



**SEW**  
**EURODRIVE**

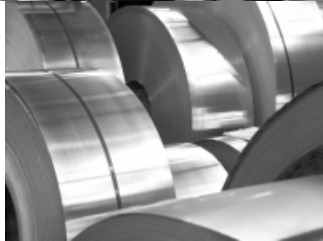
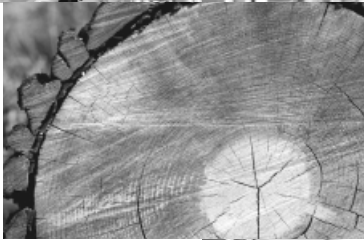


# **MOVITOOLS<sup>®</sup> MotionStudio**

Edition 06/2008

16616413 / EN

# Manual





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## General Information

### Structure of the safety notes

## 1 General Information

### 1.1 Structure of the safety notes

The safety notes in these operating instructions are structured as follows:

<b>Symbol</b>	<b>! SIGNAL WORD</b>
	Nature and source of hazard Possible consequence(s) if disregarded <ul style="list-style-type: none"> <li>• Measure(s) to avoid the hazard</li> </ul>

Symbol	Signal word	Meaning	Consequences if disregarded
Example:  General hazard	<b>! HAZARD</b>	Imminent hazard	Severe or fatal injuries
	<b>! WARNING</b>	Possible hazardous situation	Severe or fatal injuries
 Specific hazard, e.g. electric shock	<b>! CAUTION</b>	Possible hazardous situation	Minor injuries
	<b>CAUTION</b>	Possible damage to property	Damage to the drive system or its environment
	<b>NOTE</b>	Useful information or tip Simplifies handling of the drive system	



## 1.2 *Liability for defects*

Compliance with this manual and the operating instructions of the units is prerequisite for fault-free operation and fulfillment of any right to claim under warranty. You should therefore read the manual and operating instructions of the units before you start working with the software and units.

Make sure that the operating instructions are available to persons responsible for the machinery and its operation as well as to persons who work independently on the units. You must also ensure that the operating instructions are legible.

## 1.3 *Exclusion of liability*

You must comply with the information contained in this manual and in the operating instructions of the units to ensure safe operation and to achieve the specified product characteristics and performance requirements. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, any liability for defects is excluded.

## 1.4 *Copyright*

© 2008 – SEW-EURODRIVE. All rights reserved.

Copyright law prohibits the duplication (all or in part), modification, distribution, and use of this document for ulterior purposes.



## 2 Safety Notes

The following basic safety notes are intended to prevent injury to persons and damage to property. The operator must ensure that the basic safety notes are read and observed. Ensure that persons responsible for the system and its operation as well as persons who work independently on the units have read through the manual carefully and understood it. If you are unclear about any parts of this documentation or require further information, please contact SEW-EURODRIVE.

The following safety notes are concerned with the use of MOVITOOLS® MotionStudio. Also take into account the supplementary safety notes in the individual sections of this documentation and in the documentation of the units.

### 2.1 General information

Read through this manual carefully before you use MOVITOOLS® MotionStudio.

This document does not replace the detailed operating instructions for the units. This manual assumes that the user has access to, and is familiar with, the documentation on the units.

Never install damaged products or put them into operation. Submit a complaint to the shipping company immediately in the event of damage. Only qualified personnel observing the applicable accident prevention regulations and operating instructions are allowed to install and put units into operation.

During operation, units with this type of enclosure may have live, uninsulated, and sometimes moving or rotating parts as well as hot surfaces.

Removing covers without authorization, improper use, as well as incorrect installation or operation may result in severe injuries to persons or damage to machinery.

Consult the documentation for further information.





## 2.2 Designated use

MOVITOOLS<sup>®</sup> MotionStudio is a software package for engineering of the following SEW-EURODRIVE GmbH & Co KG units:

- Frequency inverters
- Drive inverters
- Servo inverters

## 2.3 Target group

The MOVITOOLS<sup>®</sup> MotionStudio user is a qualified professional with appropriate training.

SEW-EURODRIVE recommends that the user also participates in additional product training for the units and motors which are operated by MOVITOOLS<sup>®</sup> MotionStudio.

Any work related to installation, startup, and maintenance of the units as well as troubleshooting must be performed by qualified personnel. Observe IEC 60364 and CENELEC HD 384 or DIN VDE 0100 and IEC 60664 or DIN VDE 0110 as well as the national accident prevention regulations.

Qualified personnel in the context of these basic safety notes are persons familiar with installation, assembly, startup, and operation of the product who possess the required qualifications.

All work in further areas of transportation, storage, operation, and waste disposal must be carried out by qualified personnel who are appropriately trained.

## 2.4 Bus systems

A bus system makes it possible to adapt frequency inverters and/or motor starters to the particulars of the machinery. There is the risk that a change of parameters that cannot be detected externally can result in unexpected, though not uncontrolled, system behavior.



### **3 Documentation**

#### **3.1 *Product name and trademarks***

The brands and product names mentioned in this documentation are trademarks or registered trademarks of the titleholders.

#### **3.2 *Additional documentation***

In addition to this manual, SEW-EURODRIVE offers you extensive documentation covering the entire topic of electrical drive engineering. These are mainly the publications in the "Drive Engineering – Practical Implementation" series as well as the manuals and catalogs for electronically controlled drives.

You can download a wide selection of our documentation in a number of languages on our homepage ([www.sew-eurodrive.com](http://www.sew-eurodrive.com)). If required, you can also order printed and bound copies of the documentation from SEW-EURODRIVE.



