**SEW EURODRIVE**

# Catalog

## MOVI-C® Software Components

# Table of contents

# 1 Introduction

## 1.1 The SEW-EURODRIVE group of companies

### 1.1.1 Global presence

Driving the world – with innovative drive solutions for all industries and for every application. Products and systems from SEW-EURODRIVE are used all over the world. Be it in the automotive, building materials, food and beverage, or metal-processing industry – the decision to use drive technology "made by SEW-EURODRIVE" stands for reliable products with regard to functionality and investment.

Products and services from SEW-EURODRIVE are represented in all important industries of our time. We also show this presence with subsidiaries and production plants all over the world, as well as with our service, which we see as an integrative part of our portfolio that extends SEW-EURODRIVE's high quality standards.

### 1.1.2 Always the right drive solution

With the broad product portfolio from SEW-EURODRIVE, which also includes mechatronic drive units, frequency inverters, controllers, software and communication in addition to the tried-and-tested modular system for gearmotors, it is possible to implement the perfect drive solution for every application.

**Gear units and motors**

Thanks to the modular system, gearmotors can be combined individually according to the required speed and torque ranges, the space requirements and the ambient conditions. Gear units and gearmotors offer unique and fine power range graduation and the best economic prerequisites to face any drive challenge.

Motors by SEW-EURODRIVE can be mounted directly or via adapter to SEW-EURODRIVE gear units. They meet all worldwide requirements regarding energy efficiency and technical regulations. A wide range of options and accessories ensures high flexibility for adjusting the motor to the requirements of the user and the application.

**Inverters**

The proven inverter series MOVITRAC®, MOVIDRIVE® and MOVIAXIS® enhance the gearmotors, forming a combination that blends in perfectly with the existing SEW-EURODRIVE systems program.

**Modular automation system**

With its brand MOVI-C®, SEW-EURODRIVE launches a new generation of drive and automation technology. MOVI-C® is the modular automation system that allows for the highest level of system and machine automation. It comprises drive technology, MotionControl, control technology and visualization.

MOVIDRIVE® modular is the modular application inverter for all types of applications, ranging from simple open-loop speed control to servo drives with kinematic model. MOVIDRIVE® modular can be supplemented by connecting MOVIDRIVE® system single-axis units. These possess functionalities comparable to those of axis modules, but have their own line connection. Especially in the upper power range, MOVIDRIVE® system complements the modular application inverter.

MOVIDRIVE® modular and system are intended for operation at the MOVI-C® CONTROLLER, the controller from SEW-EURODRIVE. They offer a powerful clock-synchronous connection via the integrated EtherCAT®/SBus^PLUS communication interface. Other EtherCAT® stations from SEW-EURODRIVE or other manufacturers can be controlled and diagnosed by the MOVI-C® CONTROLLER.

The MOVISUITE® engineering software, with its unique operating philosophy, prevails over all MOVI-C® hardware and software components. MOVISUITE® was developed with a focus on systematically shortening the startup time and covers the entire engineering process, from planning to diagnostics.

### Decentralized drive technology

For economical, decentralized installations, SEW-EURODRIVE offers decentralized drive technology components, such as MOVIMOT®, the gearmotor with integrated frequency inverter or MOVI-SWITCH®, the gearmotor with integrated switching and protection function. SEW-EURODRIVE hybrid cables have been designed specifically to ensure cost-effective solutions, independent of the philosophy behind or the size of the system.

The decentralized drive technology portfolio is complemented by the DRC.. electronic motor, MOVIGEAR® mechatronic drive system, MOVIFIT® decentralized drive controller, MOVIPRO® decentralized drive, positioning, and application controller, as well as MOVITRANS® system components for the contactless energy transfer system.

The smart energy management system MOVI-DPS® enhances the modular product portfolio from SEW-EURODRIVE. With MOVI-DPS®, SEW-EURODRIVE offers the perfect combination: Conserving resources. Reducing costs.

MOVI-DPS® allows for stable power grids, no power failures, and consistently reliable system availability. MOVI-DPS® shows what it can do in both mobile and stationary applications. In addition, MOVI-DPS® can be combined with other systems such as the MOVITRANS® contactless energy transfer system, resulting in further important synergy effects.

### Industrial gear units

Power, quality and sturdy design combined in one standard product: With high torque levels, industrial gear units from SEW-EURODRIVE realize major movements. The modular concept will once again provide optimum adaptation of industrial gear units to meet a wide range of different applications.

### Individual system solutions with MAXOLUTION®

MAXOLUTION® from SEW-EURODRIVE provides individual system solutions in all areas of system and machine automation. From electromechanical drives, controllers and communication to visualization and the MOVITRANS® contactless energy transfer system to a comprehensive service portfolio, MAXOLUTION® offers all modules required to optimally design customer-specific solutions for machines and systems.

MAXOLUTION® combines individual products of the proven modular system with innovative system components to form individual solutions that perfectly match the requirements of the specific application – "powered by SEW-EURODRIVE".

### Safe – flexible – effective: safetyDRIVE

Guaranteeing the safety of all employees and preventing work accidents while ensuring trouble-free production processes are demands placed on all production areas. safetyDRIVE, the comprehensive safety concept, allows you to implement your machines "safely," in accordance with the currently valid guidelines. With controllers that meet the respective requirement of the safety categories or the performance levels and that monitor instead of switch off.

All of our drive and frequency inverters provide the function that safely stops the electrical power to the motor (STO). The MOVISAFE® components complete the portfolio – integrated into the inverter as option cards DFS..B or DCS..B or modular as safety modules UCS..B. The decentralized MOVIFIT® and MOVIPRO® drive controllers with integrated safety functions are ready for use in decentralized installations.

The functionally safe motor options allow for implementing safety functions in safety-related applications. Safety encoders are used to implement safety functions with respect to speed, direction of rotation, standstill, and relative position. Safety brakes can implement safety functions with respect to decelerating and stopping.

### 1.1.3    Your ideal partner

Its global presence, extensive product portfolio and broad spectrum of services make SEW-EURODRIVE the ideal partner for the machinery and plant construction industry when it comes to providing drive systems for demanding drive tasks in all industries and applications.

For detailed information on the entire SEW-EURODRIVE product portfolio, refer to our website www.sew-eurodrive.com where you can find out about components, system solutions, services and industries. Via the Online Support, you can access a large selection of documents and tools such as the product configurator and different selection guides as well as all documentation in different languages for download.

## 1.2 Documentation

### 1.2.1 Contents of this documentation

This document gives an overview of all the software components available in the modular automation system of MOVI-C®. A brief description of the function as well as information on the required licenses and order information is provided for each software product.

### 1.2.2 Additional documentation

For a more detailed description of the individual software components, refer to the respective manuals. The manuals are available on the SEW website (www.sew-eurodrive.com) under Online Support, and are linked in this document in the respective chapter.

## 1.3 Product names and trademarks

All product names included in this documentation are trademarks or registered trademarks of the respective titleholders.

## 1.4 Copyright notice

SEW EURODRIVE

# 2 System description

## 2.1 Modular automation system MOVI-C®

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

MOVI-C® comprises drive technology, motion control, control technology, and visualization. The individual hardware and software components are optimally coordinated with one another.
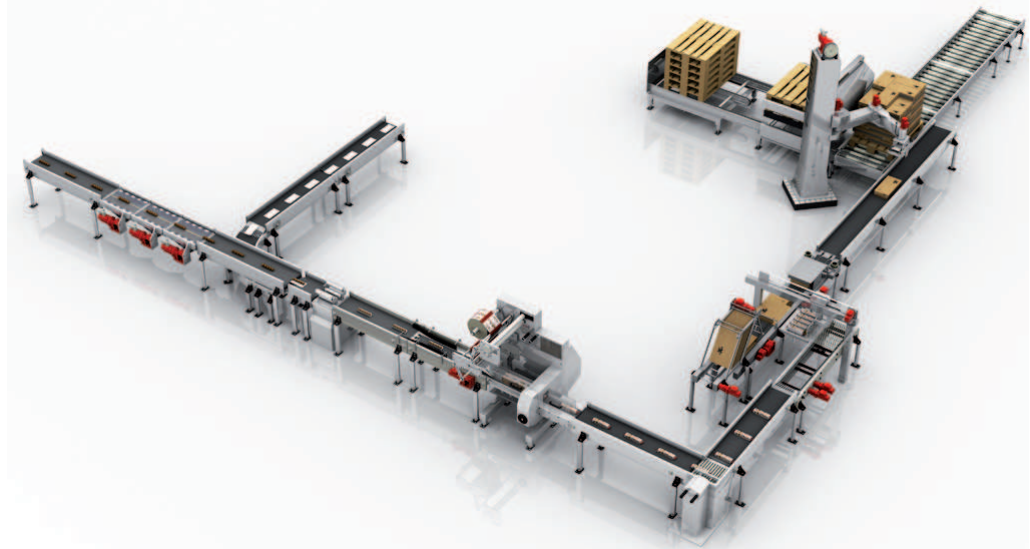


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The product portfolio comprises both purely parameterizable and freely programmable MOVI-C® CONTROLLERs. In both cases, the foundation for solving movement and drive tasks is the MOVIRUN® software platform and the MOVIKIT® software modules.

The MOVISUITE® engineering software, with its unique operating philosophy, prevails over all MOVI-C® hardware and software components. MOVISUITE® was developed with a focus on systematically shortening the startup time and covers the entire engineering process, from planning to diagnostics.

Ideally adapted application inverters are available in the form of generation C MOVIDRIVE® devices. These inverters control SEW-EURODRIVE's entire range of asynchronous and synchronous motors, with and without encoder feedback, and in this way reduce variance and consequently warehousing costs to a minimum.

The MOVIDRIVE® application inverters are supplemented by the "Power and Energy Solutions" product series. Its intelligent power and energy management components as well as customized MOVIKIT® software modules allow for configuring integrated and highly communicative energy supply solutions.

The system is completed by fully integrated functional safety technology. This makes safe movement, safe braking, safe end positions and safe vertical drives available as standard.

Various I/O systems and visualizations are also available for automation solutions. Visualization can be implemented with touch panels of various sizes.

**Overview: MOVI-C® product portfolio**

| Web shop |
|---|
| **Online Support** |

| Engineering software |
|---|
| **MOVISUITE®** |

Hardware

| CONTROL TECHNOLOGY | VISUALIZATION | I/O SYSTEMS |
|---|---|---|
| **MOVI-C® CONTROLLER** | **OPT71C** | **MOVI-PLC® I/O system C** |
| **MOVIRUN®** | **DOP11C** | |
| **MOVIKIT®** | | |

Hardware

**DRIVE INVERTERS**

| MOVIDRIVE® system | MOVIDRIVE® modular |
|---|---|
| **MOVISAFE®** | **MOVISAFE®** |
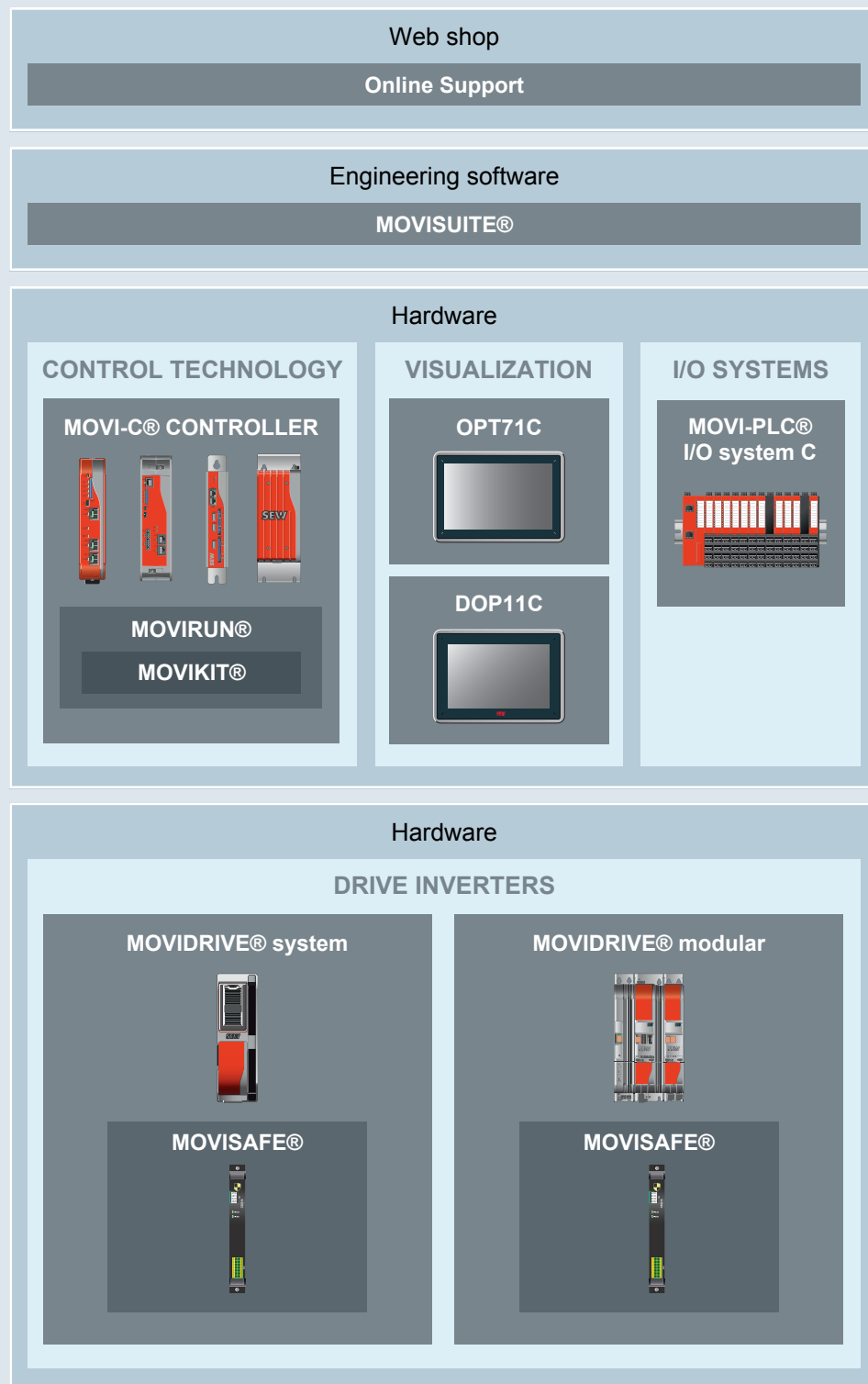
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The entire clock-synchronous communication between MOVI-C® CONTROLLER and all subordinate automation components is implemented using the EtherCAT®/SBus^PLUS system bus. Safe and non-safe process data, engineering and diagnostics data are transported via this bus. Third-party components that support EtherCAT® for importing the project planning file are also supported. A variety of options for addressing slave components enable simple data management in case of service incidents.
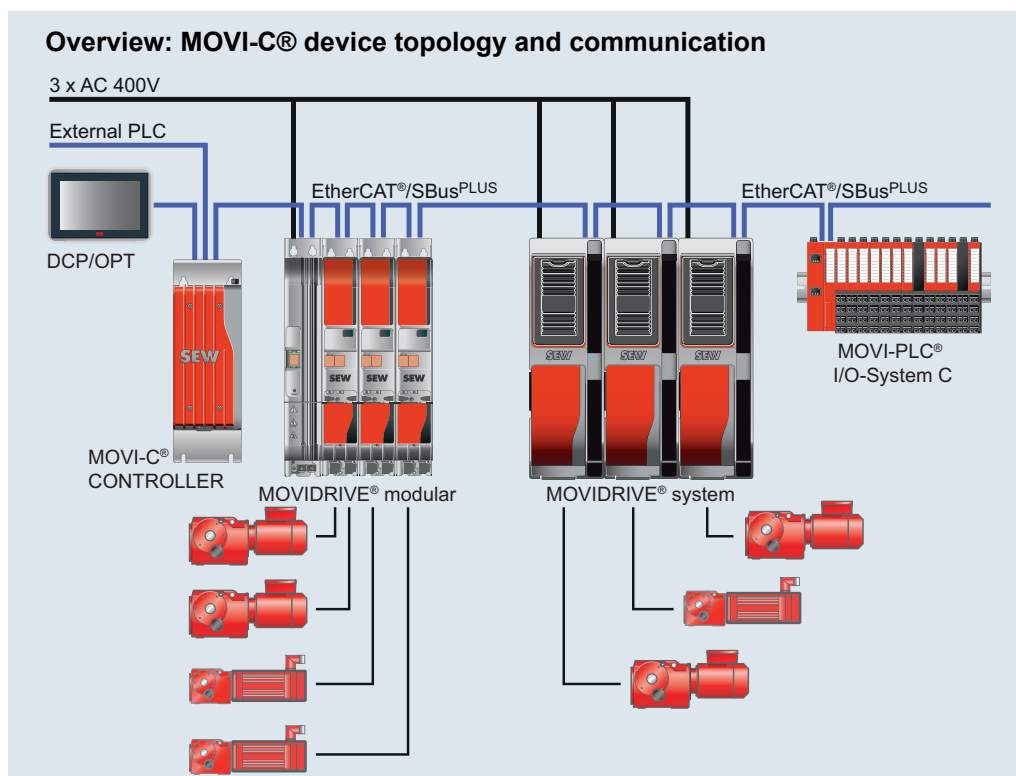


