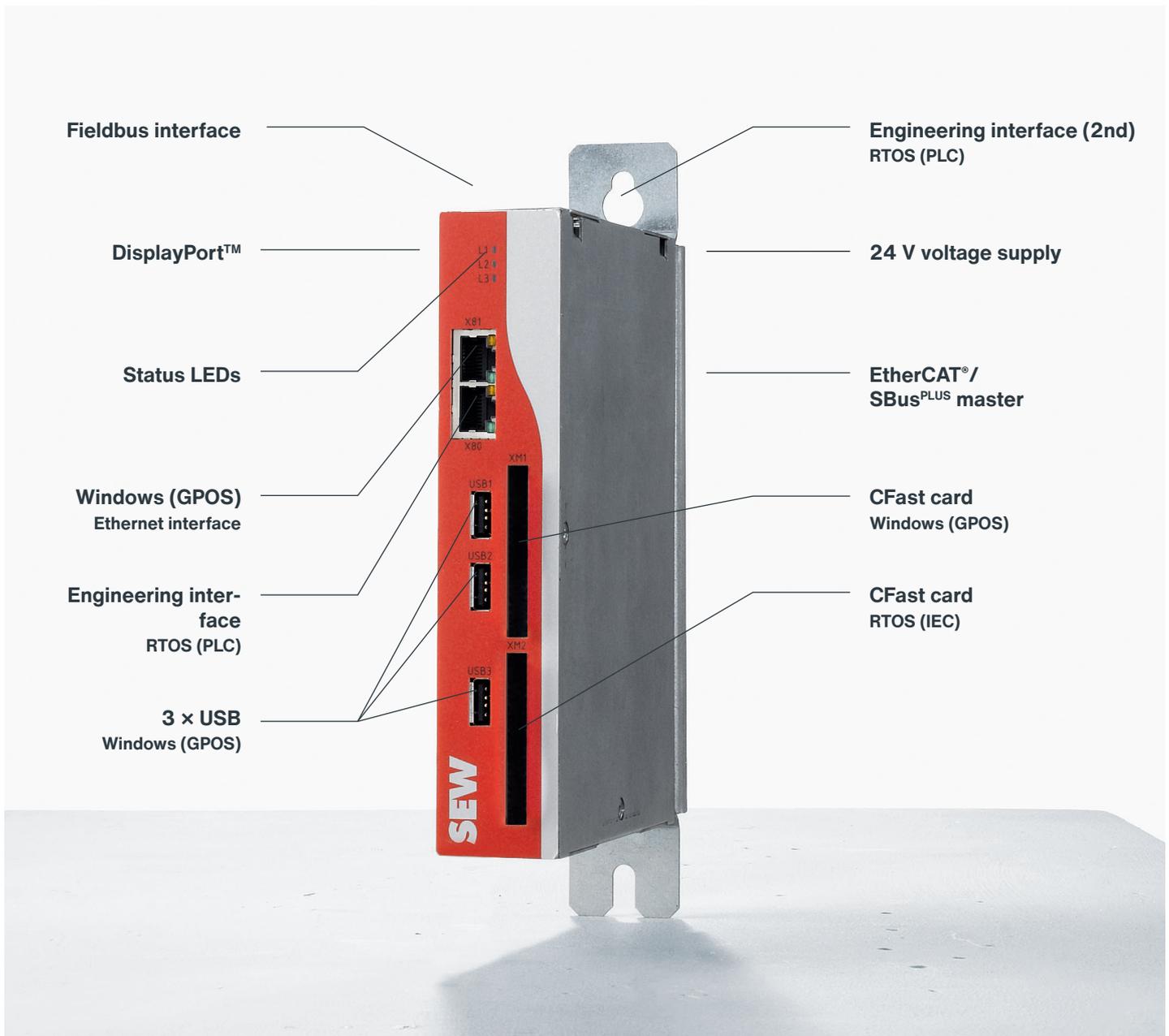
MOVI-C[®] CONTROLLER

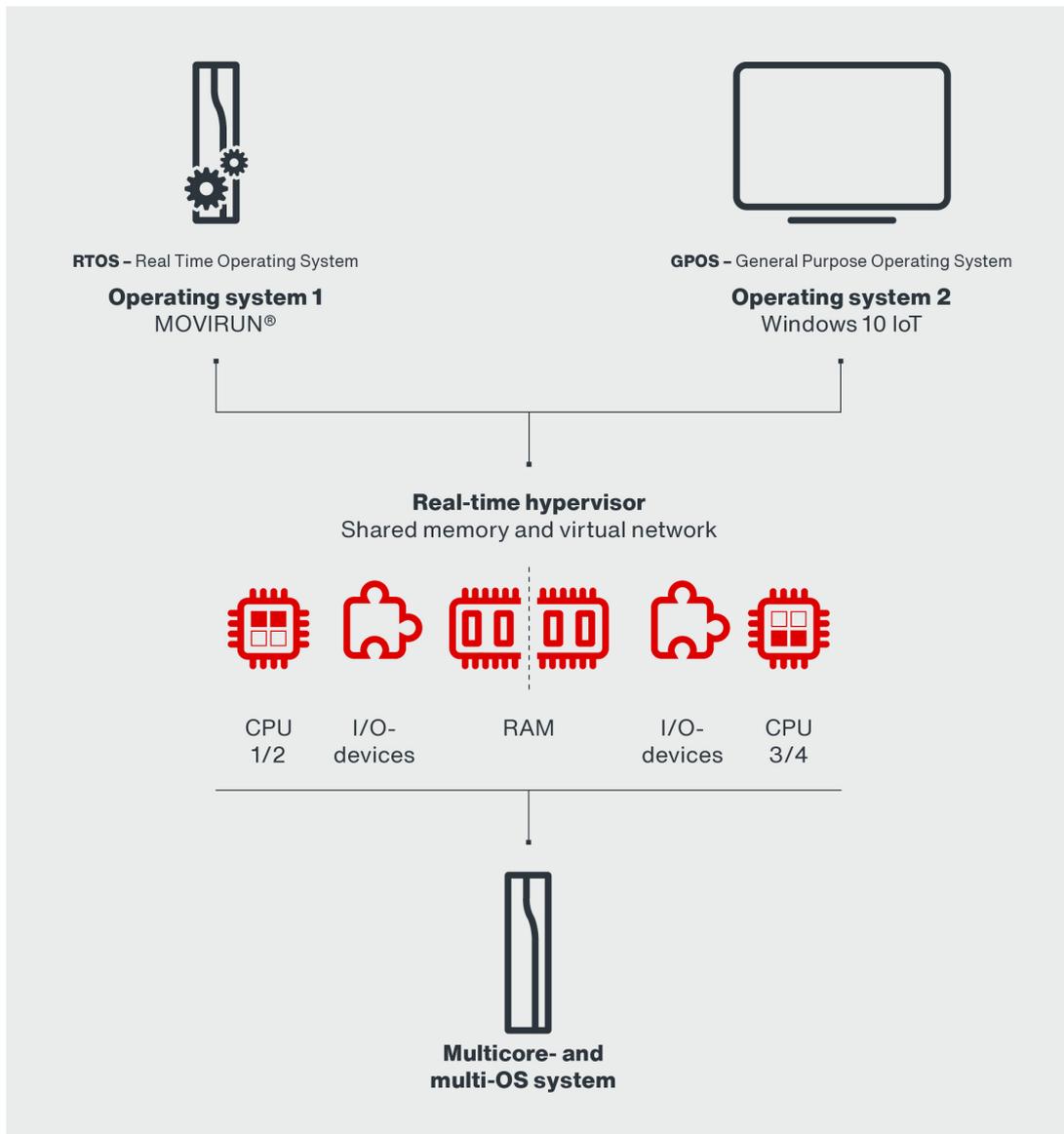
progressive

Type UHX65A-M

This controller expands the all-rounder control system of our "progressive" performance class with integrated PROFINET IO controllers and EtherNet/IP™ scanner functionality.

Use the high-performance EtherCAT[®] fieldbus for the most demanding motion control tasks and, at the same time, as a PROFINET IO controller or EtherNet/IP™ scanner, read the corresponding sensors and control actuators. Gain flexibility and choice in the hardware you can use for complex applications without losing the previous advantages of the UHX65A controller platform, such as user-friendly, fast startup via the MOVISUITE[®] engineering software.





Especially in the case of the **UHX65A** with four cores, an experienced programmer can use the IEC Editor seamlessly integrated into MOVISUITE® to group tasks and explicitly assign them to the individual cores. This enables the implementation of demanding, computer-intensive tasks. As an optional extra, an additional operating system such as Windows 10 IoT can be set up on the UHX65A.

This operating system enables customers to run simple machine-oriented algorithms and applications in higher-level languages. The UHX65A's Hypervisor RTS-based architecture automatically ensures that the additional operating system does not influence the function of the real-time system. In addition to the operating system available as standard, it is also possible to adapt the Windows operating system for the customer, and thus meet IT requirements without having to take any further steps.