## 4 About MOVITOOLS® MotionStudio

### 4.1 Tasks

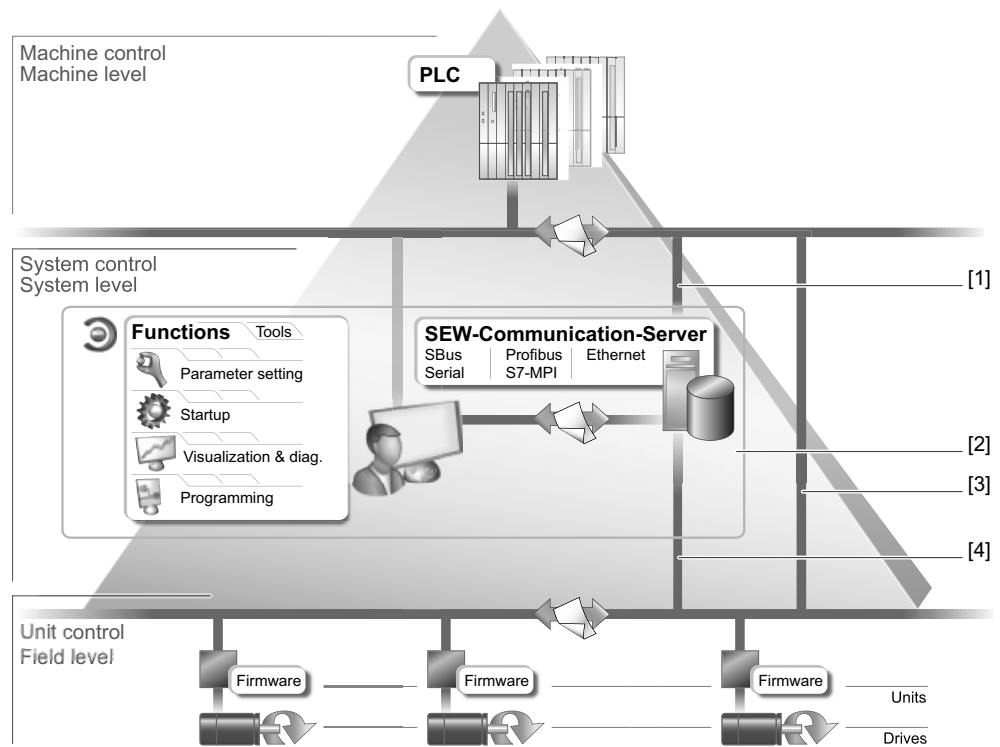
The software package enables you to perform the following tasks with consistency:

- Establishing communication with units
- Executing functions with the units

### 4.2 Operating principle

#### 4.2.1 Overview

The following figure illustrates the theory of operation of the MOVITOOLS® MotionStudio software package:



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- [1] Communication channel for fieldbus or Industrial Ethernet  
 [2] MOVITOOLS MotionStudio software package with integrated SEW Communication Server  
 [3] Communication between fieldbus stations or Industrial Ethernet stations  
 [4] Communication channel to SBus or serial via interface adapter



#### 4.2.2 Establishing communication with units

The SEW Communication Server is integrated into the MOVITOOLS® MotionStudio software package for establishing communication with the units.

The SEW Communication Server allows you to create **communication channels**. Once the channels are established, the units communicate via these communication channels using their communication options. You can operate up to four communication channels at the same time.

You can select from the following types of communication channels:

- Serial (RS-232, RS-485) via interface adapters
- System bus (SBus) via interface adapters
- Industrial Ethernet
  - Ethernet IP
  - PROFINET IO
  - EtherCAT
- Fieldbus
  - PROFIBUS DP/DPV1
- S7-MPI

#### 4.2.3 Executing functions with the units

The software package offer uniformity in executing the following functions:

- Setting parameters (in the parameter tree of the unit)
- Startup
- Visualization and diagnostics
- Diagnostics of units and visualization of unit settings

The following basic components are integrated into the MOVITOOLS® MotionStudio software package, allowing you to use the units to execute functions:

- MotionStudio
- MOVITOOLS®

All functions communicate using **tools**. MOVITOOLS® MotionStudio provides the right tools for every unit type.



## 4.3 Help

### 4.3.1 Technical support

SEW-EURODRIVE offers you a 24-hour service hotline.

Simply dial **(+49) 1805** and then enter the letters **SEWHELP**. Of course, you can also dial **(+49) 1805 7394357**.

### 4.3.2 Online help

After installation, the following types of help are available to you:

- This documentation is displayed in a help window after you start the software.  
If the help window does not appear at the start, deactivate the "Display" control field, in the menu under [Settings] / [Options] / [Help].  
If the help window appears again, activate the "Display" control field, in the menu under [Settings] / [Options] / [Help].
- Context-sensitive help is available for the fields which require you to enter values. For example, you can use the <F1> key to display the ranges of values for the unit parameters.



## 5 Installation

### 5.1 Hardware

#### 5.1.1 Connection types

You will need additional connection hardware (option), which you can obtain from SEW-EURODRIVE, to connect your PC to the unit.

The type of connection hardware you require depends on the units.

The following table shows you the different types of connection hardware available, and for which units they are suitable.

Connection Hardware (Option)	Order No.	Scope of Delivery	Units
USB11A interface adapter	08248311	<ul style="list-style-type: none"> <li>• Connection cable with RJ10 connector and USB connector</li> <li>• USB cable</li> </ul>	<ul style="list-style-type: none"> <li>• MOVIDRIVE<sup>®</sup> B</li> <li>• MOVITRAC<sup>®</sup> 07A</li> <li>• MOVITRAC<sup>®</sup> B</li> <li>• MOVIFIT<sup>®</sup> MC/FC/SC</li> <li>• MOVIGEAR<sup>®</sup></li> <li>• UFx fieldbus gateways</li> <li>• DFx fieldbus gateways</li> <li>• DHx MOVI-PLC<sup>®</sup> control</li> <li>• MFx-MQx fieldbus interfaces for MOVIMOT<sup>®</sup> or field distributors Z3/Z6/Z7/Z8</li> </ul>
USB-CAN interface	18210597	<ul style="list-style-type: none"> <li>• Connection cable with 9-pole sub-D connector, length: 2 m</li> <li>• A 120 ohm terminating resistor is fitted to one end of the cable</li> </ul>	<ul style="list-style-type: none"> <li>• MOVIAXIS<sup>®</sup></li> <li>• MOVIDRIVE<sup>®</sup> B</li> <li>• MOVITRAC<sup>®</sup> B</li> </ul> <p><b>Note:</b> Use the cable supplied in the delivery for MOVIAXIS<sup>®</sup> units only. If you are operating other units, you must prefabricate an appropriate cable.</p>



### 5.1.2 Starting up the USB11A interface adapter

#### Prerequisite



#### NOTE

If you wish to use the USB11A interface adapter, carry out the following steps **before** you install MOVITOOLS® MotionStudio:

- Connect the USB11A interface adapter to your PC (see page 16).
- Install the USB driver (see page 17).