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## 2.2   MOVI-C® software components

MOVI-C® software components are divided into three areas:

- **Engineering software MOVISUITE®**

  Engineering software for all MOVI-C® hardware and software components. The basic version of MOVISUITE® standard is free of charge. Various MOVISUITE® apps are available for extending the scope of functions of the basic version.

- **Software platform MOVIRUN®**

  Software platform for MOVI-C® CONTROLLERs that determines the type of the runtime system. MOVIRUN® flexible allows for implementing simple or complex motion control functions, and for efficiently utilizing these functions by means of graphical user interfaces.

- **Software modules MOVIKIT®**

  Preconfigured software modules that can be taken into operation easily by means of configuration and diagnostics via graphical user interface. MOVIKIT® software modules are divided into various categories and are available for the various MOVIRUN® software platforms.

### 2.2.1 Type code

The following table shows the structure of the type code by way of an example:

| Example: SMK0001-020 (MOVIKIT® MultiMotion Camming for UHX25A) | | |
|---|---|---|
| Type ID | **S** | • S = Software |
| Software group | **MK** | • MK = MOVIKIT® |
| | | • MR = MOVIRUN® |
| | | • MS = MOVISUITE® |
| Software category | **00** | • 00 = Motion/MultiMotion |
| | | • 10 = Drive |
| | | • 11 = Robotics |
| | | • 12 = MultiAxisController |
| | | • 13 = StackerCrane |
| | | • 14 = Power and Energy Solutions |
| | | • 15 = Communication |
| | | • 17 = SingleAxis |
| Software number | **01** | • 01 = MultiMotion Camming |
| Platform | **020** | • 020 = standard (UHX25A) |
| | | • 040 = advanced (UHX45A) |
| | | • 060 = progressive (UHX65A) |
| | | • 080 = power (UHX85A) |

# 3 Licensing

A license is required for using certain MOVI-C® software components. The following chapters provide detailed information on licensing and the license model.

## 3.1 License model

The license model for MOVI-C® software components distinguishes between performance licenses and single licenses. Refer to the subsequent chapters for information on the difference between these license types. For information on which type of license is required for which MOVI-C® software component, refer to the chapter "Overview of software licenses" (→ 📄 22) or "Software components" (→ 📄 25).

### 3.1.1 Performance licenses

Performance licenses for a software function have to be purchased only once per MOVI-C® CONTROLLER. With this license type, the function can be used for any number of instances. The price for performance licenses is tiered depending on the performance class of the MOVI-C® CONTROLLER in use.

If the function is a software function for axes, then the number of axes that can be used is limited by the recommended maximum number of axes of the respective MOVI-C® CONTROLLER.

**Recommended maximum number of axes:**

| MOVI-C® CONTROLLER | Recommended maximum number of axes |
|---|---|
| standard UHX25A | 2 interpolated – 6 auxiliary axes |
| advanced UHX45A | 8 interpolated – 8 auxiliary axes |
| progressive UHX65A | 16 interpolated – 16 auxiliary axes |
| power UHX85A | 32 interpolated – 32 auxiliary axes |

**Examples of performance licenses:**

MOVIRUN® flexible, MOVIKIT® MultiMotion Camming

The performance license for using cam axes or synchronous operation axes is purchased once per MOVI-C® CONTROLLER and allows for using the software component for as many axes as are possible with the MOVI-C® CONTROLLER in use.

### 3.1.2 Single licenses

Single licenses must be purchased individually for each instance that wants to use the respective software component. There is a fixed price for single licenses irrespective of the performance class of the MOVI-C® CONTROLLER in use.

**Examples of single licenses:**

MOVIKIT® Positioning, MOVIKIT® Robotics, MOVIKIT® MultiAxisController

If "MOVIKIT® Positioning" (→ 📄 52) is used for 3 axes, the single license MOVIKIT® Positioning (SMK1004-000) is needed 3 times. If 2 robots are implemented, the single license MOVIKIT® Robotics (SMK1101-000) is needed 2 times.

## 3.2 Purchasing software licenses

Licenses for MOVI-C® software components can be obtained via the conventional sales channel or via Online Support. Licenses can be obtained in the following ways:

**Together with the controller hardware**

If you purchase the software license together with the hardware component, the licenses will be activated directly on the memory card of the MOVI-C® CONTROLLER at the factory. You will receive a complete, operational system.

**Together with a storage medium**

If you purchase the software license together with a storage medium, the licenses will be activated directly on the memory card of the MOVI-C® CONTROLLER at the factory. You will receive a pre-installed memory card ready for use.

**Individually**

Licenses can be purchased at any time via Online Support or by calling the SEW Service Hotline. You will receive a license key and an activation key for the software license you have purchased. With these keys you can activate the software function on a hardware using the MOVISUITE® License Manager.

## 3.3 Checking a software license

You can check the type of licenses available on a memory card in several ways:

### 3.3.1 About the MOVISUITE® License Manager

Establish a connection with the MOVI-C® CONTROLLER. In MOVISUITE®, open the License Manager via context menu of the MOVI-C® CONTROLLER. The License Manager checks which licenses are available on the memory card and displays the result.
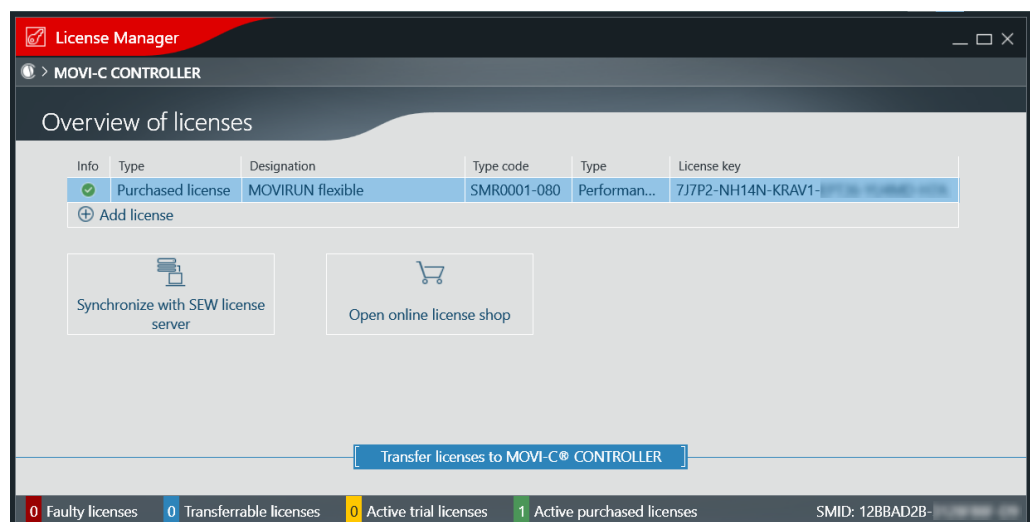


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### 3.3.2 Using the web application of Online Support

Navigate to Online Support on the SEW-EURODRIVE website. This is where you find the web application "Check and activate software licenses". Enter the SMID (SEW-EURODRIVE Memory ID) printed on your memory card in the edit box. A list opens with all licenses assigned to this memory card.



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### 3.3.3 Missing licenses

When starting the IEC program, MOVIKIT® software modules that require a license check whether the required license is available. If no license is present, the software module reports an error and a symbol is displayed in the "Info" column in the MOVISUITE® License Manager to indicate that the license is missing. This error cannot be acknowledged.



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## 3.4 Activating a software license

When purchasing a "single" (→ 🗎 14) software license for a software component, the buyer receives a license key.

Example of a license key: 77322-TR75W-TQ6WR-S9P8V-WKLVV-94A

This license key is not linked to a specific hardware component (of a memory card). The license key is linked to a hardware component by activating the license. After activating the license, the licensed software component can only be executed on the linked hardware component. The license on the memory card is only valid and available following a successful activation.

When activating a license, an activation key is generated from the license key and the memory card ID SMID (SEW-EURODRIVE memory ID), and is transferred to the memory card with a license file.

Example of an activation key: X6J84L4F

A license is activated using the MOVISUITE® License Manager. If there is an internet connection from the engineering PC, all you have to do is enter the license key. If there is no internet connection from the engineering PC, you will have to enter the license key and the associated activation key.

A connection with an SEW-EURODRIVE license server is required to generate the activation key. The license server generates the activation key and registers the license key and the SMID.

### 3.4.1 With internet connection

Do the following to activate the license:

✓ Connection between MOVISUITE® and MOVI-C® CONTROLLER.

✓ PC or notebook with internet connection is available.

✓ One or several licenses were purchased and you have received the associated license keys.

1. Establish a connection between your PC or notebook and the MOVI-C® CONTROLLER.

2. In MOVISUITE®, open the License Manager via context menu of the MOVI-C® CONTROLLER.

3. In the list in the License Manager, click the [Activate license] button for the license you wish to activate.
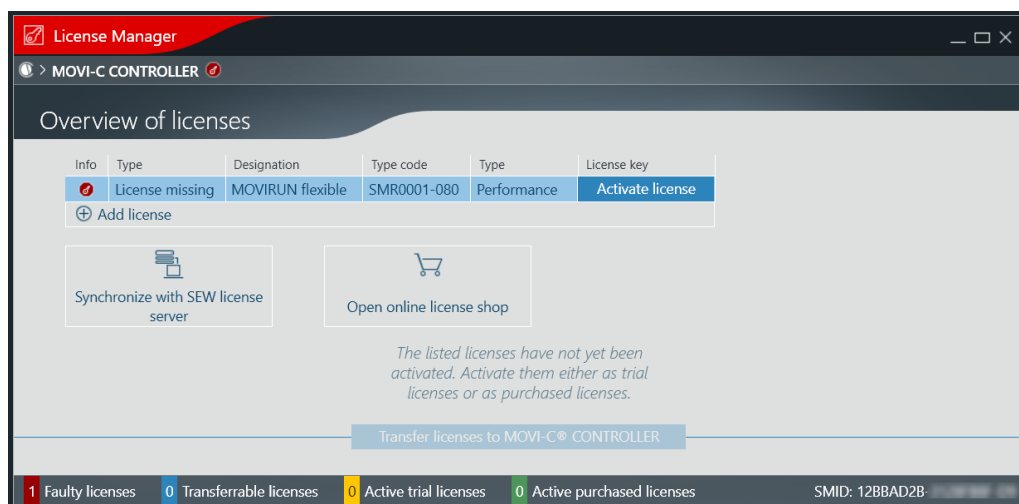


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⇨ The "Activate license" window is displayed.

4.  In the "Activate license" window, select the option "Activate license via Internet".

5.  Enter the respective license key. If you have purchased single licenses, you can also enter several license keys. The SMID of your memory card is read automatically and is displayed.

Activate license ✕

● Activate license via internet
○ Activate license by phone
○ Activate trial license

License key
*Enter license key*

[i] Activation and allocation of a license key to a memory card (SMID) cannot be undone.

Do you really want to activate this license?

Activate license — Cancel
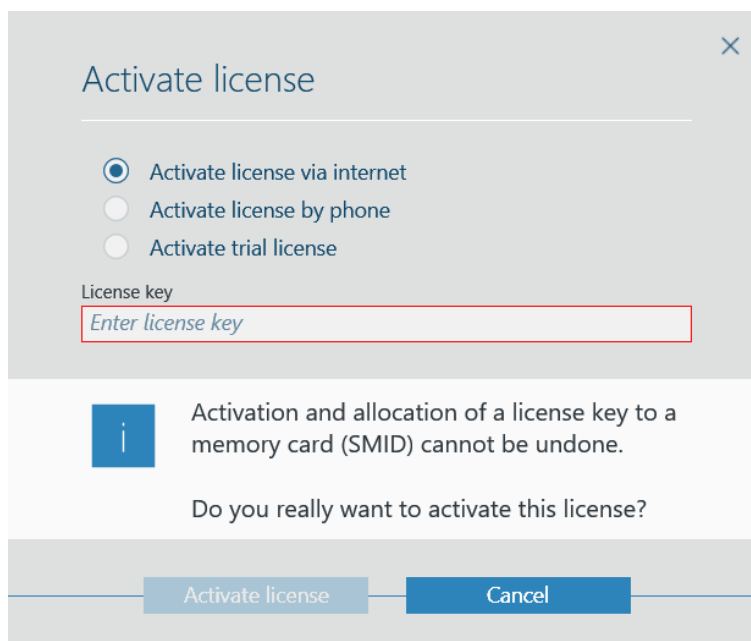
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6.  To perform the activation, click the [Activate license] button.

⇨ MOVISUITE® establishes a connection with the SEW license server and registers the license.

⇨ The license is now linked with the memory card. The entered license key is used up and cannot be used for any other memory card.

7.  To activate further licenses, repeat the previous steps.

8.  To complete activation and to transfer the licenses to the memory card, click the [Transfer licenses to MOVI-C® CONTROLLER] button.

9.  Restart the MOVI-C® CONTROLLER for the changes to take effect.

10. After having restarted the MOVI-C® CONTROLLER, open the License Manager again and check whether further licenses are displayed.

### 3.4.2 Without internet connection

Do the following to activate the license:

✓ Connection between MOVISUITE® and MOVI-C® CONTROLLER.