MOVI-C® FIELD CONTROLLER

Control technology

Decentralized

Support from the field

Is your installation decentralized? Then look no further than the MOVI-C® FIELD CONTROLLERS. These have also been developed based on the MOVI-C® modular automation system and consist of a decentralized controller and a connection box with a field distributor function. Functions

and interfaces are the same as for the control cabinet controllers. This provides you with a user-friendly portfolio of control technology – seamlessly and continuously – for control cabinet and decentralized installations.

MOVI-C® FIELD CONTROLLER MFC1../FHX25A:

Motion controller for simple motion tasks such as positioning or speed mode

Number of axes:

- Interpolated: up to 2
- Non-interpolated: up to 6

System bus:

- EtherCAT®-/SBus^{PLUS} master with integrated star distributor
- PROFIsafe routing to the axis modules

Functions:

- Optionally available with an integrated load disconnecter to disconnect the lower-level drive axes from the power supply.

MOVI-C® FIELD CONTROLLER MFC1../FHX45:

Motion controller for complex motion tasks, such as synchronous axes with electronic gear unit or electronic cam

Number of axes:

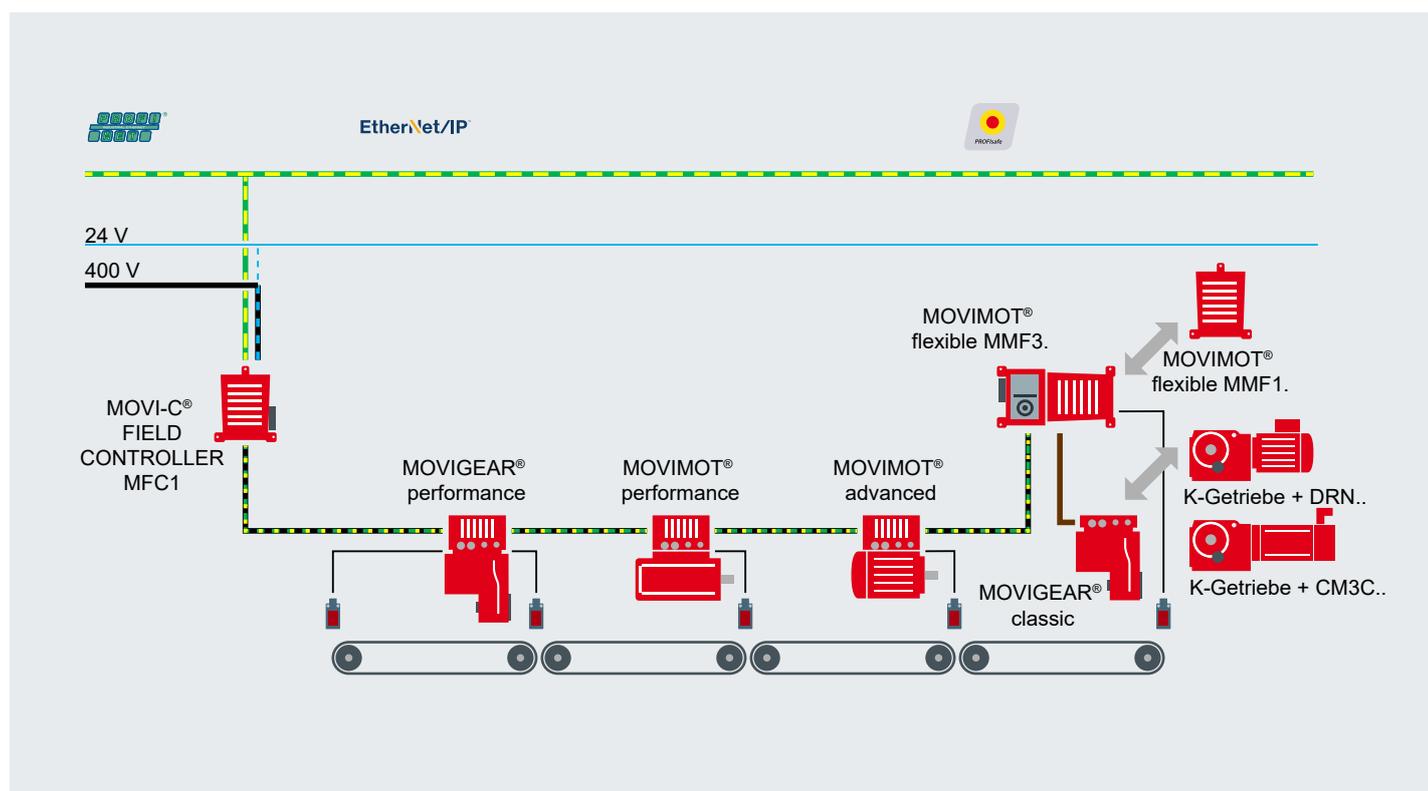
- Interpolated: up to 8
- Non-interpolated: up to 8