The USB driver for the USB11A interface adapter is located on the MOVITOOLS® MotionStudio installation CD (software ROM 7).

You can also download the USB driver from the SEW homepage. Proceed as follows:

- Go to <http://corporate.sew-eurodrive.com/support/>
- Search for "Interface Driver & Fieldbus Tools" under "Software".

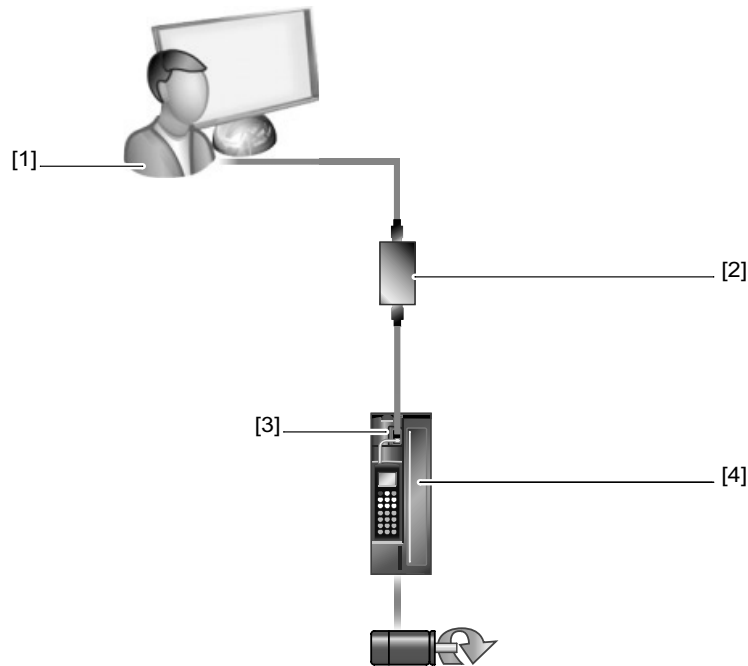
The following instructions describe how to start up the USB11A with a MOVIDRIVE® unit. To start up other units using the USB11A, proceed in the same way.



### Connecting the USB11A interface adapter

The figure shows the connection of the USB11A [2] to MOVIDRIVE® [4] and to the PC [1] using the two cables that are provided.

- Connection cable with RJ10 connectors on both ends
- USB cable with one **B** connector and one **A** connector



1193490827

- [1] PC  
 [2] USB11A  
 [3] Diagnostics socket (X terminal) of MOVIDRIVE®  
 [4] MOVIDRIVE®

Follow the instructions below to connect the USB11A interface adapter to your PC.

1. Plug the RJ10 connector on the connector cable into the diagnostics socket (X terminal) [3] of MOVIDRIVE® [4].
2. Insert the RJ10 connector on the connection cable into the USB11A [2].
3. Insert the **B** connector of the USB cable into the USB11A [2].
4. Insert the **A** connector of the USB cable into a free USB port on your PC [1].
5. Install the USB driver (see page 17).





### *Installing the USB driver*

Follow the instructions below to install the USB driver for the USB11A interface adapter.

1. Make sure that you have local administrator rights on your PC.
2. Insert the MOVITOOLS<sup>®</sup> MotionStudio installation CD (Software ROM 7) into the drive of your PC.
3. Connect the USB11A interface adapter to a free USB port on your PC.  
Your PC will detect the new hardware and launch the hardware wizard.
4. Follow the instructions of the hardware wizard to install the **first** driver file.
5. Repeat the previous step to install the **second** driver file.

### **5.1.3 Starting up the USB-CAN interface**

For detailed information about the startup of a USB-CAN interface, refer to the "MOVIAXIS<sup>®</sup> MX Multi-Axis Servo Inverter Operating Instructions" manual.



## 5.2 Software

### 5.2.1 Prerequisite

*Administrator  
rights*

	<p><b>NOTE</b></p> <p>You need local administrator rights to be able to install MOVITOOLS® MotionStudio on your PC.</p> <ul style="list-style-type: none"> <li>• Contact your system administrator if you do not have local administrator rights on your PC.</li> </ul>
--	---

*Microsoft products*

When you install MOVITOOLS® MotionStudio, the following Microsoft products are installed on your PC:

- Microsoft.NET Framework 2.0
- Installer 3.1
- J# Redistributable 2.0

	<p><b>NOTE</b></p> <p>If Microsoft.NET Framework 2.0 has not already been installed on your PC, the installation routine recognizes this and automatically selects the relevant control field.</p>
--	--

*Older versions of  
MOVITOOLS®  
MotionStudio*

Older versions of MOVITOOLS® MotionStudio are uninstalled during the installation routine but the project data is retained.



### 5.2.2 Starting installation from a CD

Proceed as follows to start the installation procedure from the CD:

1. Place the installation CD into your CD-ROM drive.
2. Wait until the installation starts automatically.

The "Start.htm" file is displayed in the browser.



#### NOTE

If the "Start.htm" file does **NOT** automatically open, open the file manually from the root directory of the installation CD.

3. Follow the "Software" link.
4. Click the "Setup" interface for the appropriate software package.  
The ..\soft file directory opens.
5. Launch *Setup.exe*.  
The Setup wizard is launched.
6. Proceed as described in:
  - Installing software (standard) (see page 20)
  - Installing software (user-defined) (see page 22)



### 5.2.3 Downloading and installing the software package from the SEW homepage

Perform the following steps to download the software package from the SEW homepage and start the installation.

1. Go to the software search on the "Documentation / Software / CAD" page of the SEW website.
2. Select "MOVITOOLS® MotionStudio" from the dropdown list and press the [Start Search] button.
3. Click on the link of the software package you need.
4. Fill out the contact form and press [Accept].  
The "File download" window opens.
5. Save the compressed installation directory to your PC.
6. Open the installation directory and click on the "Start.htm" file.  
The "Start.htm" file is displayed in the browser.
7. To start installing the software package, follow the steps, starting with step 2, described in "Starting installation from a CD" (see page 19).