✓ One or several licenses were purchased and you have received the associated license keys and activation keys. For further information, refer to chapter "Requesting an activation key" (→ 🖺 19).

1. Establish a connection between your PC or notebook and the MOVI-C® CONTROLLER.

2. In MOVISUITE®, open the License Manager via context menu of the MOVI-C® CONTROLLER.

3. In the list in the License Manager, click the [Activate license] button for the license you wish to activate.

4. In the "Activate license" window, select the option "Activate license by phone".

5. Enter the respective license key and the associated activation key requested by phone. (The SMID of your memory card is read automatically and is displayed.)



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6. To perform the activation, click the [Activate license] button.

⇨ MOVISUITE® checks the data you have entered and issues a message.

7. To activate further licenses, repeat the previous steps.

8. To complete activation and to transfer the licenses to the memory card, click the [Transfer licenses to MOVI-C® CONTROLLER] button.

9. Restart the MOVI-C® CONTROLLER for the changes to take effect.

10. After having restarted the MOVI-C® CONTROLLER, open the License Manager again and check whether further licenses are displayed.

**Requesting an activation key**

*Via SEW hotline*

    ✓   You know the SMID of the memory card of your MOVI-C® CONTROLLER. You find the SMID printed on the memory card or in the License Manager in MOVISUITE®.

    ✓   You know which license you need or you know the license key of the license you have purchased. To view missing licenses, open the License Manager in MOVISUITE®.

1. Call the SEW hotline and request a license activation for MOVI-C® CONTROLLER.

    ⇨   The service employee on the phone will ask for your customer data, the SMID of your memory card, and which license you wish to purchase. If you have already purchased a license, you can quote the license key instead.

2. Provide the service employee with the necessary information.

    ⇨   If you do not yet have a license, the service employee will obtain the required license and generates the activation key from the license key and the SMID you have provided. If you have specified a license key, the service employee will generate the activation key from the specified SMID and this license key.

    ⇨   The service employee informs you about the activation key and, if you have purchased a new license, also about the license key. The entered license key is used up and cannot be used for any other memory card.

    ⇨   You can use the activation key together with the SMID for activating the license on your memory card.

*Via Online Support*

    ✓   You know the SMID of the memory card of your MOVI-C® CONTROLLER. You find the SMID printed on the memory card or in the License Manager in MOVISUITE®.

    ✓   You know the license key of the license you have purchased.

1. Open the SEW website and navigate to Online Support and select "Startup & maintenance".

2. Click the link to the web application "Check and activate software licenses".

3. Enter the SMID of the memory card where you want to activate the license and the license key of the purchased license in the respective fields.

4. Click the [Request] button.

    ⇨   You will obtain the activation key. The entered license key is used up and cannot be used for any other memory card.

    ⇨   You can use the activation key together with the matching license key for activating the license on your memory card.
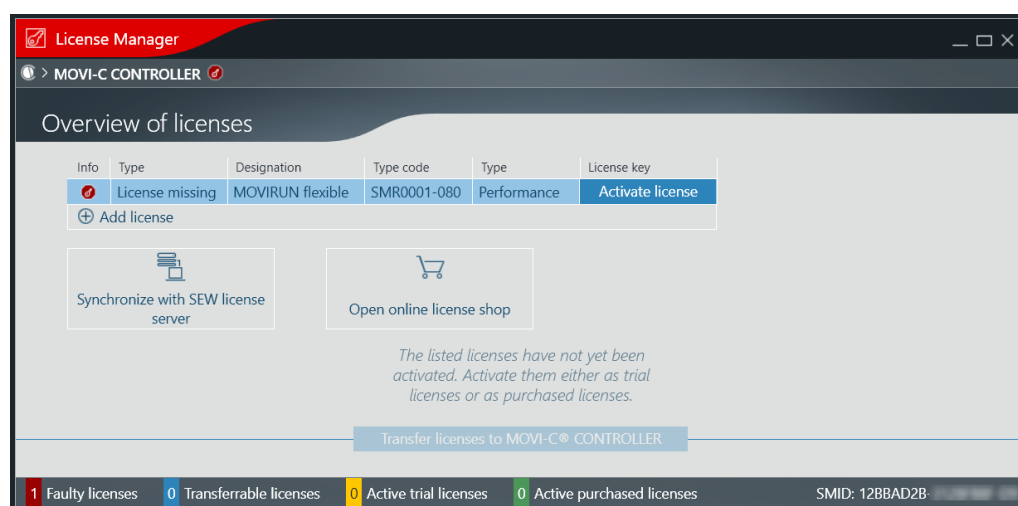
## 3.5 Trial licenses

SEW-EURODRIVE offers trial licenses to test the functions of MOVI-C® software components. The trial licenses are valid for 7 days and offer the entire scope of functions during this trial period. After expiration of the trial period, you will have to purchase a license to be able to continue to use the software component. Expiry of the trial license is logged and is displayed by a notification symbol in MOVISUITE® at the node of the MOVI-C® CONTROLLER.

**Activating the trial license**

When starting the MOVI-C® CONTROLLER, the system checks whether the licenses required for the MOVI-C® software components in use have been activated on the memory card. If a license is not available, MOVISUITE® is notified and you can activate a 7-day trial license.

Do the following to activate the trial license:

1. Open the License Manager via the context menu of the MOVI-C® CONTROLLER in the MOVISUITE® engineering software.

   ⇨ The License Manager provides an overview of licenses that are already active on the memory card of the MOVI-C® CONTROLLER and of licenses that are additionally required. Missing licenses are marked by a red icon.



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2. In the list in the License Manager, click the [Activate license] button for the trial license you wish to activate.

3. In the "Activate license" window, select the option "Activate trial license" and click the [Activate license] button.
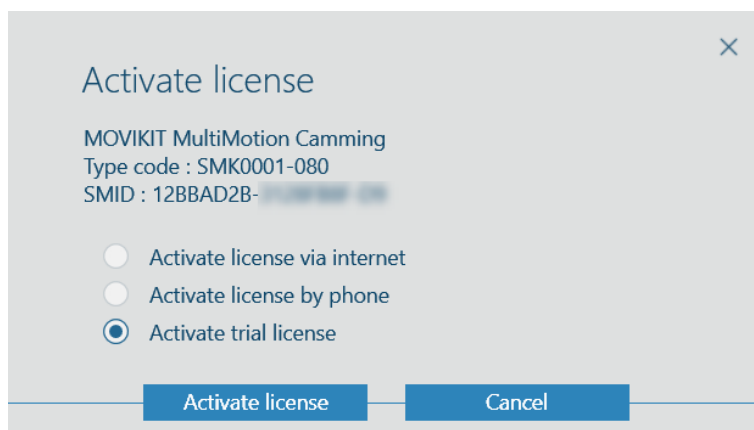


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⇨ MOVISUITE® establishes a connection with the SEW license server and registers the license.

4. To complete activation and to transfer the licenses to the memory card, click the [Transfer licenses to MOVI-C® CONTROLLER] button.



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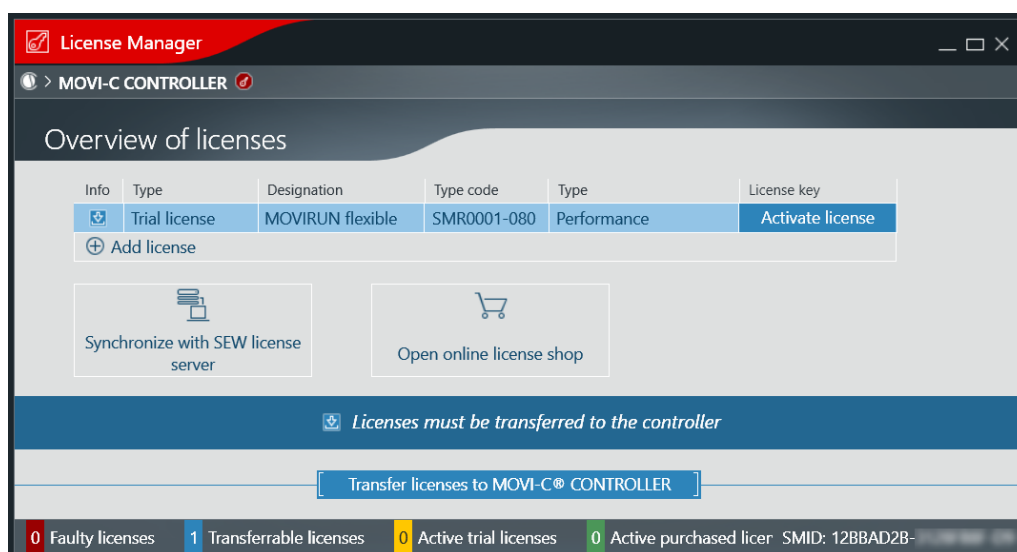5. Restart the MOVI-C® CONTROLLER for the changes to take effect.

⇨ The 7-day trial license is now active. The license is marked by a yellow icon in the overview. The field "Days left before trial license expires" shows the remaining trial period. The test period applies globally to all licenses and starts as soon as a trial license is activated. After expiry of the trial period, the respective software modules will issue a warning and MOVISUITE® reports that the trial period is over. It is now at the latest that you have to purchase and activate a license in order to continue to use the respective software functions. Expired trial licenses can be activated again for further trial.

## 3.6 Overview of software licenses

### 3.6.1 Single licenses

| Software license | Type code |
|---|---|
| MOVISUITE® standard | Basic version free of charge |
| MOVISUITE® CamEditor | Included in MOVISUITE® standard |
| MOVISUITE® RobotMonitor | Included in MOVISUITE® standard |
| MOVIKIT® Positioning Drive | SMK1002-000 |
| MOVIKIT® Velocity Drive | SMK1001-000 |
| MOVIKIT® RapidCreepPositioning Drive | SMK1007-000 |
| MOVIKIT® Motion add-on AntiSway | SMK0008-000 |
| MOVIKIT® MultiAxisController Torque | SMK1201-000 |
| MOVIKIT® MultiAxisController Skewing | SMK1202-000 |
| MOVIKIT® MultiAxisController TorqueSkewing | SMK1203-000 |
| MOVIKIT® MultiAxisController add-on FourAxes | SMK1204-000 |
| MOVIKIT® MultiAxisController add-on Cascading | SMK1205-000 |
| MOVIKIT® Robotics | SMK1101-000 |
| MOVIKIT® Robotics add-on MediumModels | SMK1102-000 |
| MOVIKIT® Robotics add-on Touchprobe | SMK1107-000 |
| MOVIKIT® Robotics add-on Circle (in preparation) | SMK1105-000 |
| MOVIKIT® Robotics add-on ConveyorTracking (in preparation) | SMK1110-000 |
| MOVIKIT® StackerCrane effiDRIVE® | SMK1301-000 |
| Visualization basic | SSE0001-000 |
| Visualization flexible | SSE0002-000 |
| Visualization multi | SSE0003-000 |

**SEW EURODRIVE**

### 3.6.2 Performance licenses

| Software license | Perf. class | Type code |
|---|---|---|
| MOVIRUN® flexible | 020 | SMR0001-020 |
| | 040 | SMR0001-040 |
| | 060 | SMR0001-060 |
| | 080 | SMR0001-080 |
| MOVIKIT® EncoderInterface | Included in MOVIRUN® flexible | |
| MOVIKIT® MultiMotion | Included in MOVIRUN® flexible | |
| MOVIKIT® MultiMotion Auxiliary Velocity | Included in MOVIRUN® flexible | |
| MOVIKIT® MultiMotion Auxiliary Positioning | Included in MOVIRUN® flexible | |
| MOVIKIT® MultiMotion Camming | 020 | SMK0001-020 |
| | 040 | SMK0001-040 |
| | 060 | SMK0001-060 |
| | 080 | SMK0001-080 |
| MOVIKIT® MultiMotion Camming add-on Interpolation | 020 | SMK0012-020 |
| | 040 | SMK0012-040 |
| | 060 | SMK0012-060 |
| | 080 | SMK0012-080 |
| MOVIKIT® MultiMotion Camming add-on AntiSlosh | 020 | SMK0013-020 |
| | 040 | SMK0013-040 |
| | 060 | SMK0013-060 |
| | 080 | SMK0013-080 |
| MOVIKIT® MultiMotion Gearing | 020 | SMK0011-020 |
| | 040 | SMK0011-040 |
| | 060 | SMK0011-060 |
| | 080 | SMK0011-080 |
| MOVIKIT® MultiMotion add-on PositionController | 020 | SMK0006-020 |
| | 040 | SMK0006-040 |
| | 060 | SMK0006-060 |
| | 080 | SMK0006-080 |
| MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation | 020 | SMK0007-020 |
| | 040 | SMK0007-040 |
| | 060 | SMK0007-060 |
| | 080 | SMK0007-080 |
| MOVIKIT® Gearing | 020 | SMK1709-020 |
| | 040 | SMK1709-040 |
| | 060 | SMK1709-060 |
| | 080 | SMK1709-080 |

| Software license | Perf. class | Type code |
|---|---|---|
| MOVIKIT® Velocity | Included in MOVIRUN® flexible | |
| MOVIKIT® Positioning | Included in MOVIRUN® flexible | |
| MOVIKIT® Power and Energy Solutions DirectMode | Included in MOVIRUN® flexible | |
| MOVIKIT® Power and Energy Solutions PowerMode | 040 | SMK1402-040 |
| | 060 | SMK1402-060 |
| | 080 | SMK1402-080 |
| MOVIKIT® Power and Energy Solutions EnergyMode | 040 | SMK1403-040 |
| | 060 | SMK1403-060 |
| | 080 | SMK1403-080 |
| MOVIKIT® OPC-UA | 060 | SMK1501-060 |

**SEW** EURODRIVE

# 4 Software components

## 4.1 MOVISUITE®

MOVISUITE® is the engineering platform and operating platform for all MOVI-C® hardware and software components.

### 4.1.1 MOVISUITE® standard

| Functional description |
|---|
| The engineering software MOVISUITE® standard allows for configuring, parameterizing, and starting up applications by means of an intuitive user interface. Overview of functions: <ul><li>Project management and project planning</li><li>Starting up hardware and software components</li><li>Setting parameters and programming MOVIKIT® software modules</li><li>Diagnosing hardware and software components</li><li>Centralized data management</li></ul> The software is available free of charge from the → Online Support. |

| Project planning notes | |
|---|---|
| **License type** | No license required |
| **Requirements** | • Windows 7 or later |
| **Type code** | - |

### 4.1.2 MOVISUITE® apps

MOVISUITE® apps expand the range of functions of the basic version MOVISUITE® standard by additional functions and features.