Can be connected to all standard control systems

Further advantages

- The housing's high degree of protection enables automation solutions to be realized without the need for an additional control cabinet
- Reduction of system complexity thanks to the modular design of the entire system
- Reduction of the capacity utilization of higher-level fieldbus networks
- Quick replacement of the lower-level drive components by means of integrated data management and an auto-reload function
- Simple operation thanks to the software platform and pre-tested MOVIKIT® single and multi-axis modules
- Simplification of the installation process with hybrid cables and industrial plug connectors
- Systematic detection of the drive and automation technology's condition thanks to condition monitoring

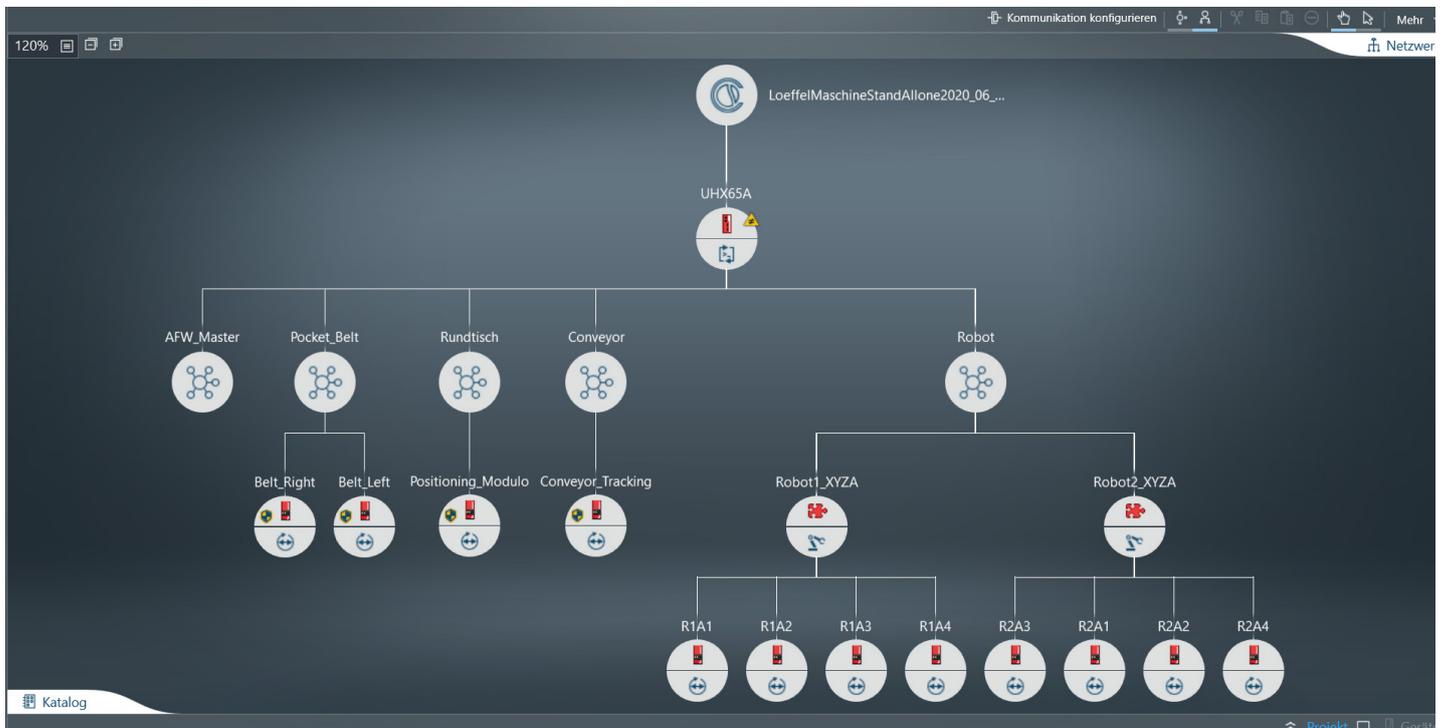


Example topology of a conveyor belt application with decentralized technology

Software

MOVISUITE® Engineering software

Just one piece of software for all of your work steps: from planning and startup to operation and diagnostics. A piece of software that simultaneously reduces time and costs for the user and facilitates operation. That is our MOVISUITE®.



Engineering: project planning made easy MOVISUITE® – engineering software for all hardware and software components from the MOVI-C® modular automation system, regardless of whether control cabinet solutions or decentralized technology are being used. MOVISUITE® standard is free of charge. To enable the functional scope of applications to be easily implemented, MOVISUITE® offers a variety of MOVIKIT® software modules for MOVI-C® CONTROLLERS and MOVI-C® FIELD CONTROLLERS.