### 5.2.4 Installing software (standard)

Proceed as follows to install the software (standard):

1. Select the language for installation.
2. Select one of the following installation options:
  - Standard (standard **without** control technology)
  - Complete (standard **with** control technology)
3. Follow the instructions of the Setup wizard.
4. Enter the target directory for the installation, or confirm the standard directory.



### 5.2.5 Adding exceptions to the firewall for software components (options)

Before starting MOVITOOLS® MotionStudio, you must add exceptions to your firewall for the installed software components.

If you are using the WINDOWS firewall, MOVITOOLS® MotionStudio does not automatically add exceptions for the installed software components.

If you are using another firewall, follow the steps below.

1. At the end of the installation, pay attention to the window with the executable programs, which you must enter in your firewall.



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The example displays the executable programs for a typical installation.

These are:

- SEWManager.exe
  - Ofdas.exe
  - Secos.exe
  - Gateway.exe (for PLC Editor)
  - GatewayDDE.exe (for PLC Editor)
2. In your firewall, add exceptions for all executable programs that belong to the software components (options) you have installed.
  3. Contact your system administrator if you do not have access to your firewall.



### 5.2.6 Installing software (user-defined)

*Selecting software  
components  
(options)*

Proceed as follows to install the software (user-defined):

1. Select the installation option "user-defined".
2. Follow the instructions of the Setup wizard.
3. Choose the software components (options) for your units by activating the appropriate checkboxes.

Refer to the tables for selecting software components (options):

- MOVIDRIVE<sup>®</sup> (see page 23)
- MOVITRAC<sup>®</sup> (see page 24)
- MOVIAXIS<sup>®</sup> (see page 25)
- MOVI-PLC<sup>®</sup> (see page 26)
- Decentralized drive technology (see page 27)




Also note the information on the scope of services found in the documentation for each unit.

4. Confirm the selected software components.
5. Follow the instructions of the Setup wizard.
6. Enter the target directory for the installation, or confirm the standard directory.






MOVIDRIVE®  
units

Refer to the following table when selecting software components for the MOVIDRIVE® units:

Units		Software components				
Designation	Representation	MOVITOOLS® MotionStudio	Communication Server	PLC Editor	MOVITOOLS®	USB-CAN interface
MOVIDRIVE® B	 1197256459	Mandatory	Mandatory	Not required	Mandatory	Recommended
MOVIDRIVE® B with MOVI-PLC®	 1197262219	Mandatory	Mandatory	Mandatory	Mandatory	Recommended
MOVIDRIVE® A / MOVIDRIVE compact	 1197280267	Not required	Not required	Not required	Mandatory	Not required






**MOVITRAC<sup>®</sup> units** Refer to the following table when selecting software components for the MOVITRAC<sup>®</sup> units:

Units		Software components				
Designation	Representation	MOVITOOLS <sup>®</sup> MotionStudio	Communication Server	PLC Editor	MOVITOOLS <sup>®</sup>	USB-CAN interface
MOVITRAC <sup>®</sup> B (without IPOS)	 1197331723	Mandatory	Mandatory	Not required	Not required	Not required
MOVITRAC <sup>®</sup> B (with IPOS)		Mandatory	Mandatory	Not required	Mandatory	Not required
MOVITRAC <sup>®</sup> B with MOVI-PLC <sup>®</sup>	 1197337483	Mandatory	Mandatory	Mandatory	Not required	Not required, but recommended
MOVITRAC <sup>®</sup> 07	 1197342219	Not required	Not required	Not required	Mandatory	Not required








**MOVIAXIS® units** Refer to the following table when selecting software components for the MOVIAXIS® units:

Designation	Units	Software components				
	Representation	MOVITOOLS® MotionStudio	Communication Server	PLC Editor	MOVITOOLS®	USB-CAN interface
MOVIAXIS®	 119793771	Mandatory	Mandatory	Not required	Not required	Mandatory
MOVIAXIS® with MOVI-PLC® <i>basic</i> master module	 962316939	Mandatory	Mandatory	Mandatory	Not required	Not required
MOVIAXIS® with MOVI-PLC® <i>advanced</i> master module		Mandatory	Mandatory	Mandatory	Not required	Not required
MOVIAXIS® with MOVI-PLC® Gateway master module		Mandatory	Mandatory	Mandatory	Not required	Not required
MOVIAXIS® with MOVI-PLC®	 1197979019	Mandatory	Mandatory	Mandatory	Not required	Recommended



MOVI-PLC<sup>®</sup> and  
gateways




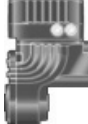
Refer to the following table when selecting software components for MOVI-PLC<sup>®</sup> and gateways:

Units		Software components				
Designation	Representation	MOVITOOLS <sup>®</sup> MotionStudio	Communication Server	PLC Editor	MOVITOOLS <sup>®</sup>	USB-CAN interface
MOVI-PLC <sup>®</sup> <i>basic</i>	 1198073867	Mandatory	Mandatory	Mandatory	Recommended	Recommended
UFx11A fieldbus gateway	 1198079115	Not required	Not required	Not required	Mandatory	Not required
DFx fieldbus gateway	 1198083979	Mandatory	Mandatory	Not required	Not required	Not required



*Decentralized  
drive technology*

Refer to the following table when selecting software components for decentralized drive engineering:

Units		Software components				
Designation	Representation	MOVITOOLS® MotionStudio	Communication Server	PLC Editor	MOVITOOLS®	USB-CAN interface
MOVIFIT® function level Classic	 1198132363	Mandatory	Mandatory	Not required	Mandatory for MOVIFIT® MC	Not required
MOVIFIT® function level Technology		Mandatory	Mandatory	Mandatory	Mandatory for MOVIFIT® MC	Not required
MOVIMOT®	 1198368139	Not required	Not required	Not required	Mandatory	Not required
MFx/MQx fieldbus interface	 1198372491	Not required	Not required	Not required	Mandatory	Not required
MOVIGEAR®	 1198127115	Mandatory	Mandatory	Not required	Not required	Not required