**MOVISUITE® CamEditor**

| Functional description | |
|---|---|
| The MOVISUITE® CamEditor is an intuitive tool for creating curve function descriptions for MOVIKIT® MultiMotion Camming. Integration in MOVISUITE® allows for taking into account configuration data, such as user units and limits, when creating curve function descriptions. Overview of functions:<br><br>• Creation of curve function descriptions according to VDI 2143<br>• Generation of curve function descriptions in user units<br>• Display of position, speed, acceleration, and jerk profiles<br>• Display of set axis limits<br>• Automated conversion into time-based values | |
| **Project planning notes** | |
| License type | Included in MOVISUITE® standard as convenience function. |
| Requirements | • Windows 7 or later<br>• MOVISUITE® standard |
| Type code | - |

**MOVISUITE® RobotMonitor**

| Functional description | |
|---|---|
| The MOVISUITE® RobotMonitor is used to control and parameterize MOVIKIT® Robotics and its add-ons. Overview of functions:<br><br>• Control and diagnostics of MOVIKIT® Robotics and its add-ons<br>• Robot control in manual mode and automatic mode<br>• Robot control in jog mode (by axis and Cartesian)<br>• Creation of the sequential and motion programs in SEW Robot Language (SRL) by means of an editor among others with teach-in function for positions<br>• 3D visualization of the configured robot<br><br>For more information, refer to the associated → manual.<br><br>The software is available free of charge from the → Online Support. | |
| **Project planning notes** | |
| License type | Included in MOVISUITE® standard as convenience function. |
| Requirements | • Windows 7 or later<br>• MOVISUITE® standard |
| Type code | - |

## 4.2    MOVIRUN®

MOVIRUN® is the software platform for MOVI-C® CONTROLLERs. The type of MOVIRUN® defines whether a MOVI-C® CONTROLLER can be programmed freely or whether it requires parameterization.

### 4.2.1    MOVIRUN® flexible

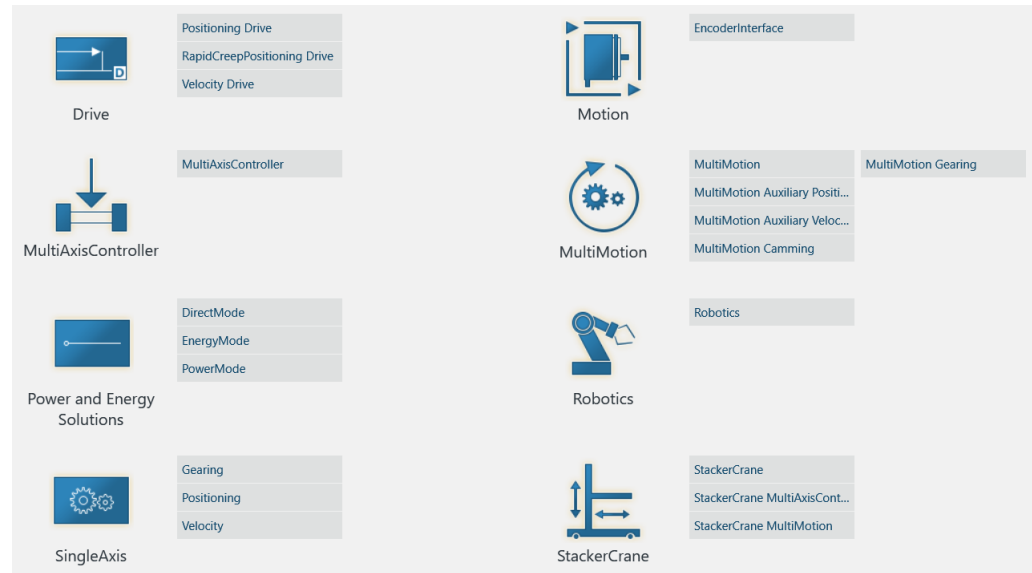| **Functional description** | |
|---|---|
| MOVIRUN® flexible is the open motion control and automation platform for MOVI-C® CONTROLLERs. This software platform makes the MOVI-C® CONTROLLER freely programmable by means of a modern programming system according to IEC 61131. MOVIRUN® flexible provides standard PLC functions as well as a high-performance realtime system. Overview of functions:<br><br>• Automation with MOVI-C® and third-party components<br>• EtherCAT® fieldbuses are supported<br>• A modern programming system according to IEC 61131 is supported<br>• MOVIKIT® software modules are used in the programming environment<br>• Graphical configuration and diagnostics of MOVIKIT® software modules<br>• Provision of backup and restore functions in case of device replacement | |
| **Project planning notes** | |
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) |
| **Type code** | • SMR0001-020 (for UHX25A)<br>• SMR0001-040 (for UHX45A)<br>• SMR0001-060 (for UHX65A)<br>• SMR0001-080 (for UHX85A) |

## 4.3 MOVIKIT®

MOVIKIT® software modules are preconfigured software modules for implementing simple drive functions, such as speed control and positioning, up to complex motion control functions, such as camming and robot control. The software modules are operated on the real-time operating system of the MOVI-C® CONTROLLER (or on the MOVIDRIVE® application inverter when using MOVIKIT® software modules of the category "Drive"). The software modules are divided into the following categories:

| | | | |
|---|---|---|---|
| **Drive** | Positioning Drive<br>RapidCreepPositioning Drive<br>Velocity Drive | **Motion** | EncoderInterface |
| **MultiAxisController** | MultiAxisController | **MultiMotion** | MultiMotion · MultiMotion Gearing<br>MultiMotion Auxiliary Positi...<br>MultiMotion Auxiliary Veloc...<br>MultiMotion Camming |
| **Power and Energy Solutions** | DirectMode<br>EnergyMode<br>PowerMode | **Robotics** | Robotics |
| **SingleAxis** | Gearing<br>Positioning<br>Velocity | **StackerCrane** | StackerCrane<br>StackerCrane MultiAxisCont...<br>StackerCrane MultiMotion |

### Category "Drive"

The category "Drive" includes MOVIKIT® software modules that are operated directly on the MOVIDRIVE® application inverter.

### Category "Motion"

The category "Motion" includes MOVIKIT® software modules that provide specific motion control functions. This category also includes add-ons that can also be used for the software modules of other categories.

### Category "MultiAxisController"

The category "MultiAxisController" includes MOVIKIT® software modules for centrally controlling any number of mechanically coupled drives.

### Category "MultiMotion"

The category "MultiMotion" includes MOVIKIT® software modules for implementing universal motion control functions for interpolating axes. Motion profiles can be activated, and superimposed for example, by means of a defined IEC interface.

### Category "Robotics"

The category "Robotics" includes MOVIKIT® software modules for controlling robots.

### Category "SingleAxis"

The category "SingleAxis" includes all MOVIKIT® software modules with parameterizable functions and with a standardized process data interface. Unlike the category "MultiMotion", no programming knowledge is required for startup and diagnostics.

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**Category "StackerCrane"**

The category "StackerCrane" includes MOVIKIT® software modules for implementing storage/retrieval systems.

**Category "Power and Energy Solutions"**

The category "Power and Energy Solutions" includes energy supply solutions for inverters of the MOVIDRIVE® modular series.

**Category "Communication"**

The category "Communication" includes MOVIKIT® software modules that provide various communication services.

### 4.3.1    Category "Drive"

The category "Drive" includes MOVIKIT® software modules that are operated directly on the MOVIDRIVE® application inverter.

**MOVIKIT® Positioning Drive**

| **Functional description** |
|---|
| MOVIKIT® Positioning Drive allows for implementing positioning applications with a predefined fieldbus interface. The software module mainly uses the basic functions of the application inverter in use by activating the respective function blocks depending on the application. This means the scope of functions depends on the application inverter (e.g. with/without encoder feedback). Overview of functions:<br><br>• Startup using a graphical user interface<br>• Own parameter tree with all parameters required for operation<br>• Provision of the operating modes jog, speed control, positioning (relative/absolute), and referencing<br>• Diagnostic monitor for monitoring and controlling the axis<br>• Standardized process data interface<br><br>For more information, refer to the associated → manual. |

| **Project planning notes** | |
|---|---|
| **License type** | Single license – license for an inverter |
| | Required application level: Application level 1 |
| **Requirements** | The software module is compatible with the following hardware:<br><br>• MOVIDRIVE® technology<br>• MOVIGEAR® performance<br>• MOVIMOT® performance<br>• MOVIMOT® advanced<br>• MOVIMOT® flexible |
| **Type code** | • SMK1002-000 |

**MOVIKIT® Velocity Drive**

| Functional description |
|---|
| MOVIKIT® Velocity Drive allows for implementing applications with speed control and a predefined fieldbus interface. The software module mainly uses the basic functions of the application inverter in use by activating the respective function blocks (such as FCB 09 Position control) depending on the application. This means the scope of functions depends on the application inverter (e.g. with/without encoder feedback). Overview of functions: <br><br> • Startup using a graphical user interface <br><br> • Own parameter tree with all parameters required for operation <br><br> • Provision of the speed control operating mode <br><br> • Diagnostic monitor for monitoring and controlling the axis <br><br> • Standardized process data interface <br><br> For more information, refer to the associated → manual. |

| Project planning notes | |
|---|---|
| **License type** | Single license – license for an inverter <br><br> Required application level: Application level 0 |
| **Requirements** | The software module is compatible with the following hardware: <br><br> • MOVIDRIVE® technology <br><br> • MOVIGEAR® performance <br><br> • MOVIMOT® performance <br><br> • MOVIMOT® advanced <br><br> • MOVIMOT® flexible |
| **Type code** | • SMK1001-000 |

4

## MOVIKIT® RapidCreepPositioning Drive

| Functional description | |
|---|---|
| MOVIKIT® RapidCreepPositioning Drive is a software module for implementing conventional "rapid/creep speed positioning" without motor encoder. Positioning is performed by means of initiators used for changing from rapid to creep speed or vice versa, or for activating stop deceleration. Positioning applications are also possible and additional optional sensors can be used. No programming knowledge is required for startup and diagnostics as the software module is integrated in the MOVISUITE® engineering software. Overview of functions:<br><br>• Startup using a graphical user interface<br><br>• Own parameter tree with all parameters required for operation<br><br>• Provision of the operating mode jog, referencing, various operating modes for infeed, outfeed, and a reverse mode<br><br>• Diagnostic monitor for monitoring and controlling the axis<br><br>• Standardized process data interface<br><br>For more information, refer to the associated → manual. | |

| Project planning notes | |
|---|---|
| **License type** | Single license – license for an inverter<br><br>Required application level: Application level 1 |
| **Requirements** | The software module is compatible with the following hardware:<br><br>• MOVIDRIVE® technology<br><br>• MOVIGEAR® performance<br><br>• MOVIMOT® performance<br><br>• MOVIMOT® advanced<br><br>• MOVIMOT® flexible |
| **Type code** | • SMK1007-000 |

### 4.3.2 Category "Motion"

The category "Motion" includes MOVIKIT® software modules that provide specific motion control functions. This category also includes add-ons that can also be used for the software modules of other categories.

**MOVIKIT® EncoderInterface**

| Functional description |
|---|
| The MOVIKIT® EncoderInterface is used to convert data from an external source (e.g. an external encoder directly connected to EtherCAT® or any variable) from system units into user units. Both a modulo and a numerator/denominator processing of the synchronized data can be performed. In addition, the scope of functions includes the possibility of referencing and provides fail-safe offset and remainder management. Overview of functions: <br><br> • Processing of modulo overflow in the data source <br><br> • Conversion of external data to LREAL with appropriate resolution (e.g. encoder connected to the inverter and user units configured on the inverter) <br><br> • Scaling of output variables (e.g. encoder connected to EtherCAT® and scaling of user units on the MOVI-C® CONTROLLER) <br><br> • Calculation of the derivatives to determine speed and acceleration <br><br> • Activation of filters for smoothing the data <br><br> • Consistent fail-safe storage of division remainders <br><br> • Consistent fail-safe storage of variables <br><br> • Dead time compensation <br><br> For more information, refer to the associated → manual. |

| Project planning notes | |
|---|---|
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) <br> • MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 📄 27) type code |

**SEW**
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**MOVIKIT® Motion add-on AntiSway**

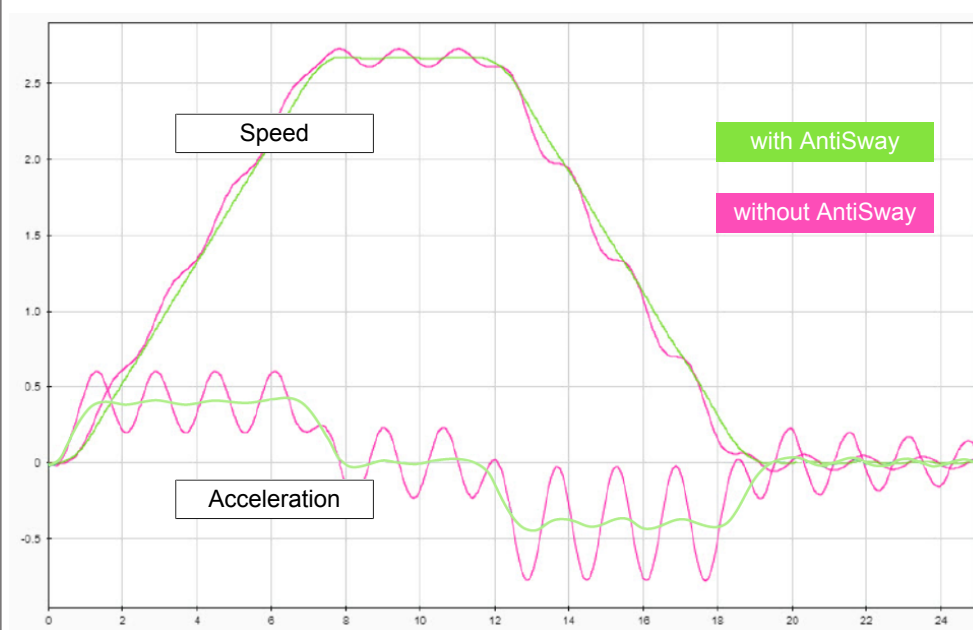| Functional description |
|---|

The MOVIKIT® Motion add-on AntiSway extends the scope of functions of MOVIKIT® MultiMotion, MOVIKIT® MultiMotion Camming, and MOVIKIT® MultiAxisController by a function for suppressing vibrations in the drive train. Using this function allows for suppressing vibrations with a dominant resonant frequency. Even variable resonant frequencies can be suppressed in certain operating modes of the MOVIKIT® Motion add-on AntiSway.

The MOVIKIT® Motion add-on AntiSway supports the following types of application:

- TowerSway
- BellySway (in preparation)
- SpringSway (in preparation)
- PendulumSway (in preparation)
- FluidSway (in preparation)

| Illustration |
|---|

Speed and acceleration profile during positioning:



| Project planning notes | |
|---|---|
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiMotion, MultiMotion Camming or MOVIKIT® MultiAxisController |
| **Type code** | • SMK0008-000 |

### 4.3.3 Category "MultiAxisController"

The category "MultiAxisController" includes MOVIKIT® software modules for centrally controlling any number of mechanically coupled drives.

**MOVIKIT® MultiAxisController**

| **Functional description** |
|---|
| MOVIKIT® MultiAxisController allows for implementing mechanically coupled drives (loose or rigid coupling) by means of a software module. Users can choose between correction of a skew (Skewing) or compensation of the torque (Torque) of two drives. Licenses are available for using the various operating modes. |
| The software module replaces conventional master-slave operation and offers an expanded scope of functions compared to position-synchronous master/slave operation. The following functions are available both in the torque mode "Torque priority" (→ 🖺 35) and the skewing mode "Skew priority" (→ 🖺 36): |

- Central control of referencing, limit switch evaluation, and error handling of an axis group
- Central position control (slip compensation by means of external encoder is also possible)
- A virtual master is used in relative/absolute positioning modes, speed control, and tracking (MOVIKIT® MultiMotion)
- Provision of the camming operating mode in which the axis group follows a master signal (in preparation)
- Combined encoder evaluation. See chapter "MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation" (→ 🖺 44)
- Central position control and conventional encoder evaluation. See chapter "MOVIKIT® MultiMotion add-on PositionController" (→ 🖺 43)

For more information, refer to the associated → manual.