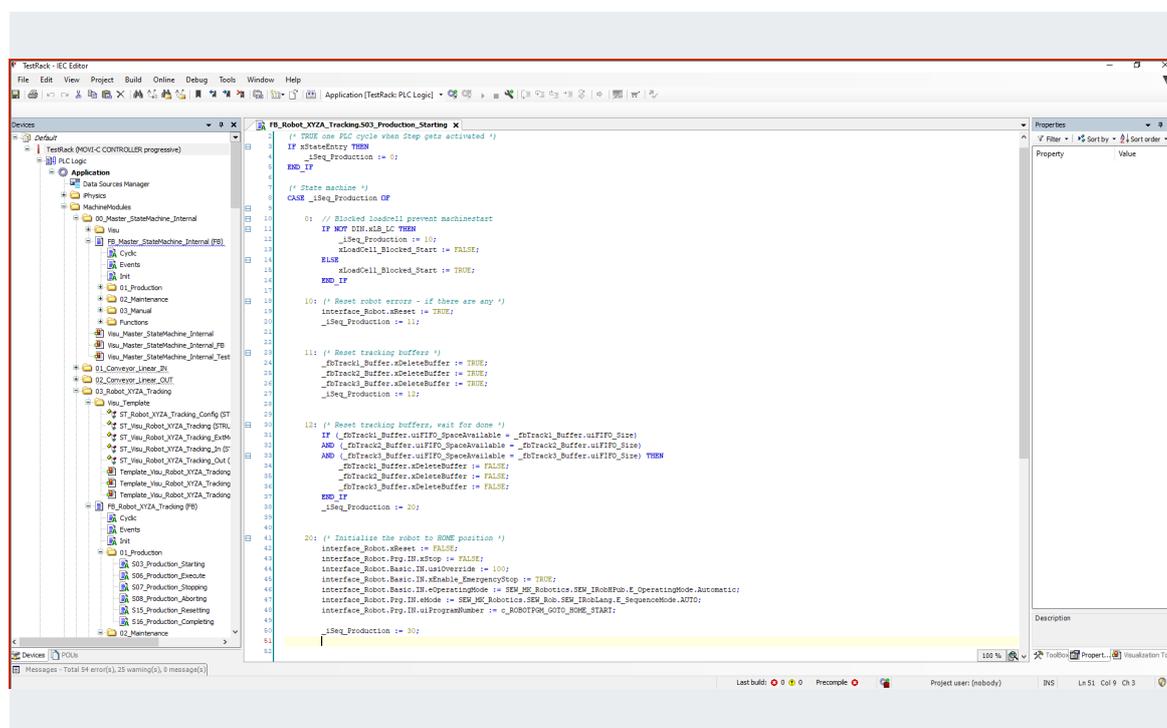
Your benefits

- **All-in-one:** The MOVI-C® modular automation system includes software for engineering and startup.
- **Versatile:** Whether it's a control cabinet solution or a decentralized field solution, the software components fit any hardware from the modular system.
- **Cost-effective:** All the software components share a single goal – to complete their assigned tasks as quickly and efficiently as possible.
- **User-friendly:** Simple operating philosophy for all software components, no matter which hardware is used.

MOVIRUN® – The basis for efficient automation

The MOVIRUN® software platform is designed to be a universal solution, meaning it runs on the entire controller portfolio, MOVI-C® CONTROLLERS and MOVI-C® FIELD CONTROLLERS. It serves as the basis for using the MOVIKIT® software modules, which we offer for a wide variety of applications.

MOVIRUN® flexible is the freely programmable and open platform for automating MOVI-C® components. Laying the foundation for interpolated operating modes and sophisticated motion control applications, it also provides a state-of-the-art programming system based on IEC 61131-3. Programming takes place using an IEC Editor that is integrated seamlessly into MOVISUITE®.



Features and advantages of the integrated IEC Editor

- MOVIKIT® and library concept for simple code reuse
- Extensive debugging and online features for troubleshooting and code optimization
- Object-oriented programming (OOP) and automation of code testing possible
- Automatic code generation based on the hardware/component configuration in MOVISUITE®
- Configurators for integrating different devices from third-party manufacturers and fieldbus systems

MOVIKIT®

Prefabricated software modules – Your assistants for every startup procedure:

MOVIKIT® incorporates prefabricated software modules that are used for simple drive functions, such as speed control and positioning, through to complex motion control functions. The application motions are started up directly on the machine in an intuitive and easy manner using a graphical configuration and diagnostics.

Simply enter your parameters and that's it – startup really is that quick and efficient these days. And if your application still requires it, MOVIKIT® software modules can also be used in programming.

Design startup procedures flexibly with MOVIKIT® software modules – parameterize or program. While the software modules are mainly operated on the MOVI-C® CONTROLLER or MOVI-C® FIELD CONTROLLER, they are also used on MOVIDRIVE® application inverters or Windows devices.



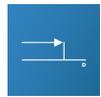
Save time easily

Each MOVIKIT® software module is assigned to a category, thereby ensuring time-consuming startup procedures for your machines or systems will be a thing of the past.



Communication

Software modules for various communication services



Drive

Software modules for positioning applications



Motion

Software modules for standardized motion control



MultiAxisController

Software modules for centrally controlling any number of mechanically coupled drives



MultiMotion

Software modules for universal motion control and control of interpolating axes



Robotics

Software modules for robot control



Power and Energy Solutions

Software modules for energy management



SingleAxis

Software modules for standardized single-axis functionalities



Stackercrane

Software modules for storage and retrieval systems



Visualization

Software modules for the graphical depiction of controller data



MOVIKIT[®] AutomationFramework

Creating a complete machine faster

The MOVIKIT[®] AutomationFramework provides a standardized state and mode manager for implementation on all MOVI-C[®] CONTROLLERS.

It is compatible with PackML, offers defined interfaces such as PackTags, and uses the defined modes and states. A master and a sample slave are included in the basic

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



→ **OMAC-defined industrial standard** thanks to PackML (Packaging Machine Language) compatibility

→ **Time-saving pre-engineering** thanks to a simulation of the application

→ **Added value** through additional features such as preprogrammed robot tracking with load balancing

→ **Reduced programming outlay** by using prefabricated software modules

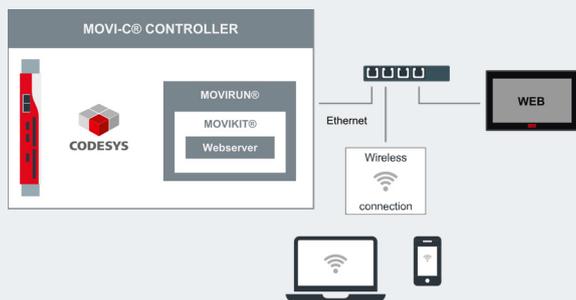
MOVIKIT® Visualization

MOVIKIT® Visualization makes it possible to create any number of complex user interfaces based on available visualization elements using the visualization editor integrated in the IEC Editor. In this way, MOVIKIT® Visualization reduces development time. The generated visualization runs on the entire MOVI-C® control portfolio, as well as on Windows 10-based systems.

