

Perfect automation with the
MOVITOOLS® MotionStudio

All tools in one modular software concept



Perfect Automation with MOVITOOLS® MotionStudio

The right selection of drive engineering solutions forms the basis for an economical, productive system concept and optimum automation for system manufacturers and operators. The challenge for providers of drive engineering solutions is not limited to supplying reliable and flexible drive systems alone but also includes offering comprehensive and user-friendly software solutions.

The new MOVITOOLS® MotionStudio from SEW-EURODRIVE is a consistent software concept for all drive electronic products from SEW-EURODRIVE.

The great advantage for system manufacturers and operators: You need only one software package for consistent engineering.

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide. SEW-EURODRIVE products can be found in a variety of industries, e. g. automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology “made by SEW-EURODRIVE” stands for safety regarding functionality and investment.



MOVITOOLS® MotionStudio

Universal:

Is used for complete engineering startup, parameter setting, programming, control, diagnostics, communication, and visualization.

User-friendly:

The SEW Communication Server lets you choose the communication paths as it supports a great number of different communication media and fieldbus systems.

Unit-independent:

Can be used in the following areas

Central

- MOVIDRIVE® inverters
- MOVITRAC B® frequency inverters
- Fieldbus gateways



Decentralized

- MOVIFIT®, drive control systems for innovative decentralized installations
- MOVIMOT®, gearmotors with integrated frequency inverter
- Field distributor



Servo

- MOVIAXIS® multi-axis servo drive



Comprehensive – user-friendly – unit-independent

Consistent: The engineering

The modular MOVITOOLS® MotionStudio software system provides the tools for user-friendly and reliable startup, configuration, diagnostics, and visualization of the drive electronics.

MOVITOOLS® MotionStudio – Overview of features:

- Application programs to IEC61131-3 can be used for all products based on PLC-Editor
- Choice of different communication media and fieldbus systems is possible
- Calling via TCI (Tool Calling Interface) in preparation
- Handling of projects with several different units (multi-unit point of view)
- Uniform multi-product editors for programming and parameter setting
- Harmonized IEC libraries concept: Basic, Motion or Application library
- SEW application modules for parameter setting in a large number of applications
- Editor for creating customer-specific visualizations and application-specific diagnostics
- Continuity and downward compatibility, which means all previous programs from the previous modular MOVITOOLS® system can be started

User-friendly and unit-independent: The communication

In order to make use of the developments in industrial communications, you can operate MOVITOOLS® MotionStudio supported by the SEW Communication Server to configure different communication media.

Advantages of communication via SEW Communication Server:

- Central data storage
- Decentral and application-specific diagnostics
- Use of modern remote maintenance technologies
- All units at a glance
- Free choice of communication channels
- Up to four communication channels can be configured