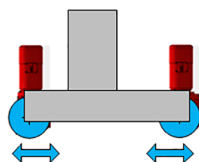| **Project planning notes** | |
|---|---|
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible |
| **Type code** | • SMK1201-000 (torque mode)<br>• SMK1202-000 (skewing mode)<br>• SMK1203-000 (torque and skewing modes) |

**MOVIKIT® MultiAxisController Torque**

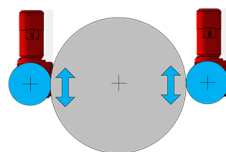| Functional description |
|---|
| MOVIKIT® MultiAxisController Torque implements the compensation of torque between mechanically coupled drives ("Torque priority" operating mode). Overview of functions: |

- Synchronism with torque distribution
- Torque distribution
- Load distribution
- Rigid coupling of the drives (formerly torque/slave)
- Load balancing (formerly master/slave)
- Speed synchronism
- Torque follower
- Torque coupling
- Load distribution between drives can be configured online
- Tension between drives can be configured online
- Electronic differential
- Parameterizable differential lock
- ASR (replaces the generation B ASR software)
- Deactivation of any axis group member for maintenance purposes

For more information, refer to the associated → manual.

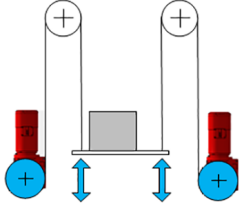| Illustration |
|---|

| traction-optimized carriages | indexing table | gripper, centering unit |
|---|---|---|

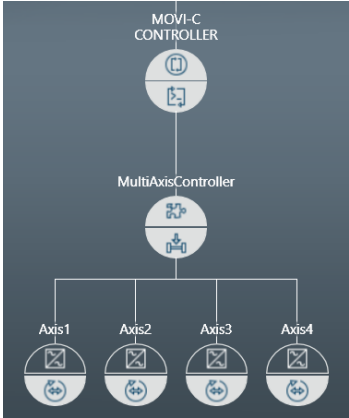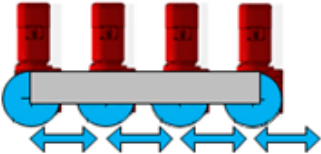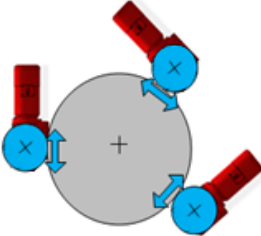| Project planning notes | |
|---|---|
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible |
| **Type code** | • SMK1201-000 |
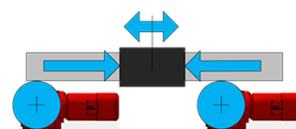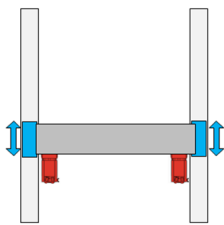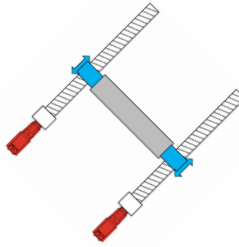
**MOVIKIT® MultiAxisController Skewing**

| **Functional description** |
|---|
| MOVIKIT® MultiAxisController Skewing implements the correction of a skew between mechanically coupled drives ("Skew priority" operating mode).

Overview of functions:

• Phase-synchronous operation
• Adjustment function can be used continuously
• Overload guard: Prevents asynchronicity in case of a failure

Solution for the following problems:

• Loosely coupled drives
• Double spindle drives that tilt or jam quickly when in a different position

Replacement for the following features of generation B devices:

• Master/slave synchronism (1:1 gear ratio)
• FCB 22 Multi-drive
• SyncCrane – functional replacement
• DriveSync – functional replacement for a gear ratio of 1:1

For more information, refer to the associated → manual. |

| **Illustration** |
|---|



| Indoor crane Gantry | Parallel feed | Column hoist, SRS hoist (in preparation) |

| **Project planning notes** | |
|---|---|
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible |
| **Type code** | • SMK1202-000 |

**MOVIKIT® MultiAxisController add-on FourAxes**

| Functional description |
|---|
| MOVIKIT® MultiAxisController add-on FourAxes extends the scope of functions of MOVIKIT® MultiAxisController by the option of controlling up to 4 drives.

For more information, refer to the associated → manual. |
| **Illustration** |
| 

Failsafe redundant drive systems

Indexing table |

| Project planning notes | |
|---|---|
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiAxisController |
| **Type code** | • SMK1204-000 |

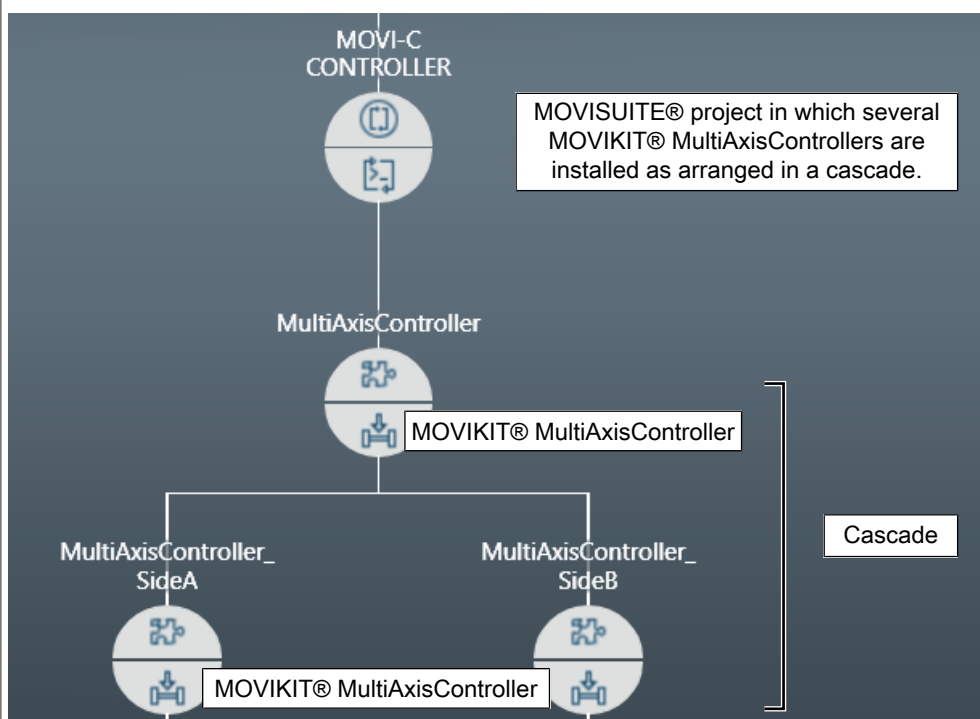### MOVIKIT® MultiAxisController add-on Cascading

| Functional description |
| --- |
| MOVIKIT® MultiAxisController add-on Cascading extends the scope of functions of MOVIKIT® MultiAxisController by the option of operating several axis groups in a cascade. Cascading is required, for example, if each side of a gantry crane is equipped with 2 drives. Each side of the gantry crane is to be operated in the "torque priority" (→ 🖹 35) mode, and superimposed both sides in the "skew priority" (→ 🖹 36) mode. |
| For more information, refer to the associated → manual. |

| Illustration |
| --- |



| Project planning notes | |
| --- | --- |
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive (UHX65A) or MOVI-C® CONTROLLER power (UHX85A)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiAxisController |
| **Type code** | • SMK1205-000 |

**4**

### 4.3.4 Category "MultiMotion"

The category "MultiMotion" includes MOVIKIT® software modules for implementing universal motion control functions for interpolating axes. Motion profiles can be activated, and superimposed for example, by means of a defined IEC interface.

**MOVIKIT® MultiMotion**

| Functional description |
|---|
| MOVIKIT® MultiMotion provides universal motion functions for interpolating axes. Various time or master based motion profiles can be activated conveniently by means of a defined IEC interface. Overlay of motion profiles is also possible. Overview of functions: <br><br>• Configuration via graphical user interface in the MOVISUITE® engineering tool or via the user program. <br>• Provision of motion functions for interpolating axes <br>  – Time-based motion profiles: <br>    Speed control, relative and absolute positioning, jog mode <br>  – Master-based motion profiles: Tracking <br>• Overlay of motion profiles <br>• Axis-based and profile-based (on the fly) referencing <br>• Provision of a touchprobe function <br>• Configuration of virtual axes <br><br>For more information, refer to the associated → manual. |

| Project planning notes | |
|---|---|
| License type | Included in the license for MOVIRUN® flexible |
| Requirements | • MOVI-C® CONTROLLER (all power classes) <br>• MOVIRUN® flexible |
| Type code | See "MOVIRUN® flexible" (→ 🖺 27) type code |

**MOVIKIT® MultiMotion Auxiliary Velocity**

| Functional description |
|---|
| MOVIKIT® MultiMotion Auxiliary Velocity allows for configuring speed and torque control for non-interpolating axes. The software module is particularly suited for controlling auxiliary axes in simple applications (e.g. conveyor belts). Overview of functions:<br><br>• Speed setpoint<br>• Torque specification<br><br>For more information, refer to the associated → manual. |

| Project planning notes | |
|---|---|
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 🗎 27) type code |

**MOVIKIT® MultiMotion Auxiliary Positioning**

| Functional description |
|---|
| MOVIKIT® MultiMotion Auxiliary Positioning allows for configuring positioning as well as speed and torque control for non-interpolating axes. The software module is particularly suited for controlling auxiliary axes in simple applications (e.g. variable-speed drives). Overview of functions:<br><br>• Speed setpoint<br>• Torque specification<br>• Positioning<br>• Referencing<br><br>For more information, refer to the associated → manual. |

| Project planning notes | |
|---|---|
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 🗎 27) type code |

**4**

### MOVIKIT® MultiMotion Camming

| Functional description |
|---|
| MOVIKIT® MultiMotion Camming is based on MOVIKIT® MultiMotion and extends its scope of functions by an electronic cam as master-based motion profile. Overview of functions: |

- Configuration via graphical user interface in the MOVISUITE® engineering tool or via the user program.
- Provision of motion functions for interpolating axes
  - Time-based motion profiles:

    Speed control, relative and absolute positioning, jog mode
  - Master-based motion profiles: Tracking, synchronous operation, electronic cam
- Overlay of motion profiles
- Axis-based and profile-based (on the fly) referencing
- Provision of a touchprobe function
- Configuration of virtual axes
- Online configuration of curve descriptions
- Processing of curve function descriptions created with the MOVISUITE® CamEditor. See "MOVISUITE® CamEditor" (→ 🖺 26).
- Automatic synchronizing/desynchronizing mechanisms
- Phase and amplitude correction on the fly
- Curve changeover on the fly
- Provision of an adjust function
- Configuration of user-specific profiles

For more information, refer to the associated → manual.

| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible |
| **Type code** | • SMK0001-020 (for UHX25A)<br>• SMK0001-040 (for UHX45A)<br>• SMK0001-060 (for UHX65A)<br>• SMK0001-080 (for UHX85A) |

**MOVIKIT® MultiMotion Gearing**

| Functional description |
|---|
| MOVIKIT® MultiMotion Gearing is based on MOVIKIT® MultiMotion and extends its scope of functions by position-dependent synchronism between two or more axes. Overview of functions:<br><br>• Configuration via graphical user interface in the MOVISUITE® engineering tool or via the user program.<br>• Provision of motion functions for interpolating axes<br>  – Time-based motion profiles:<br>    Speed control, relative and absolute positioning, jog mode<br>  – Master-based motion profiles: Tracking, synchronous operation<br>• Overlaying motion profiles<br>• Axis-based and profile-based (on the fly) referencing<br>• Provision of a touchprobe function<br>• Configuration of virtual axes<br>• Position and time dependent synchronization/desynchronization mechanisms and offset processing<br>• Provision of an adjust function |

| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiMotion |
| **Type code** | • SMK0011-020 (for UHX25A)<br>• SMK0011-040 (for UHX45A)<br>• SMK0011-060 (for UHX65A)<br>• SMK0011-080 (for UHX85A) |

4

## MOVIKIT® MultiMotion add-on PositionController

| Functional description |
|---|
| MOVIKIT® MultiMotion add-on PositionController extends the scope of functions of a MOVIKIT® software module (e. g. MOVIKIT®) by central position control and conventional encoder evaluation. When using the MOVIKIT® MultiMotion add-on PositionController in combination with the MOVIKIT® MultiMotion add-on "CombinedEncoderEvaluation" (→ 📄 44), then combined encoder evaluation can be used as the data source (see illustration). |

| Illustration |
|---|
|  |

| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiMotion, MultiMotion Camming or MOVIKIT® MultiMotion Gearing |
| **Type code** | • SMK0006-020 (for UHX25A)<br>• SMK0006-040 (for UHX45A)<br>• SMK0006-060 (for UHX65A)<br>• SMK0006-080 (for UHX85A) |

**MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation**

| Functional description |
|---|
| The MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation extends the scope of functions of a MOVIKIT® software module (e. g. MultiMotion) by a combined encoder evaluation. This combined encoder evaluation allows for combining a high-resolution motor encoder and a low-resolution encoder and external encoder subject to dead time. The low-resolution external encoder reliably ensures the reference to the machine even in the case of non-positive connection between motor and machine. The MOVIKIT® MultiMotion add-on CombinedEncoderEvaluation generates a machine-related, high-resolution encoder signal that can be used dynamically. |

| Illustration |
|---|
| Encoder 1 — High-resolution and dynamic motor encoder → Combined encoder evaluation ← Encoder 2 — Low-resolution and non-dynamic distance encoder → Encoders 1&2 — High-resolution and dynamic encoder signal for application control |

| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiMotion, MultiMotion Camming or MOVIKIT® MultiMotion Gearing |
| **Type code** | • SMK0007-020 (for UHX25A)<br>• SMK0007-040 (for UHX45A)<br>• SMK0007-060 (for UHX65A)<br>• SMK0007-080 (for UHX85A) |

**MOVIKIT® MultiMotion Camming add-on AntiSlosh**

| Functional description |
|---|
| The MOVIKIT® MultiMotion Camming add-on AntiSlosh extends the scope of functions of MOVIKIT® MultiMotion Camming by a function for generating travel profiles to reduce oscillations in the cyclical movement of liquids. Configuration can be performed via graphical user interface of the MOVISUITE® engineering tool or via the user program. |

| Illustration |
|---|

without AntiSlosh

with AntiSlosh

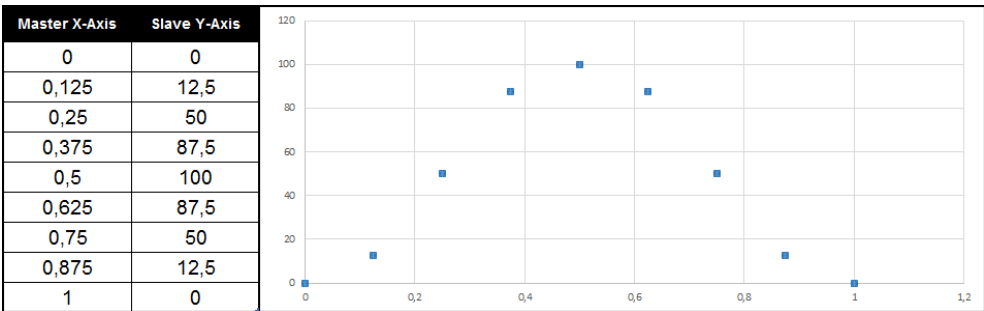| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® MultiMotion Camming |
| **Type code** | • SMK0013-020 (for UHX25A)<br>• SMK0013-040 (for UHX45A)<br>• SMK0013-060 (for UHX65A)<br>• SMK0013-080 (for UHX85A) |