- Direct access to all controller variables (additional data exchange projects are not necessary)
- Reduced development time
- Reuse of visualization frameworks and preset objects
- Visualization of all functions and elements available in CODESYS (e.g. alarm management, trace and trend visualization, user management, recipe management, visualization styles)

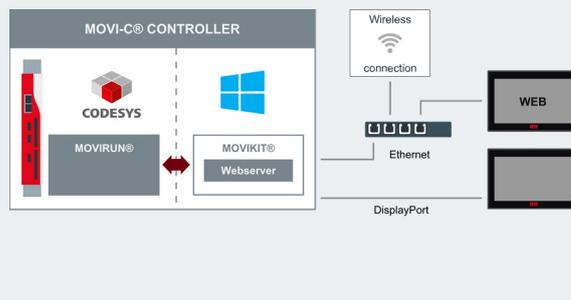
MOVIKIT® Web Visualization

Visualization runs on a MOVI-C® CONTROLLER without Windows 10 IoT operating system directly in the IEC part



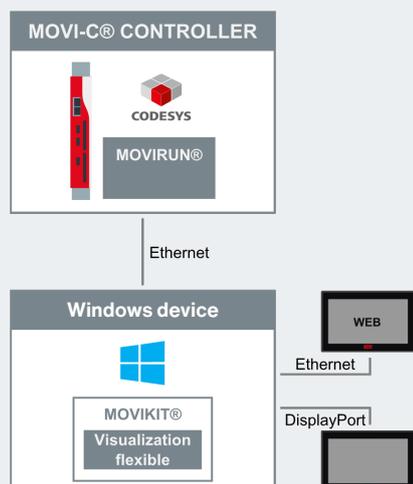
MOVIKIT® Visualization **basic**

Visualization runs on a MOVI-C® CONTROLLER with Windows 10 IoT operating system and is connected to the IEC part via the internal network.



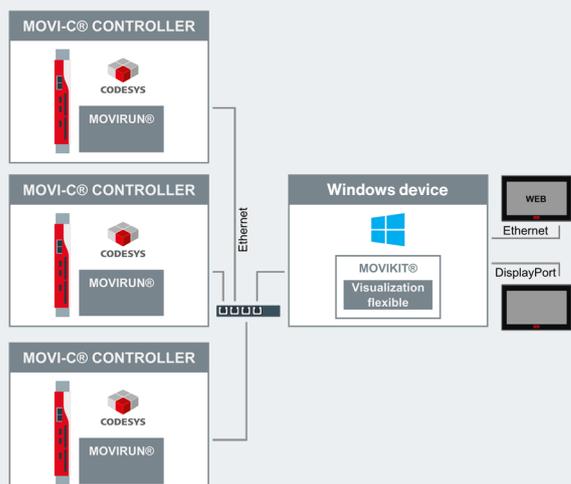
MOVIKIT® Visualization **flexible**

Visualization runs on an external Windows 10 IoT system and is connected to a MOVI-C® CONTROLLER via an Ethernet network.



MOVIKIT® Visualization **multi**

Visualization runs on an external Windows 10 IoT system and can be connected to several CODESYS controllers via an Ethernet network.



Displays and Visualization

It's important to keep track 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 mean it can be operated even when wearing gloves, and safety functions such as key switches, emergency stop systems and immobility alarms 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 a comprehensive portfolio of visualization solutions for various applications.

Based on the MOVI-C® CONTROLLERS or MOVI-C® FIELD CONTROLLERS, users first select an industrial display unit (e.g. a web operator panel, an operator terminal or a handheld terminal) to suit the application at hand. The MOVIKIT® Visualization software module (Web Visualization, Visualization basic, Visualization flexible or Visualization multi) then offers the possibility to create a graphical interface. This can be freely designed or simple (free) to complex (paid) prefabricated templates (frameworks) can be used.

One example is the ParameterMonitor add-on for the MOVIKIT® Visualization software module.

Use the CODESYS user interface for this, which is the same as you use for IEC programming. This creates a seamless transition between the two worlds. Depending on the visualization task, visualization can be conducted on the controller or on a separate Windows PC.



Features and advantages

- End-to-end hardware portfolio, ranging from mobile display units and operating panels to monitors and web panels
- Visualization editor added to the engineering tool used (IEC Editor) to create specific graphical interfaces (HMI)
- MOVIKIT® Visualization makes it possible to create any number of complex user interfaces based on available visualization elements and can be depicted as a target or web visualization. Target visualization for connecting to an external monitor, e.g. via a DisplayPort, and web-based visualization based on open standards such as HTML5
- In addition, the solution enables direct access to the controller variables. This eliminates the need to configure the data exchange
- Integration of prefabricated frameworks (templates) in SEW-EURODRIVE Design saves time.
- Option to create straightforward diagnostics pages (e.g. mapping of the application's parameter or status information)
- Visualization displayed more than once on the system or via remote access
- Distributed visualization on multiple end devices
- CODESYS web server positioned locally on the controller
- Remote access via a standard browser
- Based on HTML5 – also runs on smartphones and tablets
- Scalable and adaptable – any device with a web browser can be used as the HMI client without the need for additional software
- Web visualization supports several displays on a single system



Web Operator Terminal WO-P11D-150-0, WOP11D-100-0 and WO-P11D-70-0

- Chromium-based HTML5 web browser
- i.MX8 Quad Core CPU
- 7" monitor with WSVGA resolution (1024 × 600)
- 10.1" monitor with WXGA resolution (1280 × 800)
- 15.6" monitor with FHD resolution (1920 × 1080)
- Luminance: 450 cd/m²
- Capacitive touchscreen (PCAP)