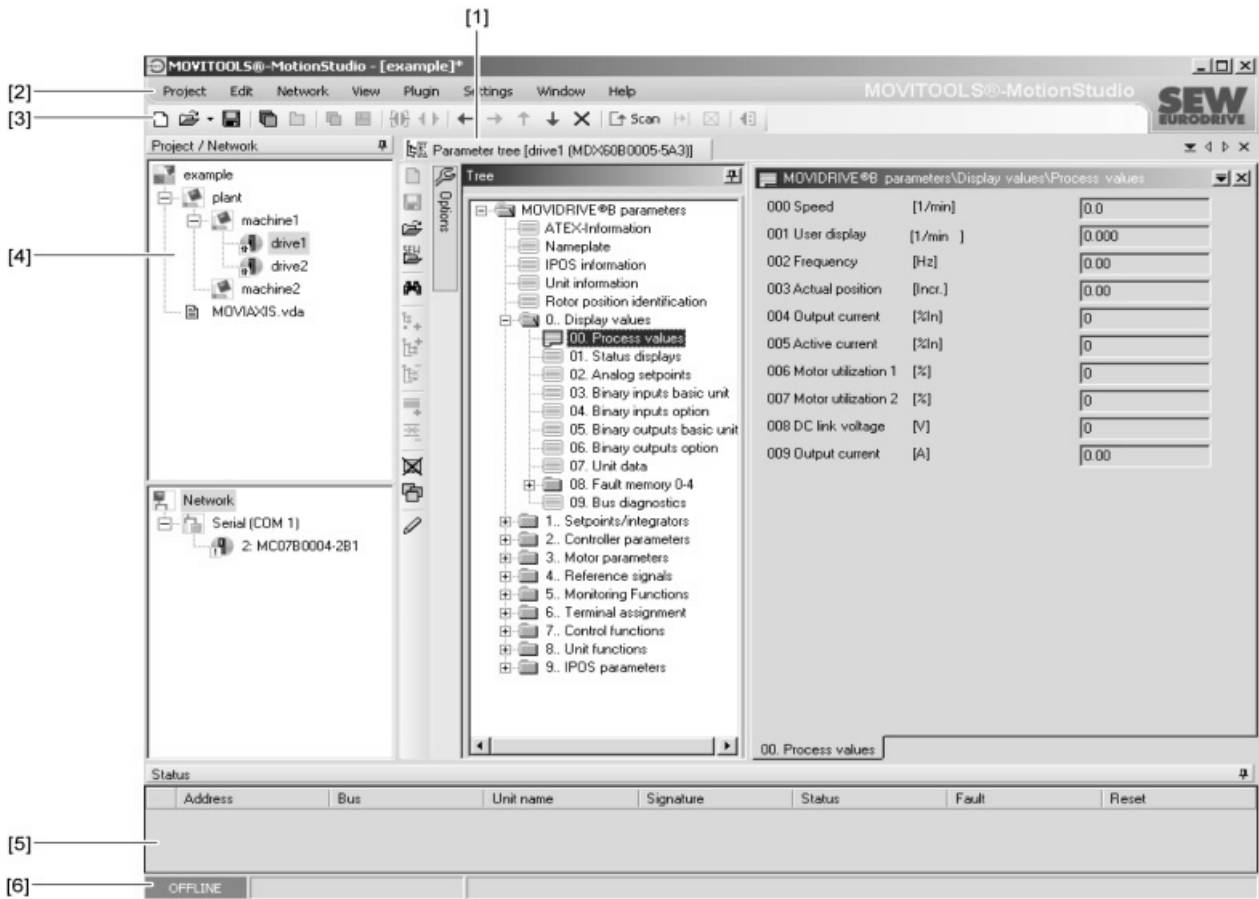
## 6 Interface and Views

### 6.1 Interface, toolbar, and context menu

#### 6.1.1 Interface design

The MOVITOOLS® MotionStudio user interface comprises a central framework and individual tools. These are started as separate applications from the framework, or they are integrated into the framework as plug-ins.

The following figure shows the different areas within the framework:



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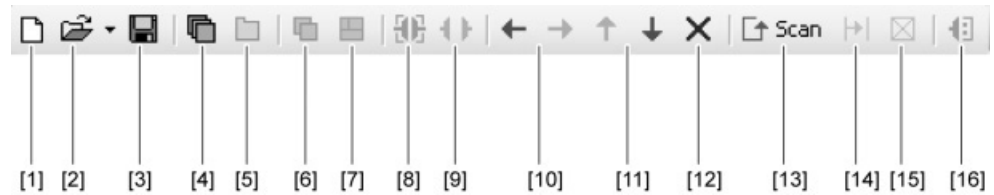
The following table describes the areas within the framework and their function:

Area	Designation	Function
[1]	Area for plug-ins	<ul style="list-style-type: none"> <li>• The tools are displayed in the form of plug-ins in this area.</li> <li>• The plug-ins are displayed either on tab pages or as a separate window.</li> </ul> <p>In the example, the parameter tree (see page 90) tool has been selected for a MOVIDRIVE® unit.</p>
[2]	Menu bar	The main menu and toolbar contain all the important commands for navigating the framework.
[3]	Toolbar	
[4]	Area for views	<ul style="list-style-type: none"> <li>• The information about the units in a project is visualized using the following types of views (see page 32):                             <ul style="list-style-type: none"> <li>• Network view</li> <li>• Project view</li> </ul> </li> <li>• You can also hide this area, if you choose.</li> </ul>
[5]	Online unit status area	<ul style="list-style-type: none"> <li>• You can display the status information for units that you can access online in the "online unit status" area.</li> <li>• You can also hide this area, if you choose.</li> </ul>
[6]	Status bar	<ul style="list-style-type: none"> <li>• You can view the set communication mode in the status bar.</li> <li>• This is where progress information is displayed during a unit scan.</li> </ul>



### 6.1.2 Structure of the toolbar

The following figure shows the MOVITOOLS® MotionStudio toolbar:



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Position	Interface name	Function
[1]	New project	Creates a new project
[2]	Open project	Opens an existing project
[3]	Save project	Saves the current project
[4]	Show window	Switches to window view
[5]	Show tabs	Switches to tab view
[6]	Tile windows	Arranges the windows so that they overlap (active only in window view [4])
[7]	Display windows side by side	Arranges the windows so they are displayed next to one another (active only in window view [4])
[8]	Switch to online mode	Switches to online mode
[9]	Switch to offline mode	Switches to offline mode
[10]	Disengage nodes Engage nodes	Moves the nodes in the views (disengage/engage)
[11]	Move nodes up Move nodes down	Moves the nodes in the views (up/down)
[12]	Delete node	Deletes selected unit
[13]	Start network scan	Scans the network for units
[14]	Continue network scan with the next medium	Cancel the unit scan for the current communication channel and continues the unit scan with the next communication channel
[15]	Cancel network scan	Cancel the unit scan for <b>all</b> communication channels in the network
[16]	Configure communication plugs	Opens the window for configuring the communication channels



### 6.1.3 Context menu structure

The following figure shows the three areas in the context menu of the MOVITOOLS® MotionStudio:



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Position	Area in context menu
[1]	In this area, the 5 tools that you used last are entered dynamically.
[2]	This is where tools are located.
[3]	In this area, you can find commands for project management and the command for displaying the online unit status.



## 6.2 Views and node types

### 6.2.1 Types of views

MOVITOOLS® MotionStudio displays information on the units in views.

The following table explains the two types of views:

View	Function
Project view	<ul style="list-style-type: none"><li>• Displays all configured units in a freely definable logical hierarchy</li><li>• In this view, you can visualize the way the units fit together within a machine or a system component, for example.</li></ul>
Network view	<ul style="list-style-type: none"><li>• Displays all units with a communication link</li><li>• This view visualizes the topology of a network and its units.</li></ul>

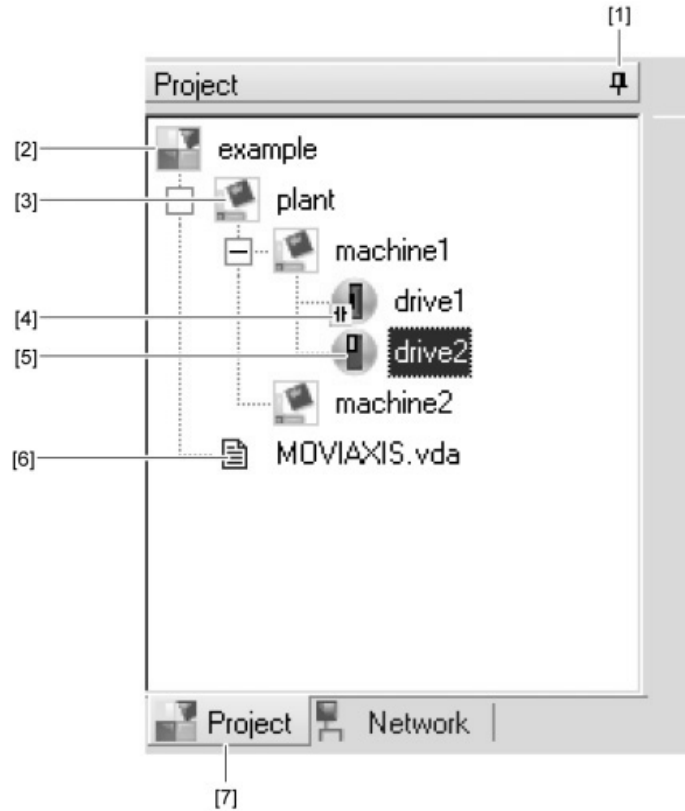
A project has exactly one project view at all times. There can also be one or several network views.





### 6.2.2 Project view and node types

The figure shows the structure of the "Project view" window and examples of node types:



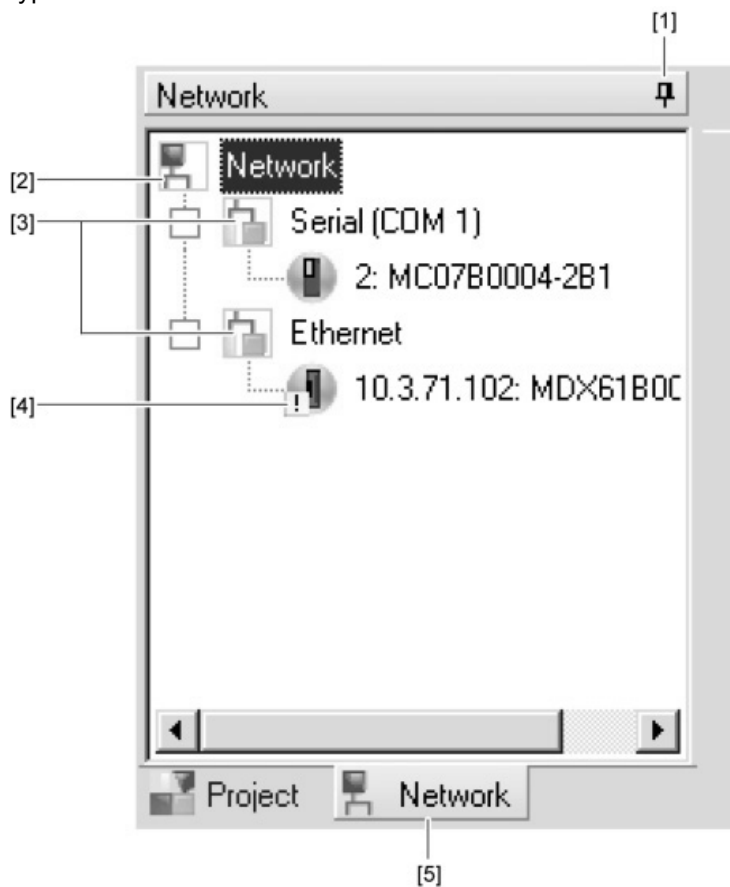
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Position	Designation	Function
[1]	Pushpin	"Pins" the window to the screen
[2]	Project node	<ul style="list-style-type: none"> <li>• Top node in the project view</li> <li>• Represents the project and is given the same name</li> </ul>
[3]	Structure node	<ul style="list-style-type: none"> <li>• Combines several units in one partial tree to show how they fit together</li> <li>• You can freely assign the name of the structure node.</li> </ul>
[4]	Mini symbol of a unit node	<ul style="list-style-type: none"> <li>• Displays the node status (see page 49).</li> </ul>
[5]	Unit node	<ul style="list-style-type: none"> <li>• Shows a configured unit: Separate unit parameters (parameter files) in the project are managed for this unit.</li> <li>• In the example, the configured unit is also in the network (communication link), with matching parameters. In this case, <b>NO</b> mini symbol is displayed (standard).</li> </ul>
[6]	Parameter file node	Represents a unit-independent parameter file
[7]	"Project view" tab	Tab for displaying the project view