**MOVIKIT® MultiMotion Camming add-on Interpolation**

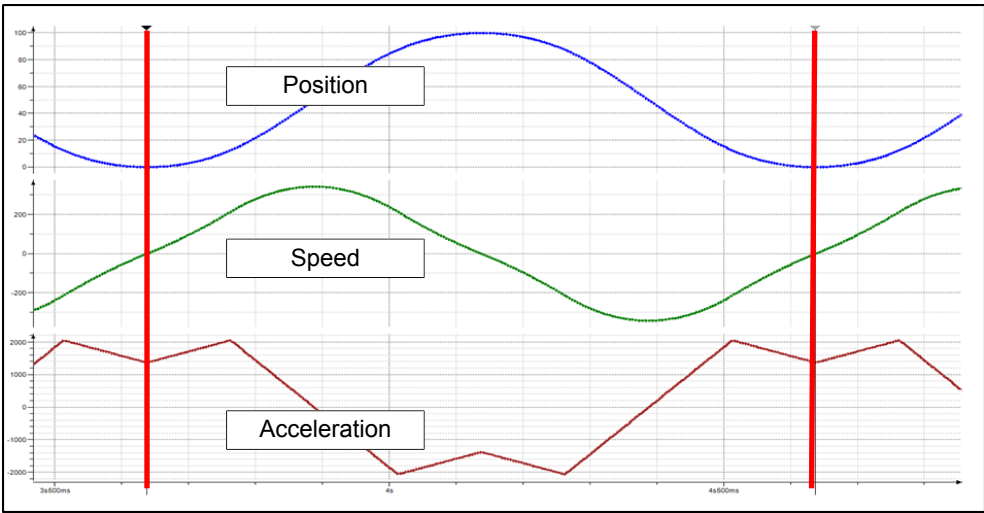| Functional description |
|---|
| The MOVIKIT® MultiMotion Camming add-on Interpolation extends the scope of functions of MOVIKIT® MultiMotion Camming by a function for generating travel profiles based on the interpolation of curve point tables. With linear or cubic interpolation, up to 1024 curve points can be interpolated, and with spline interpolation, up to 64 curve points can be interpolated. Curve point tables can be stored either as ASCII files on the memory card of the MOVI-C® CONTROLLER or can be generated directly from the user program. |

| Illustration |
|---|

Curve point table and representation of curve points in a diagram:

| Master X-Axis | Slave Y-Axis |
|---|---|
| 0 | 0 |
| 0,125 | 12,5 |
| 0,25 | 50 |
| 0,375 | 87,5 |
| 0,5 | 100 |
| 0,625 | 87,5 |
| 0,75 | 50 |
| 0,875 | 12,5 |
| 1 | 0 |



Example curve profiles with cubic interpolation of these curve points:



| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) <br> • MOVIRUN® flexible <br> • MOVIKIT® MultiMotion Camming |
| **Type code** | • SMK0012-020 (for UHX25A) <br> • SMK0012-040 (for UHX45A) <br> • SMK0012-060 (for UHX65A) <br> • SMK0012-080 (for UHX85A) |

### 4.3.5 Category "Robotics"

The category "Robotics" includes MOVIKIT® software modules for controlling robots.

**MOVIKIT® Robotics**

| Functional description |
|---|
| MOVIKIT® Robotics is the basic software module for controlling a robot and makes available a wide range of models for configuring robots (e.g. for specifying dimensions). The focus of MOVIKIT® Robotics is on handling applications, such as palletizing or transferring goods. Processing tasks, such as plotting, applying glue, or decorating are also possible. Overview of functions: |

- Simple operation via MOVISUITE® "RobotMonitor" (→ 🗎 26) (e.g. through 3D simulation), IEC program, or process data interface.
- Predefined kinematic models with 2 joint axes (e.g. gantry robot, delta robot, roller gantries, SCARA, mixed designs)
- Storage of 20 programs with several 100 motion commands per program
- Manual mode (jog, program), automatic mode (program), and jog mode (joint axes/Cartesian)
- Control in step mode (set, movement)
- Override function
- Tool transformation
- Linear interpolation with jerk-limited blending
- Use of explicit coordinates or variable poses
- Use of BOOLEAN, REAL or POSE variables
- Control structures (IF, WHILE)
- Call functions (for the synchronized execution of IEC code)
- Calling of subprograms
- Path events position based, time based, or combined
- Can be combined with MOVIKIT® MultiAxisController and its add-ons (e.g. for applications in which several drives are driving a joint axis)

For more information, refer to the associated → manual.
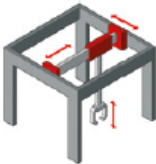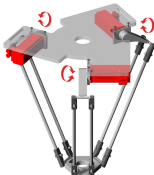
| Illustration |
|---|
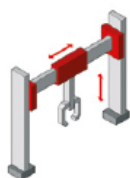


Gantry robot          Delta robot

| Project planning notes | |
|---|---|
| License type | Single license – license for a robot |
| Requirements | • MOVI-C® CONTROLLER (all power classes) |
| | • MOVIRUN® flexible |
| Type designation | • SMK1101-000 |

**MOVIKIT® Robotics add-on MediumModels**

| Functional description | |
|---|---|
| MOVIKIT® Robotics add-on MediumModels extends the scope of functions of MOVIKIT® Robotics by the option of configuring kinematic models with 3 or 4 joint axes. This comprises kinematic models of the type gantry robot, delta robot, tripods, SCARA, and mixed designs. The scope of functions includes the matching 3D visualizations of the kinematic models.

For more information, refer to the associated → manual. | |

**Illustration**



| x-y-z Portal | Tripod | SCARA |

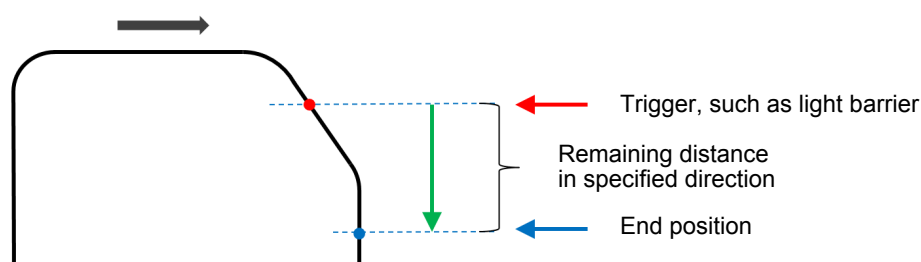| Project planning notes | |
|---|---|
| License type | Single license – license for a robot |
| Requirements | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® Robotics |
| Type code | • SMK1102-000 |

**MOVIKIT® Robotics add-on Touchprobe**

| Functional description |
|---|
| The MOVIKIT® Robotics add-on Touchprobe extends the range of functions of MOVIKIT® Robotics by the option of measuring the current Cartesian position or positioning the remaining path when a sensor is triggered or a BOOLEAN variable changes its state. Application cases for the touchprobe function are, for example, palletizing or depalletizing with variable or unknown height of the parts or the sensor-based execution of actions. Overview of functions: |

- Touchprobe functions: Measuring and sensor-based positioning
- Registration and deregistration of the touchprobe function at any point along the path
- Multiple registrations in one robot program
- Parameterization of the event source, the edge, the repetition of events (e.g. several measurements) and the measurement direction
- Extensive diagnostics via registration, triggering of the trigger and touchprobe position in the RobotMonitor and the 3D simulation

For more information, refer to the associated → manual.

| Illustration |
|---|



Trigger, such as light barrier

Remaining distance
in specified direction

End position

| Project planning notes | |
|---|---|
| License type | Single license – license for a robot |
| Requirements | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® Robotics |
| Type code | • SMK1107-000 |

**MOVIKIT® Robotics add-on Circle (in preparation)**

| Functional description |
|---|
| The MOVIKIT® Robotics add-on Circle extends the range of functions of MOVIKIT® Robotics by the option of circular interpolation. The circle segment can be parameterized in different ways:<br>• Circle center and angle<br>• Circle center and end point of the circle segment<br>• Intermediate point on the circle segment and end point of the circle segment<br>• Radius and angle<br>• Radius and end point of the circle segment |

| Project planning notes | |
|---|---|
| License type | Single license – license for a robot |
| Requirements | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® Robotics |
| Type code | • SMK1105-000 |

**MOVIKIT® Robotics add-on ConveyorTracking (in preparation)**

| Functional description |
|---|
| The MOVIKIT® Robotics add-on ConveyorTracking extends the range of functions of MOVIKIT® Robotics by the option of interpolation in moving coordinate systems. Applications are, for example, the removal of parts from a conveyor belt and depositing them in a static environment, or the direct transfer of goods between several conveyor belts. |

| Project planning notes | |
|---|---|
| License type | Single license – license for a robot |
| Requirements | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® Robotics |
| Type code | • SMK1110-000 |

**4**

### 4.3.6 Category "SingleAxis"

The category "SingleAxis" includes all MOVIKIT® software modules with parameterizable functions and with a standardized process data interface. Unlike the category "MultiMotion", no programming knowledge is required for startup and diagnostics.

**MOVIKIT® Gearing**
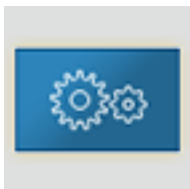
| Functional description |
|---|
| MOVIKIT® Gearing allows for implementing synchronous operation applications with a predefined fieldbus interface. In addition to the "gearing for synchronous applications" mode, the software module offers all the known basic operating modes known from MOVIKIT® "Positioning" (→ 📄 52) (jog mode, speed control, positioning, referencing). With MOVIKIT® Gearing, the inverter is operated interpolated in all operating modes. Overview of functions: <br><br> • Startup via graphical user interface of the MOVISUITE® engineering tool <br><br> • Own parameter tree with all parameters required for operation <br><br> • Provision of the operating modes jog, speed control, positioning (relative/absolute), referencing, and synchronous operation <br><br> • Position and time dependent synchronization/desynchronization mechanisms and offset processing <br><br> • Provision of an adjust function <br><br> • Diagnostic monitor for monitoring and controlling the axis <br><br> • Standardized process data interface |

| Project planning notes | |
|---|---|
| **License type** | Performance license – license for a MOVI-C® CONTROLLER |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) <br> • MOVIRUN® flexible |
| **Type code** | • SMK1709-020 (for UHX25A) <br> • SMK1709-040 (for UHX45A) <br> • SMK1709-060 (for UHX65A) <br> • SMK1709-080 (for UHX85A) |

**MOVIKIT® Positioning**

| Functional description | |
|---|---|
| MOVIKIT® Positioning allows for implementing positioning applications with a pre-defined fieldbus interface. The software module mainly uses the basic functions of the application inverter in use by activating the respective function blocks (such as FCB 09 Position control) depending on the application. This means the scope of functions that can be used depends on the application inverter in use (for example encoder feedback available). Overview of functions: <br><br>• Startup using a graphical user interface <br>• Provision of the operating modes jog, speed control, positioning (relative/absolute), and referencing <br>• Diagnostic monitor for monitoring and controlling the axis <br>• Standardized process data interface <br><br>For more information, refer to the associated → manual. | |
| **Project planning notes** | |
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) <br>• MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 🗎 27) type code |

**MOVIKIT® Velocity**

| Functional description | |
|---|---|
| MOVIKIT® Velocity allows for implementing applications with speed control and a predefined fieldbus interface. The software module mainly uses the basic functions of the application inverter in use by activating the respective function blocks (such as FCB 09 Position control) depending on the application. This means the scope of functions that can be used depends on the application inverter in use (for example encoder feedback available). Overview of functions: <br><br>• Startup using a graphical user interface <br>• Provision of the operating modes jog, speed control, positioning (relative/absolute), and referencing <br>• Diagnostic monitor for monitoring and controlling the axis <br>• Standardized process data interface <br><br>For more information, refer to the associated → manual. | |
| **Project planning notes** | |
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes) <br>• MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 🗎 27) type code |

### 4.3.7 Category "StackerCrane"

The category "StackerCrane" includes MOVIKIT® software modules for implementing storage/retrieval systems.

**MOVIKIT® StackerCrane effiDRIVE®**

| Functional description |
|---|
| MOVIKIT® StackerCrane effiDRIVE® can be used for implementing all kinds of storage/retrieval systems with up to 4 travel axes and 4 lifting axes. Up to 25% of energy can be saved by optimizing the travel cycles of lifting and travel drives. In addition, the scope of functions can be extended by a multi-axis control or vibration damping, for example (see illustration). The software modules "MOVIKIT® StackerCrane MultiMotion" (→ 📄 54) and "MOVIKIT® StackerCrane MultiAxisController" (→ 📄 54) are available for adding lower-level single axes or groups of axes.<br><br>For more information, refer to the associated → manual. |
| **Illustration** |



**MOVIKIT® StackerCrane effiDRIVE® – range of functions**

- Anti-oscillation control
- Auto leveling: Anti-skew also in the event of a fault
- Rope elongation compensation – also in case of load transfer
- Anti-belly sway
- Anti-sway travel control through intelligent control of profiles and disturbances
- Energy-optimized xy operation
- Electrical braking if encoder fault occurs
- Anti-slip control electronic differential lock
- Electronic differential for SRS units with cornering ability
- Emergency mode/ deactivate external encoder
- External encoder with increased position control loop

Range of functions of MOVIKIT® StackerCrane effiDRIVE® in combination with MOVIKIT® ...

- MultiMotion
- \+ MultiMotion add-on PositionController + ... add-on CombinedEncoderEvaluation
- MultiAxisController

| Project planning notes | |
|---|---|
| **License type** | Single license – license for a stacker crane |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible |
| **Type code** | • SMK1301-000 |

**MOVIKIT® StackerCrane MultiMotion**
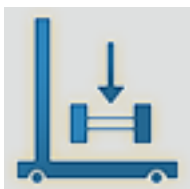
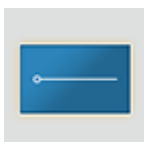| Functional description | |
|---|---|
| MOVIKIT® StackerCrane MultiMotion is used for adding a single axis in direction of travel underneath a MOVIKIT® StackerCrane effiDRIVE®. See "stacker crane" (→ 🖺 64) application example.<br><br>For more information, refer to the associated → manual. | |
| **Project planning notes** | |
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® StackerCrane effiDRIVE® |
| **Type code** | See "MOVIRUN® flexible" (→ 🖺 27) type code |

**MOVIKIT® StackerCrane MultiAxisController**

| Functional description | |
|---|---|
| The software module MOVIKIT® StackerCrane MultiAxisController is used to add several axes in direction of travel underneath a MOVIKIT® StackerCrane effiDRIVE®. Individual axes subordinate to the MOVIKIT® Stacker Crane MultiAxis Controller require the MOVIKIT® StackerCrane MultiMotion software module. See the "stacker crane" (→ 🖺 64) application example.<br><br>For more information, refer to the associated → manual. | |
| **Project planning notes** | |
| **License type** | Included in the MOVIKIT® MultiAxisController license |
| **Requirements** | • MOVI-C® CONTROLLER (all power classes)<br>• MOVIRUN® flexible<br>• MOVIKIT® StackerCrane effiDRIVE® |
| **Type code** | See type code "MOVIKIT® MultiAxisController" (→ 🖺 34) |

4

### 4.3.8 Category "Power and Energy Solutions"

The category "Power and Energy Solutions" includes energy supply solutions for inverters of the MOVIDRIVE® modular series.