Operator Terminal OPT11D

- 15.6" monitor
- Resolution: FHD (1920 × 1080)
- Anti-reflective glass cover
- Luminance: 450 cd/m²
- Capacitive touchscreen (PCAP)
- Interfaces: 1 × DVI, 1 × DP, 1 × USB 2.0

Handheld terminal DOP21C-T70

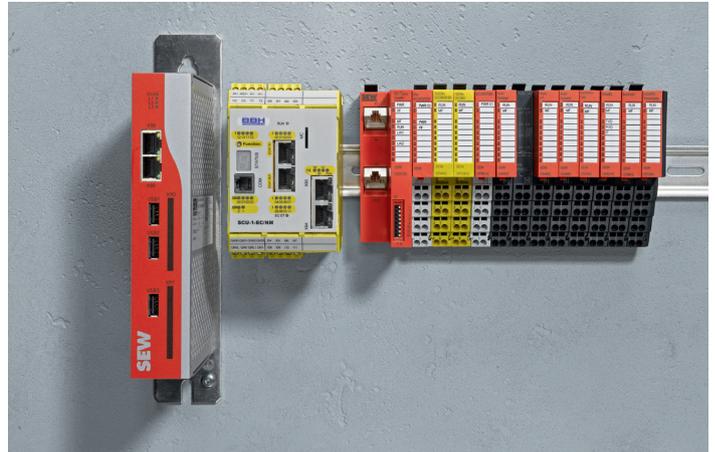
- 7" TFT WSVGA display, WSVGA 600 × 1024 pixels
- Analog resistive touch
- Intel Celeron N2807 2 × 1.58 GHz
- 32 GB SSD Flash, 4 GB DDR3 RAM
- 21 buttons and 4 status LEDs
- Key switch
- Two-channel emergency stop or two-circuit stop button
- Windows 10 IoT Enterprise operating system

Compatible software

- MOVISUITE® RobotMonitor
- MOVIKIT® Visualization flexible

I/O modules

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. You can adapt each individual module to the exact requirements of your application.



The MOVI-PLC® I/O system C portfolio enables the **integration of external field units**, offering users a high degree of flexibility. The modules can be integrated into the controller's EtherCAT® bus using the bus coupler.

In addition to reading binary and analog signals, function modules for **reading SSI encoder signals, energy measurement modules, counter modules and modules for connecting strain gauges** are also available.

To meet the requirements for machines and applications in the field of functional safety, the SEW-EURODRIVE portfolio includes **two Safety over EtherCAT® modules, each with four safe inputs and outputs**.

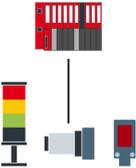
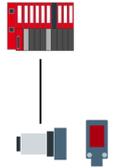
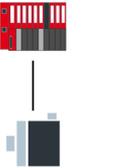
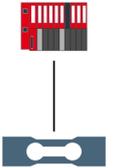
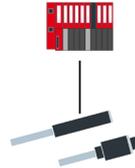
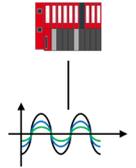
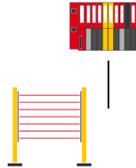
For analysis and logical connection, the modules can be connected via the bus coupler to a **safety controller**, e.g. **the SCU safety controller** (which can be ordered from SEW-EURODRIVE).

Device functions

- 100% compatible with all MOVI-C® CONTROLLERS
- Up to 64 electronics modules on the backplane bus
- Easy installation/servicing
- Status and diagnostic display using LEDs
- Safe and non-safe I/O modules
- Upright wiring



Overview of the technology

Presence monitoring/ reference initiators (binary signals)	Height monitoring/ distance measuring (analog signals)	Evaluating en- coder signals (counter modules/ SSI module)	Load cell/ strain gauge	Serial interfaces	Temperature measurement	Energy measurement	Hazardous point protection with hand and pres- ence detection/ functional safety
ODI..C ODO..C	OAI..C OAO..C	OSM12C OSM13C OSM14C	OSM11C	ORS11C	OAI45C	OEM12C	OFI41C OFO41C
							
Optoelectronic sensors, ultra-sound sensors, inductive/capacitive sensors, laser light sensors, print mark sensors, light columns and fluid sensors	Optoelectronic distance measuring devices, ultrasound sensors and inertial sensors	Rotary encoders and encoders	Strain gauge	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

Your benefits

Universal

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

Space-saving

stepped wiring level with spring-clamp technology

Easy installation/maintenance

Easy and fast installation due to secure sliding mechanism



Scalable

Up to 64 modules are possible on the backplane bus with additional power supply modules

MOVI-C®: Inverter technology

Central, decentralized, single-axis, or multi-axis systems, the inverters from the MOVI-C® modular automation system ensure precise implementation of control commands. Simple and intuitive, the inverters can be operated end-to-end with user-friendly MOVISUITE® software. The Power and Energy Solutions can be used to expand handling applications easily and energy-efficiently.



Power and Energy Solutions – the intelligent power supply and energy management system

- Reduction of power peaks from the supply system
- Reuse energy and minimize energy costs
- Bridge system operation in the event of a power failure or supply fluctuations

MOVIDRIVE® modular – multi-axis system in a compact format

- Compact single-axis and double-axis module
- Integrated digital interfaces with the motor
- Safety technology included
- Expandable with up to 30 drives on one power supply module

MOVIDRIVE® system – perfect for high power ratings

- Single-axis system that can be extended easily
- Up to 1200 m power lead for long distances
- Also available as a variant with EtherCAT® CiA402 profile



Drives

Gear units, motors and gearmotors from one modular system

What does drive technology from SEW-EURODRIVE contribute to your applications and automation solutions? A very important contribution, in fact: Diversity! When it comes to drive technology, diversity gives you the scope and versatility to put your solutions into practice, satisfy automation requirements, achieve lean structures and deliver cost-effective processes. Smart, customized drive technology is a key element in your optimum solution.

Diversity centered around applications – that is what it's all about: The range includes gear units for standard and servo applications that come in different sizes and with different outputs, speeds, torques, designs and varied finishes, all combined with asynchronous or synchronous AC motors. Linear motors, electric cylinders, brakes, built-in encoders, and diagnostic units complete this wide-ranging portfolio. Naturally, the products have all the necessary worldwide approvals.