#### 6.2.3 Network view and node types

The figure shows the structure of the "Network view" window and examples of node types:



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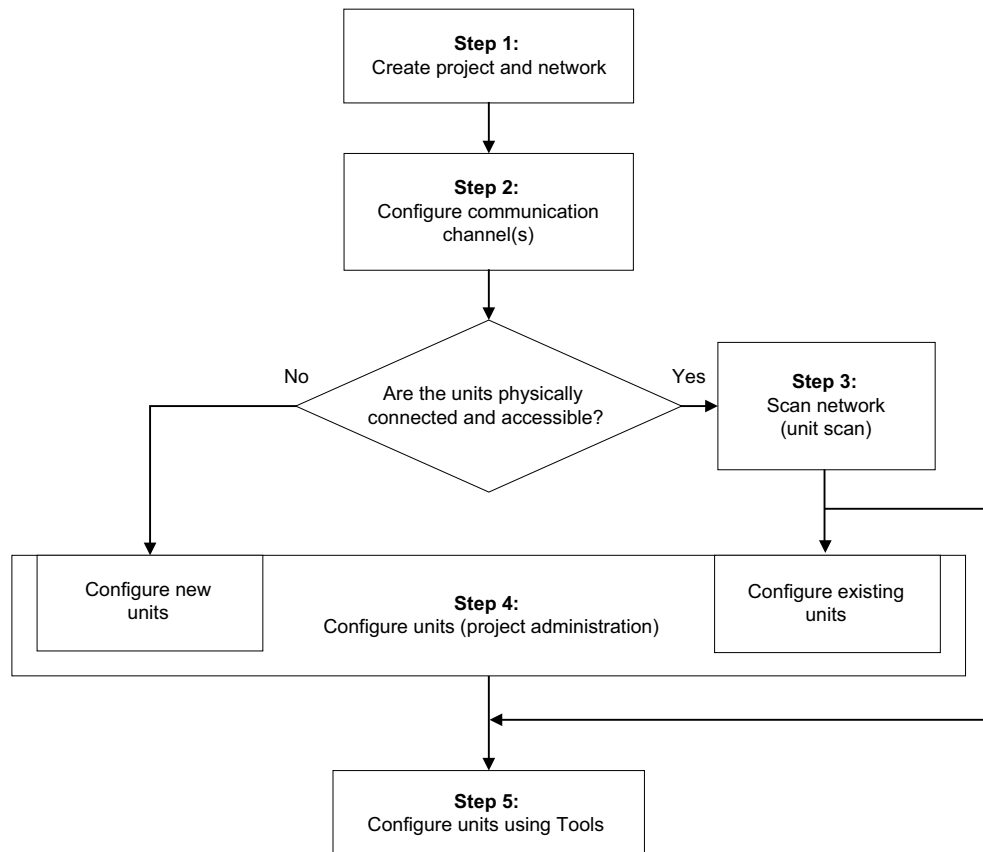
Position	Designation	Function
[1]	Pushpin	"Pins" the window to the screen
[2]	Master node	<ul style="list-style-type: none"> <li>• Top node in the network view</li> <li>• Represents the network and is given the same name</li> </ul>
[3]	Bus node	Represents a communication link in the network
[4]	Unit node with mini symbol	<ul style="list-style-type: none"> <li>• The unit node shows the unit in the network and its communication link.</li> <li>• In this example, the unit has not yet been configured. The mini symbol displays this node status (see page 49).</li> </ul>
[5]	"Network view" tab	Tab for displaying the network view



## 7 First Steps

### 7.1 Workflow

The following figure illustrates the steps for configuring your units using the tools in MOVITOOLS® MotionStudio.



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1. Carry out steps 1 and 2 to set up your project and establish the communication link. After you are done, you will be in the Network view.
2. Carry out step 3 when units are physically connected and can be accessed online.
3. Perform step 4 when you would like to configure the unit. You should first become familiar with project management (see page 45).
4. Perform step 5. If you need to, change the view and communication mode.



#### NOTE

You can find detailed information about each step (1-5) in the section "Steps in detail" (see page 38).