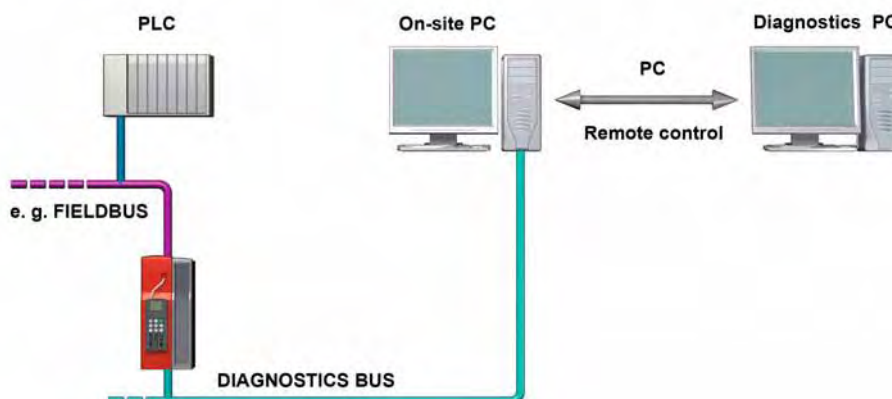
Communication channels

Communication channel	Unit compatibility
Serial connection (RS-232C, RS-485)	All units of the MOVIDRIVE® inverter series, MOVITRAC® B frequency inverters, MOVI-PLC® controls, DFx fieldbus gateways and MFx/MQx field distributors via different interface converters.
Industrial ETHERNET	All units of the MOVIDRIVE® inverter series, MOVITRAC® B frequency inverters series, MOVIAXIS® multi-axis servo drives and decentralized installations with MOVIFIT® with ETHERNET option.
PROFIBUS (incl. MPI on PROFIBUS)	All units with PROFIBUS option of the MOVIDRIVE® inverters, MOVITRAC® B frequency inverters, MOVI-PLC® controls, decentralized installations with MOVIFIT® and MOVIAXIS® multi-axis servo drives via DFP21B fieldbus gateway and MQP field distributors.
CAN (S-BUS)	All units of the MOVIDRIVE® inverter series, MOVITRAC® B frequency inverters and MOVIAXIS® multi-axis servo drives via USB-CAN interface converter.

Remote maintenance

For all units of the MOVIDRIVE® inverter series, MOVITRAC® B frequency inverter series, and decentralized installation concepts that are connected with an “on-site diagnostic PC” via diagnostic interface and via the company’s LAN or telephone network. Another diagnostic

PC can access the “on-site diagnostic PC” from any location in the company’s LAN or from any location in the world, for example via a modem, can operate this “on-site diagnostic PC” remotely or use it as gateway for the drives from SEW-EURODRIVE.



Project management provides more transparency

Users need various visualizations, for example a view of the units, the machine, or part of the system, but they also need to view the network with the communication interfaces.

The project management provides this transparency.

Project management can be used to structure the units in such a way that they display the function of the machine or system. This structure is independent of the communication link.

Advantages of project management:

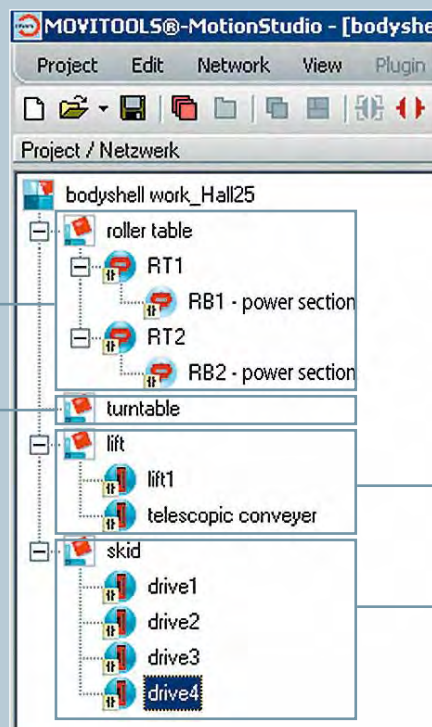
- Units are structured according to their functions in the machine or system
- Structured file storage
- The machine or system can be projected in offline mode
- Simple comparison of actually present and online accessible data of units with data of the projected units
- The same (projected) units can be used with different communication links



Roller conveyor



Rotary table



Hoist/lowering station



Skillet

The tools can be used individually or combined

MOVITOOLS® MotionStudio of SEW-EURODRIVE is characterized by being straightforward, user-friendly and universally applicable.

The tools are integrated in a modular software system and can be used for all units. Whether you use them individually or combined, the tools are essential for quick and effective automation.

The MOVITOOLS® MotionStudio detects all the stations connected to the configured interfaces automatically and displays them as nodes in a unit tree.

The required tools can be selected and started quickly and easily in the context menu of each node.

“Startup” function



Tool	Description
Startup wizard	<p>To optimally adjust the inverter to the connected motor and encoder.</p> <p>The “Startup wizard” offers the user step-by-step support for entering the necessary application data, such as acceleration, deceleration and velocity.</p> <p>The tool then calculates all parameters for motor control and optimizes the control loops for current, speed, and position.</p>
Manual operation	The tool allows for manually controlling the units directly from the PC.