Our new CM3C.. series of synchronous servomotors

Powerful

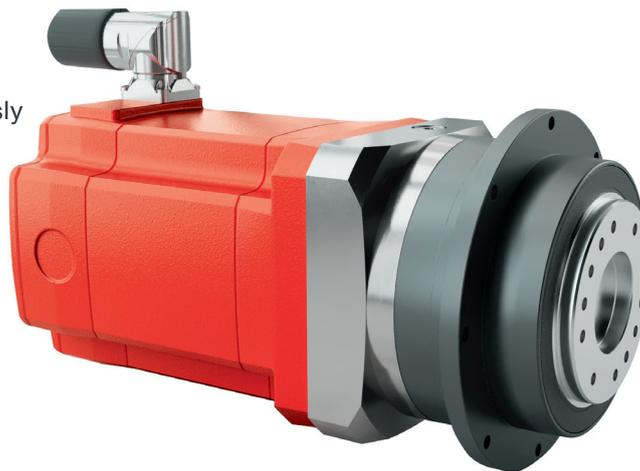
High torque and simultaneously high speeds, even at 100% continuous duty

Compact

For use even in confined installation spaces due to their extremely compact design

Cost savings

Saving on time and costs for installation due to the use of single-cable technology



Long service life

Up to 100% service life for seals due to use of the exclusive Premium Sine Seal

Time saving

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



Digital motor and data integration

The MOVILINK® DDI digital motor interface transmits performance, brake and diagnostic data from the inverter to the motor. Start the data revolution in your application, too – whether it's a centralized or decentralized installation topology, a synchronous, asynchronous or linear motor. You never again have to wonder which encoder goes with which interface. It will always match.

Functional safety

Functional safety technology does more than ensure personal safety and the safe operation of machines and systems.

It can also boost efficiency, reduce safety zones and thus measurably reduce overall costs.

All devices of the MOVI-C® controller platform enable safety routing. This makes it possible to integrate an external safety controller into the axis system. As a result, the controller communicates directly with the axis modules.

Consequently, it is also possible to use safety functions from third-party manufacturers that permit kinematic safety functions. **We would be happy to recommend appropriate products.**

With MOVIMOT® flexible, MOVIMOT® advanced, MOVIMOT® performance and MOVIGEAR® performance, the user is provided with a large selection of decentralized inverters and decentralized drive technology for use in applications up to SIL 3/PL e. The STO safety function up to PL e is integrated in all devices as standard. Additional safety functions such as safely limited speed (SLS) and various safe communication protocols are optionally available.

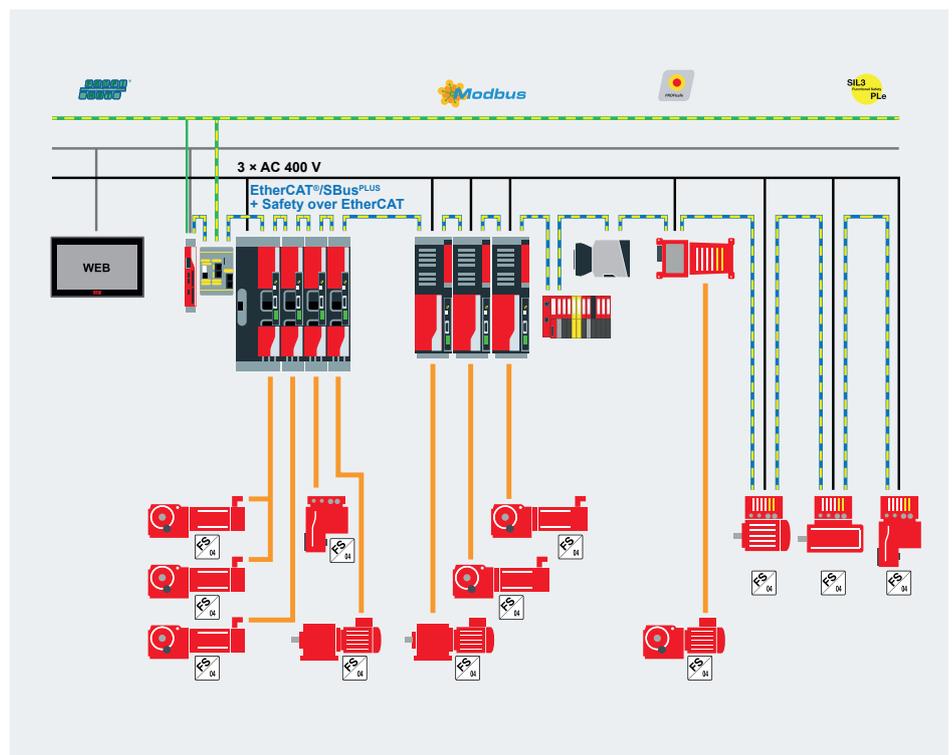
It is easy to implement autonomous machines and autonomous system modules with Motion Control and Safety. Simple connection to higher-level PROFI-safe systems is possible where required. Safe kinematics functions such as TCP speed can be realized in the safety controller as an optional extra.

Thanks to end-to-end topology for control cabinets and decentralized devices, mechanical engineers can flexibly switch between devices and continue to use their standardized system modules.

The safe communication profiles PROFI-safe, Safety over EtherCAT® and CIP Safety™ are available for all devices.



Alongside the integrated STO in PL e, the modular design of the MOVIDRIVE® "system", "modular" and "technology" inverters means users can also plug in safety cards. This makes it possible to expand safety functions as required.



Topology example for module automation with functional safety via the MOVISAFE® CS..A cards



The new MOVISAFE® CSA31A safety card represents a significant boost in functionality and therefore flexibility for the MOVI-C® safety portfolio. It makes it possible to achieve more complex functions, such as safe speed and safe position from all kinds of encoder combinations (e.g. motor and distance encoders), while maintaining the same level of user-friendliness.