**MOVIKIT® Power and Energy Solutions DirectMode**
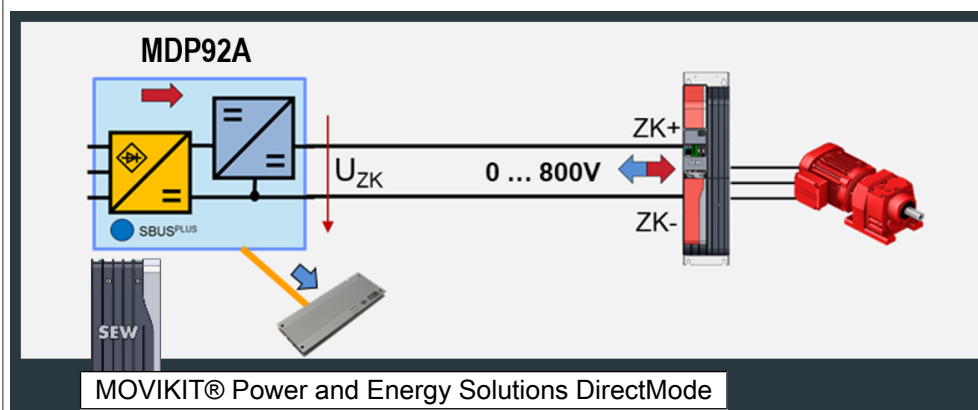
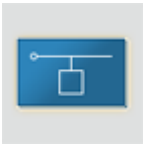| Functional description |
|---|
| The MOVIKIT® Power and Energy Solutions DirectMode together with an MDP92A power supply module or MDE90A energy converter from the SEW "Power and Energy Solutions" product series allows for simple, programmable power supply for MOVIDRIVE® modular inverters. MOVIKIT® Power and Energy Solutions DirectMode is particularly suited for applications without energy storage. Overview of functions:<br><br>• Communication of the MOVI-C® CONTROLLER with the MDP92A power supply module and the MDE90A energy converter<br>• Acquisition of the grid supply and axis module power ratings<br>• Acquisition of the power for external AC consumers<br>• Dynamically adjustable maximum AC or DC grid reference power<br>• Dynamically adjustable current limits<br>• Dynamically adjustable DC link voltage (up to 800 V)<br>• Provision of status information for the AC grid (phase failure and/or power failure, external conductor voltages and phase current; only MDP92A)<br>• Fieldbus interface for communication with higher-level controllers<br><br>For more information, refer to the associated → manual. |
| **Illustration** |
| Application case of MOVIKIT® Power and Energy Solutions DirectMode MDP92A power supply module and MOVIDRIVE® modular axis module:<br><br>MOVIKIT® Power and Energy Solutions DirectMode |

| Project planning notes | |
|---|---|
| **License type** | Included in the license for MOVIRUN® flexible |
| **Requirements** | • MOVI-C® CONTROLLER UHX45A, UHX65A, UHX85A<br>• MOVIRUN® flexible |
| **Type code** | See "MOVIRUN® flexible" (→ 🖹 27) type code |

**MOVIKIT® Power and Energy Solutions EnergyMode**

| Functional description |
|---|
| The MOVIKIT® Power and Energy Solutions EnergyMode enables highly efficient energy supply solutions with energy storage decoupled from the DC link and simple supply from the AC grid (bridge rectifier). The energy storage unit is not connected directly to the DC link but via an MDE90A energy converter from SEW's "Power and Energy Solutions" product range. This opens up advantages with regard to a deeper storage discharge and smaller storage design. Software support at control level is provided by MOVIKIT® EnergyMode. Overview of functions: <br><br> • Communication of the MOVI-C® CONTROLLER with the MDE90A energy converter <br><br> • Dynamically adjustable DC link voltage (up to 800 V) or adjustable state of charge including definition of the working range <br><br> • Variable control regarding DC link or memory with dynamically adjustable power or current limitation <br><br> • Acquisition of axis module performance and memory performance <br><br> • Acquisition of the power for external AC consumers <br><br> • Monitoring of the energy storage units by querying via the diagnostic interface (for example the current temperature of the storage unit or signals for overtemperature and overvoltage) <br><br> • Automatic synchronization and activation of the energy storage unit <br><br> • Fieldbus interface for communication with higher-level controllers <br><br> For more information, refer to the associated → manual. |
| **Illustration** |
| Application of MOVIKIT® Power and Energy Solutions EnergyMode with conventional MDP90A power supply module, MDE90A energy converter and MOVIDRIVE® modular axis module: |



MOVIKIT® Power and Energy Solutions EnergyMode

| Project planning notes | |
|---|---|
| License type | Performance license – license for a MOVI-C® CONTROLLER |
| Requirements | • MOVI-C® CONTROLLER UHX45A, UHX65A, UHX85A <br> • MOVIRUN® flexible |
| Type code | • SMK1403-040 (for UHX45A) <br> • SMK1403-060 (for UHX65A) <br> • SMK1403-080 (for UHX85A) |

**MOVIKIT® Power and Energy Solutions PowerMode**
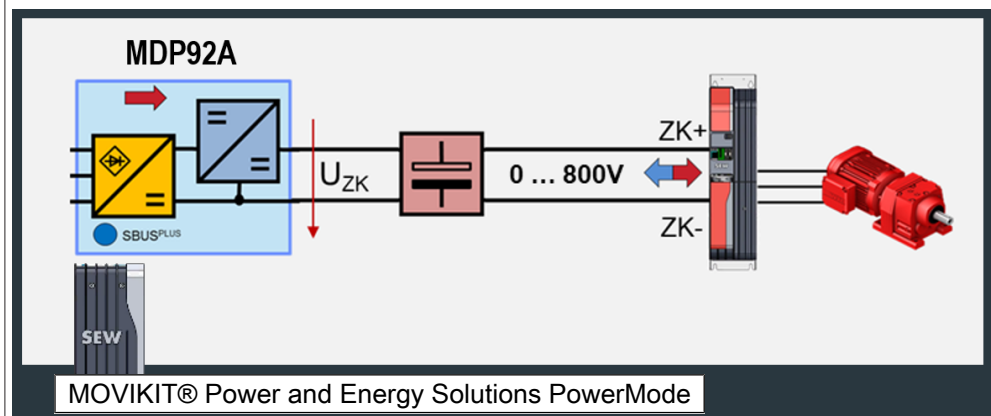
| Functional description |
|---|

The MOVIKIT® Power and Energy Solutions Power-Mode provides, together with an MDP92A power supply module or MDE90A energy converter from the SEW "Power and Energy Solutions" product series as well as additional energy storage units, the possibility for modularly creating highly-efficient energy supply solutions for MOVIDRIVE® inverters. This MOVIKIT® is therefore particularly designed for applications with energy storage units that are directly switched in the DC link. MOVIKIT® Power and Energy Solutions PowerMode provides the scope of functions of MOVIKIT® Power and Energy Solutions DirectMode plus the extensions for the described application. Overview of additional functions:

- Dynamically adjustable state of charge of the storage unit including specification of the operating range
- Power-regulated discharge of the DC link (only MDP92A)
- Automatic synchronization and activation of the energy storage unit
- Monitoring of the energy storage units by querying via the diagnostic interface (depending on the interface, for example current storage unit temperature or signals for overtemperature and overvoltage)
- Fieldbus interface for communication with higher-level controllers
- Determination of remaining runtime after power failure

For more information, refer to the associated → manual.

| Illustration |
|---|

Application case of MOVIKIT® Power and Energy Solutions PowerMode with MDP92A power supply module and MOVIDRIVE® modular axis module and energy storage unit:



MOVIKIT® Power and Energy Solutions PowerMode

| Project planning notes | |
|---|---|
| License type | Performance license – license for a MOVI-C® CONTROLLER |
| Requirements | • MOVI-C® CONTROLLER UHX45A, UHX65A, UHX85A<br>• MOVIRUN® flexible |
| Type code | • SMK1402-040 (for UHX45A)<br>• SMK1402-060 (for UHX65A)<br>• SMK1402-080 (for UHX85A) |

### 4.3.9 Category "Communication"

The category "Communication" includes MOVIKIT® software modules that provide various communication services.

**MOVIKIT® OPC UA**

| Functional description |
|---|
| An OPC UA server is provided on the MOVI-C® CONTROLLER using MOVIKIT® OPC UA. This server can be used, for example, for integrating third-party devices as visualizations (HMI panels, tablets, augmented reality, etc.). A requirement for this is that the OPC UA communication protocol is supported and an OPC UA client is available. The OPC UA server implements communication to the OPC UA specification and in accordance with the "Micro Embedded Device Server" profile, based on the communication stack of the OPC Foundation. The server receives its data via the symbol configuration in the CODESYS development system. The MOVIKIT® OPC UA therefore provides a basic solution for the integration and visualization of components, using the OPC UA communication protocol. |

**Illustration**

**OPC UA topology:**



| Project planning notes | |
|---|---|
| License type | Performance license – license for a MOVI-C® CONTROLLER |
| Requirements | • MOVI-C® CONTROLLER progressive (UHX65A)<br>• MOVIRUN® flexible |
| Type code | • SMK1501-060 (UHX65A) |

## 4.4 Software services

Software services are software functions that can be executed on the optional CFast memory card OMW65A for the MOVI-C® CONTROLLER progressive or on any Windows PC. These services provide additional Windows-based automation functions, such as visualization or camera evaluation.

### 4.4.1 Category "Visualization"

The category "Visualization" includes software modules that support the graphical representation of data of the MOVI-C® CONTROLLER.
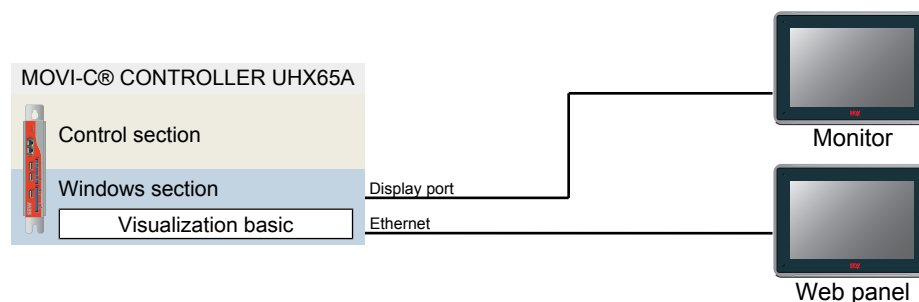
**Visualization basic**

| Functional description |
| --- |
| Visualization basic is used for equipping the MOVI-C® CONTROLLER progressive UHX65A with a graphical user interface (visualization). For this purpose, the software module is installed on the Windows section (OMW CFast memory card) of the MOVI-C® CONTROLLER.<br><br>Visualization means the graphical representation of the data of the MOVI-C® CONTROLLER. The local display port interface can be used for display or a remote browser panel for web visualization. |

| Illustration |
| --- |

MOVI-C® CONTROLLER UHX65A

Control section

Windows section     Display port

Visualization basic     Ethernet

Monitor

Web panel

| Project planning notes | |
| --- | --- |
| **License type** | Single license – license for an instance |
| **Requirements** | • MOVI-C® CONTROLLER progressive UHX65A<br>  (4-core version)<br>• OMW CFast memory card with Windows operating system |
| **Type code** | • SSE0001-000 |

**Visualization flexible (in preparation)**

| Functional description |
| --- |
| Visualization flexible is used for equipping a remote Windows device with a graphical user interface (visualization). The software module is installed on this device for this purpose.<br><br>By means of visualization, the data of a MOVI-C® CONTROLLER are displayed on a remote HMI device (such as monitor or web panel) for a 1:1 machine visualization.<br><br>The local display port interface can be used for display or a remote browser panel for web visualization. |

| Illustration |
| --- |



| Project planning notes | |
| --- | --- |
| **License type** | Single license – license for an instance |
| **Requirements** | • Windows 10 |
| **Type code** | • SSE0002-000 |

**Visualization multi (in preparation)**

| Functional description |
|---|
| Visualization multi is used for equipping a remote Windows device with a graphical user interface (visualization). The software module is installed on this device for this purpose. |
| By means of visualization, the data of one or several MOVI-C® CONTROLLER are combined and displayed on a remote HMI device. |
| The local display port interface can be used for display or a remote browser panel for web visualization. |

| Illustration |
|---|

MOVI-C® CONTROLLER
Control section

MOVI-C® CONTROLLER
Control section

MOVI-C® CONTROLLER
Control section

...