“Parameter setting” function



Tool	Description
Parameter tree	<p>The "Parameter tree" tool of MOVITools® MotionStudio provides a uniform editor for setting the parameters of the various unit types.</p> <p>Parameter tree at a glance:</p> <ul style="list-style-type: none"> – Managing unit parameters – Reading/changing individual unit parameters – Comparing parameters of two units or between backup copy and unit – Searching unit parameters – Documenting unit parameters – Creating individual views of a group of unit parameters
PDO Editor	<p>The PDO Editor (Process Data Object Editor) is a tool for the MOVIAXIS® servo inverter for graphic parameter setting of process data.</p> <p>The process data are linked using drag and drop, which means the interface between inverter and higher-level controller is configured graphically.</p> <p>Configuration at a glance:</p> <ul style="list-style-type: none"> – Parameter setting of input/output terminals – Graphical parameter setting of process data – Parameter settings for function control blocks of MOVIAXIS®
Gateway Configurator	<p>Uniform tool for diagnostics and configuration of the following fieldbus gateways:</p> <ul style="list-style-type: none"> – UFx41B – Dfx – MOVIFIT®, Classic and Technology function levels

“Diagnostics and visualization” function



Tool	Description
Status	The tool supports diagnostics of the unit, provides general unit status information, and as allows for performing a manual unit reset.
Application Builder	<p>Editor for creating application-specific visualizations and application-specific diagnostics.</p> <p>Direct communication to parameters and variables enables the user to display actual values and messages, and modify process values and data.</p> <p>A direct visual reference to the machine or system is created by the integration of graphics and images.</p> <p>The Application Builder prepares the application in such a way that the user only has to enter mechanical data for startup. If the user creates a diagnostics monitor, all process data, terminal states and text messages will be available at a glance.</p> <p>The visualization can even be linked with the associated inverter program (IPOS®) and the required parameter settings via file download. This enables user-specific condensation of the diverse functionality of drive inverters and controls so that even “non-specialists” will be able to operate the units.</p>
Fieldbus monitor	<p>The tool allows for</p> <ul style="list-style-type: none"> – Communication diagnostics between fieldbus and unit (monitor mode) – Setpoint specification to the unit independent of the controller (control mode)
Scope	<p>The “Scope” tool is an oscilloscope program (diagnostics of process values by recording in real time) that can be used for all inverters to optimize the drive.</p> <p>Overview of the scope tool:</p> <ul style="list-style-type: none"> – Visualization: Scope can display up to 8 analog and digital measured variables in differently colored curves. Both the x-axis and the y-axis can be scaled as required. – “Scope” also enables the user to record digital input and output signals of the inverter. Complete program sequences of the master controller are recorded and analyzed in this way. – Scope supports simple documentation of the set parameters and the recorded measuring data by means of the “save” and “print” options.

“Programming” function



Tool	Description
PLC Editor	<p>For programming the MOVI-PLC® controller series; various libraries are offered independent of the unit.</p> <p>Libraries: Efficient programming demands user-friendly function modules that enable fast and approved solutions.</p> <p>The PLC Editor provides a comprehensive range of function modules for a wide variety of tasks, arranged in hierarchical libraries according to functionality. In addition to a library for standard IEC functions, there is also a library for each drive electronics component, in which modules provide the corresponding drive functionality. The libraries also contain the familiar PLCopen-certified motion blocks.</p> <p>Libraries for technology functions are available, such as synchronous operation, electronic cam, virtual encoder and cam controller, right through to ready-to-use application solutions, such as handling.</p> <p>These function modules can be combined easily to create individual, tailor-made solutions.</p>
IPOS® Assembler und Compiler	<p>This tool is available for</p> <ul style="list-style-type: none"> – programming in assembler and – programming in high-level language <p>for IPOS® programs.</p>

Technology Editor – cross functional:

Tool	Description
Motion technology editor	Editor for <ul style="list-style-type: none"> – Simple startup – Parameterization – Control – Visualization of technology functions MOVIAXIS® technology functions: <ul style="list-style-type: none"> – Electronic gear unit – Electronic cam – Touch probe – Event control – Virtual encoder MOVIDRIVE® technology functions: <ul style="list-style-type: none"> – Internal synchronous operation – Electronic cam – Application modules, such as flying saw
Single-axis positioning MOVIAXIS®	Editor for <ul style="list-style-type: none"> – Simple startup – Parameterization – Control – Visualization of positioning functions