Based on the SEW-EURODRIVE principle of "parameterization instead of programming", even the most complex safety function can be started up quickly and easily, thanks to straightforward parameterization in MOVISUITE®. Safe communication profiles such as PROFIsafe, CIP Safety™

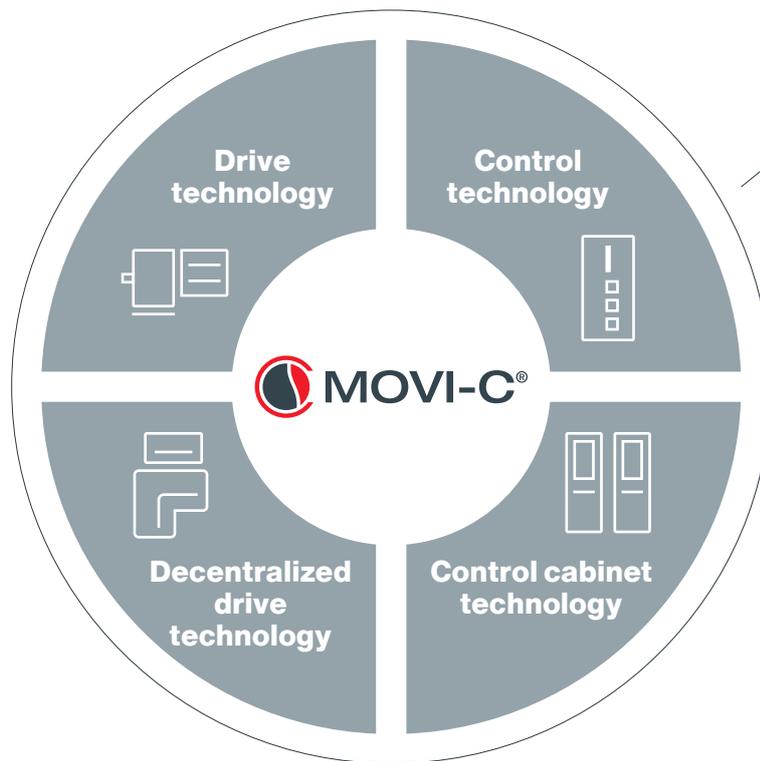
or Safety over EtherCAT® can be used to easily activate/ implement safety subfunctions, including STO, SS1, SLS and SLP up to PL e. Even in the case of systems subject to slip, mechanical engineers will find fast and simple solutions to challenging safety problems and be able to ensure rapid on-site startup for the end customer.

The CSA31A complements the existing safety card portfolio for inverters from the MOVI-C® modular automation system. SEW-EURODRIVE has a customized solution for every application, whether the safety technology involved is straightforward or highly complex.

Hardware	CSB21A	CSB31A	CSS21A	CSS31A	CSA31A
Safe inputs	4	4	4	4	4
Safe outputs	–	2	2	2	2
Safe stop functions	STO, SS1-t	STO, SS1-t, SBC	STO, SS1-t, SBC	STO, SS1-t, SBC	STO, SS1-t, SBC
Safe movement functions	–	–	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM, SDI	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM, SDI	SOS, SS1-r, SS2, SLS, SSR, SLA, SSM, SDI
Safe positioning functions	–	–	SLI	SLI	SLI, SLP, SCA
Safe communication	PROFIsafe, Safety over EtherCAT®, CIP Safety™				
Process value via safe communication	–	–	Speed	Speed	Speed, position, SCA status
Additional multi-encoder input	–	Safe/non-safe	–	Safe/non-safe	For safety
Encoder for functional safety	–	–	FS motor encoder	FS motor encoder	Motor encoder sin/cos, SSI

MOVI-C®

The modular automation system
for complete solutions from a single source



Control technology
and more:
Hardware and software
from a single source

3 × 3 reasons to use MOVI-C®

Simplicity

THREE steps: Plan – Connect – Move

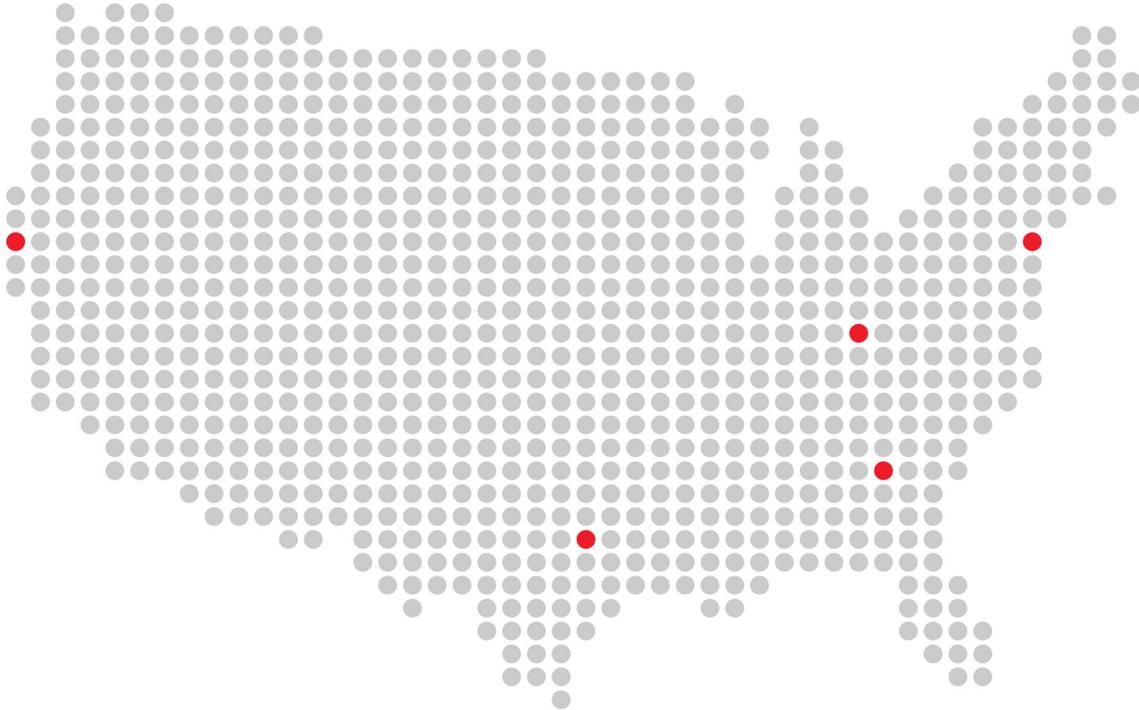
Future-proofing

THREE promises: Customized
solutions – Today – and Tomorrow

Consulting and service

THREE success factors: Delivery
capability – Consulting – Worldwide





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