Ethernet

Windows device

Visualization multi

Display port

Monitor

Ethernet

Web panel

| Project planning notes | |
|---|---|
| License type | Single license – license for an instance |
| Requirements | • Windows 10 |
| Type code | • SSE0003-000 |

# 5 Application examples

## 5.1 Gantry crane (MOVIKIT® MultiAxisController)

The following example includes all the licenses available of the "MultiAxisController" (→ 🖺 34) category of MOVIKIT® software modules. A gantry crane is implemented with 2 drives on the A-side of the x-axis and 4 drives on its B-side.
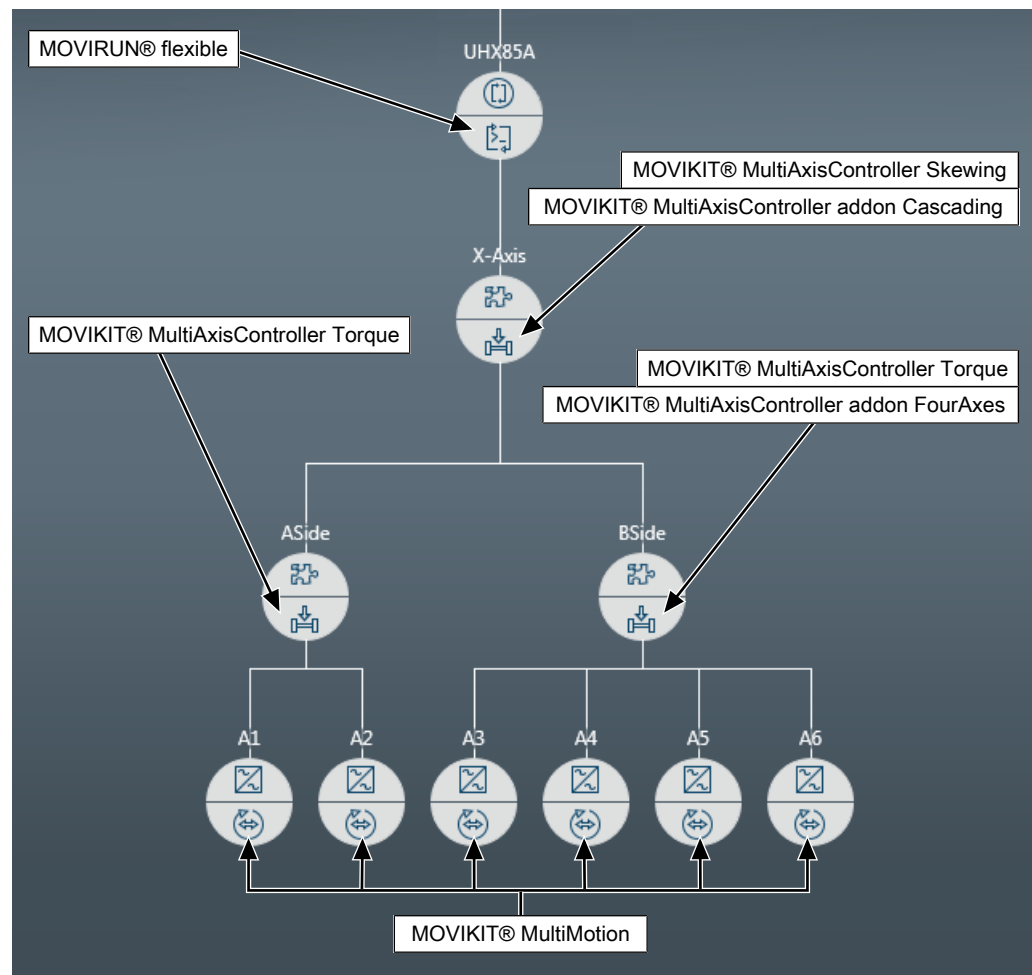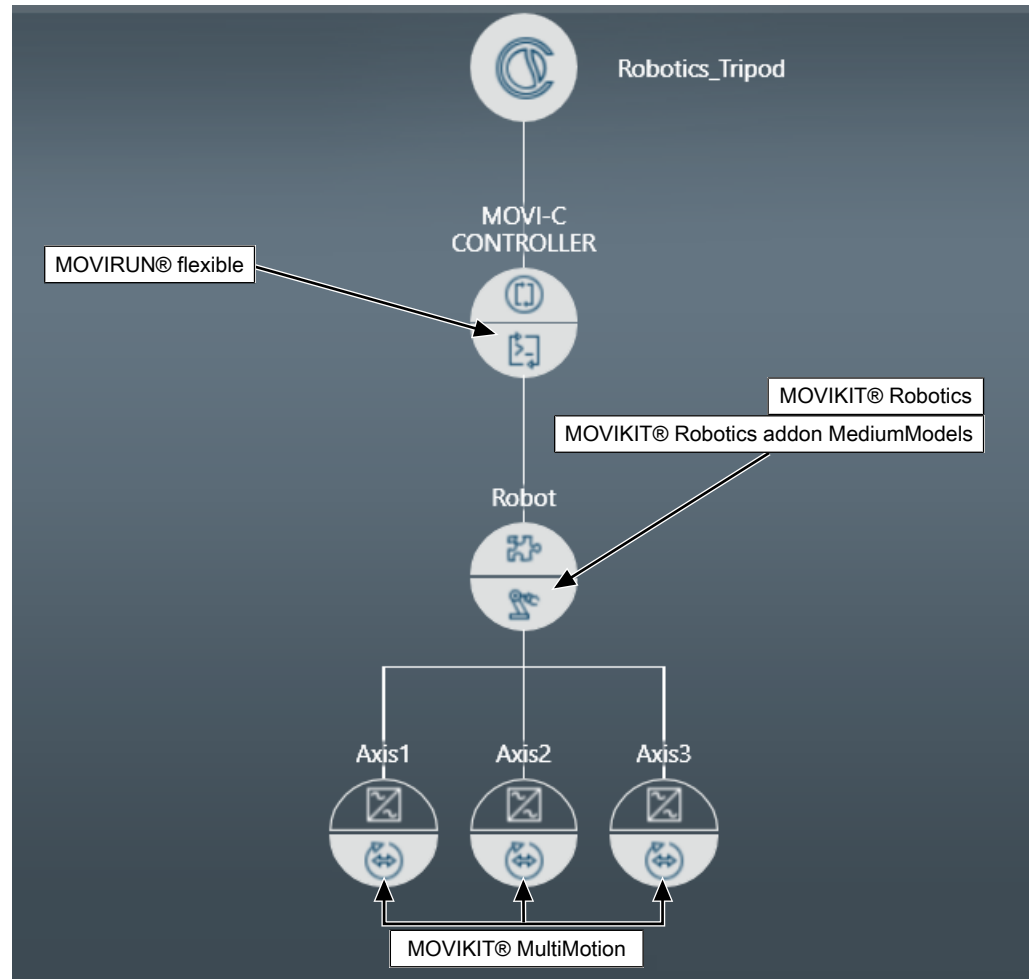


*9007224712054411*

The shown configuration includes the following licenses:

- 1 x MOVIRUN® flexible (SMR0001-080)
- 1 x MOVIKIT® MultiAxisController Skewing (SMK1202-000)
- 1 x MOVIKIT® MultiAxisController add-on Cascading (SMK1205-000)
- 2 x MOVIKIT® MultiAxisController Torque (SMK1201-000)
- 1 x MOVIKIT® MultiAxisController add-on FourAxes (SMK1204-000)

## 5.2 Robot (MOVIKIT® Robotics)

The following example includes all the licenses of the "Robotics" (→ 🖹 47) category of MOVIKIT® software modules. A robot of the type "tripod" is implemented for example for pick and place applications.
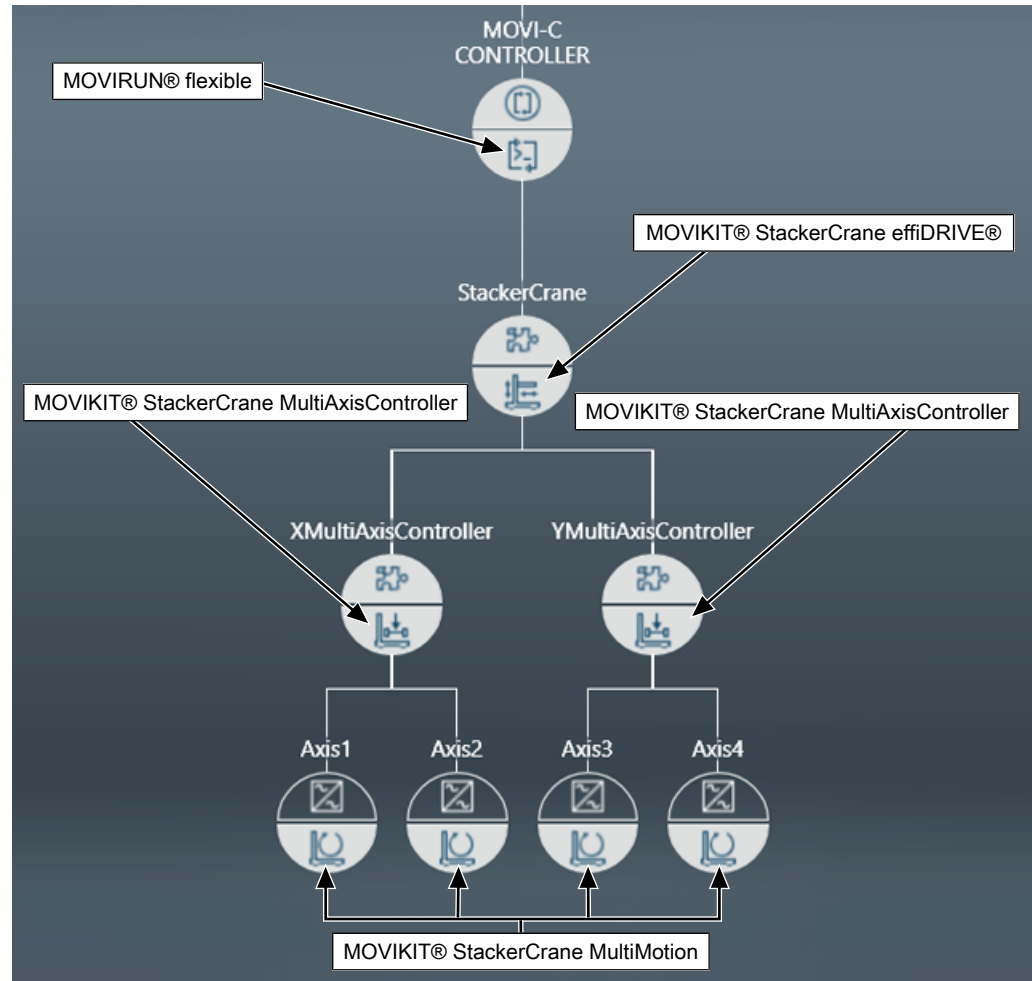


*30416444043*

The shown configuration includes the following licenses:

- 1 x MOVIRUN® flexible (SMR0001-080)
- 1 x MOVIKIT® Robotics (SMK1101-000)
- 1 x MOVIKIT® Robotics add-on MediumModels (SMK1102-000)

## 5.3 Storage/retrieval system (MOVIKIT® StackerCrane effiDRIVE®)

The following example includes licenses of the "StackerCrane" (→ 🖹 53) category of the MOVIKIT® software modules. A storage/retrieval system is implemented with two drive axes each in travel and lifting directions.
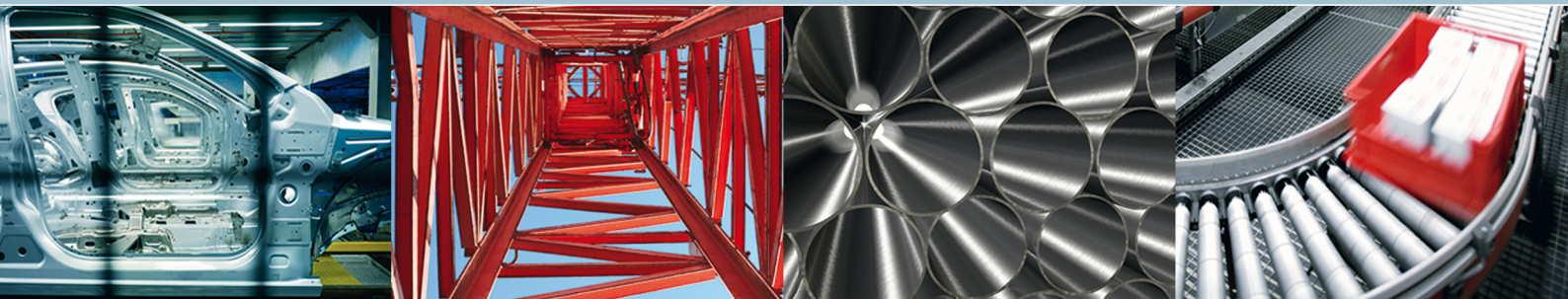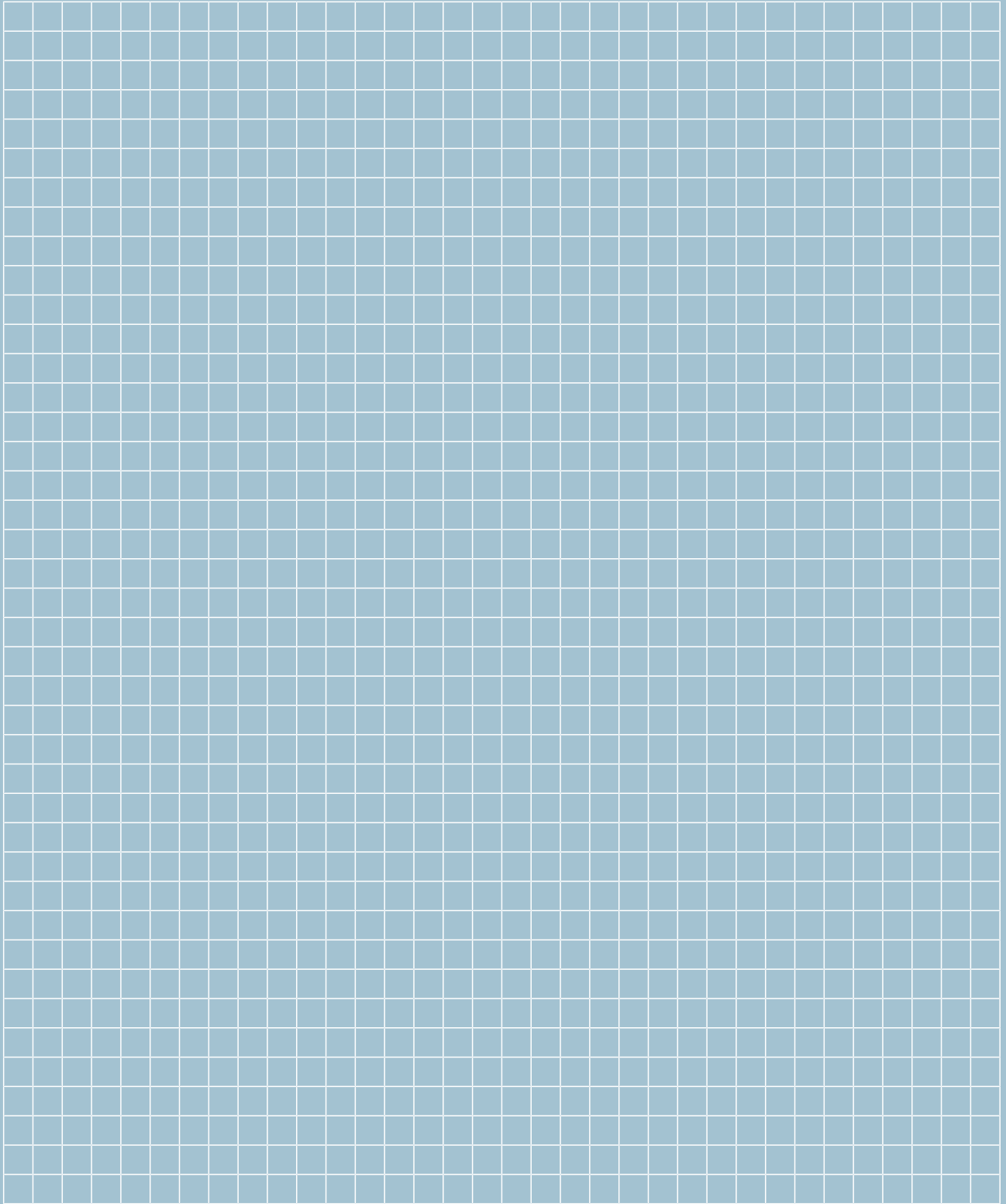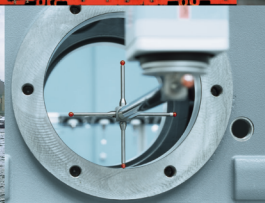


*30416450955*

The shown configuration includes the following licenses:

• 1 x MOVIRUN® flexible (SMR0001-080)

• 1 x MOVIKIT® StackerCrane effiDRIVE® (SMK1301-000)

• 2 x MOVIKIT® MultiAxisController Torque/Skewing (SMK1201/1202-000)

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