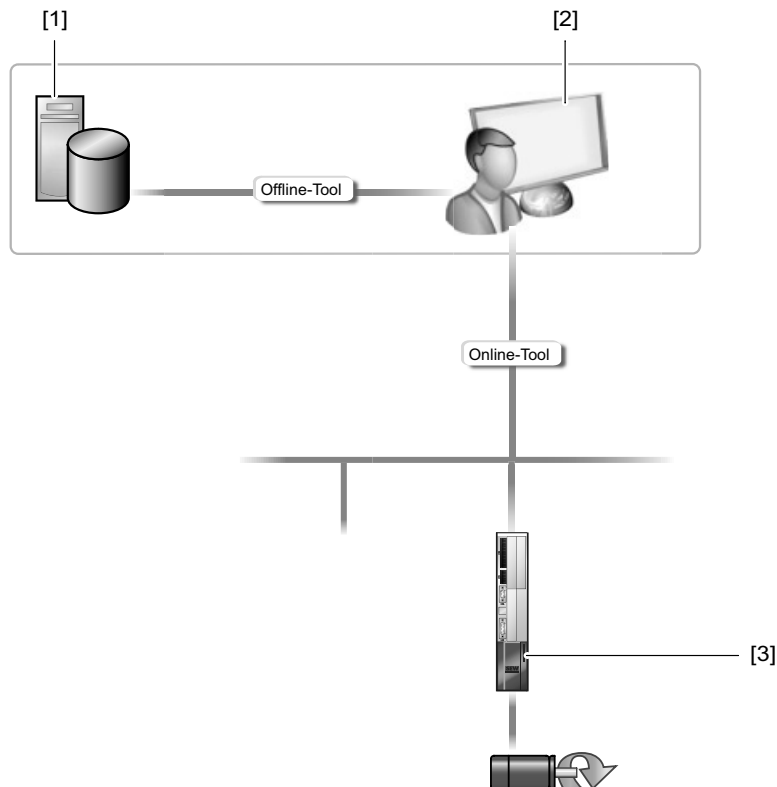
## 7.2 Communication mode

### 7.2.1 Overview

MOVITOOLS® MotionStudio differentiates between the "online" and "offline" communication mode.

You determine the communication mode. Depending on the selected communication mode, you can choose offline or online tools specific to your unit.



The following figure illustrates the two types of tools:



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Tools	Description
Offline tools	<p>Changes made using offline tools affect <b>ONLY</b> the working memory [2].</p> <ul style="list-style-type: none"> <li>• Save your project so that the changes can be stored on the hard disk [1] of your PC.</li> <li>• By downloading, you can transfer the changes to your unit [3].</li> </ul>
Online tools	<p>Changes made using online tools affect <b>ONLY</b> the unit [3].</p> <ul style="list-style-type: none"> <li>• By uploading, you can transfer the changes to the working memory [2].</li> <li>• Save your project so that the changes can be stored on the hard disk [1] of your PC.</li> </ul>



	<p><b>NOTE</b></p> <p>The online communication mode is <b>NOT</b> a response message which informs you that you are currently connected to the unit or that your unit is ready for communication.</p> <ul style="list-style-type: none"> <li>• If you need this response message, set up the "cyclic availability test" and pay attention to the related instruction.</li> </ul>
	<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Project management commands (such as download and upload), the online unit status, and the unit scan work independent of the set communication mode.</li> <li>• MOVITOOLS® MotionStudio starts up in the communication mode that you set before you closed down.</li> </ul>

### 7.2.2 Selecting communication mode (online or offline)

Proceed as follows to select a communication mode:

1. Select the communication mode:
  - "Online" [1] for functions (online tools) that should directly influence the unit
  - "Offline" [2] for functions (offline tools) that should influence your project



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2. Select the unit node.
3. Right-click to open the context menu and display the tools for configuring the unit.



### 7.3 Steps in detail

#### 7.3.1 Prerequisite



#### NOTE

Before starting MOVITOOLS® MotionStudio, you must add exceptions to your firewall for software components (options) (see page 21) that you have installed.

- In your firewall, enter all the executable programs that belong to the software components you have installed.
- Check your firewall settings. It is possible that the firewall would prevent the execution of a program in the background. In other words, the user would not receive a message.

#### 7.3.2 Step 1: Creating a project and network

The "Welcome..." window launches when you start MOVITOOLS® MotionStudio, and prompts you to create a project.

1. Make sure that "New project" is selected and press OK.

This opens the "New project" window.

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2. Enter a name and save directory for the new project. Press OK.

This will open the main screen.



### 7.3.3 Step 2: Configuring communication channel(s)

The following section describes the procedure for configuring a serial communication channel.

You can configure other communication channels in the same way. The step-by-step instructions below will guide you through this procedure:

- Configuring communication settings via SBus (see page 66)
- Configuring communication settings for ETHERNET (see page 69)
- Configuring communication settings via PROFIBUS (see page 78)
- Configuring communication settings via S7-MPI (see page 82)

#### Configuring serial communication

You must have a serial connection between your PC and the units you want to configure. You can establish one, for example, using the USB11A interface adapter.

Proceed as follows to configure serial communication:

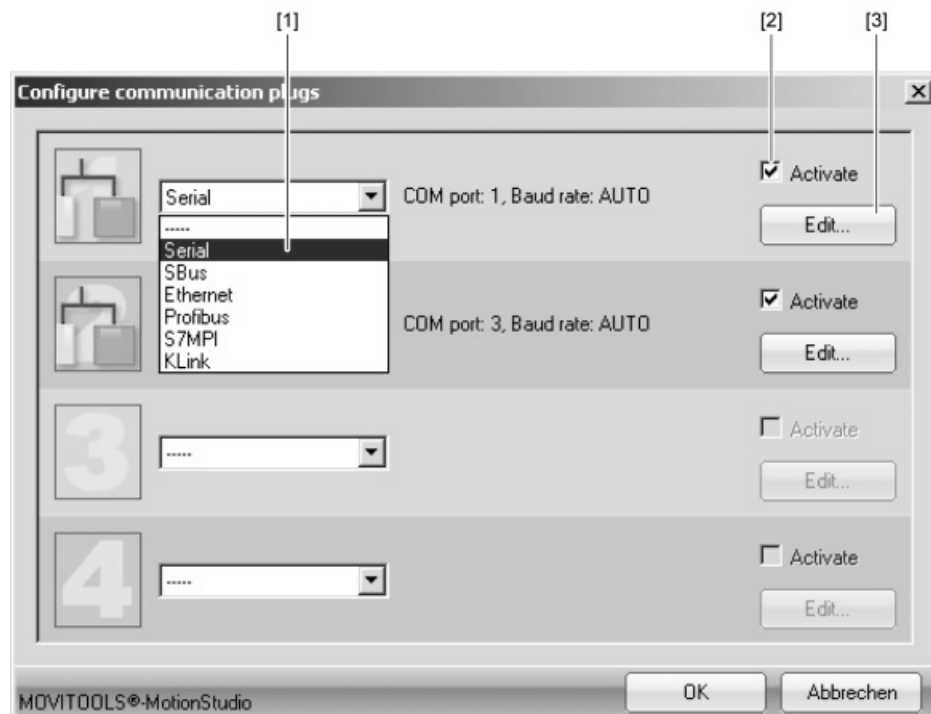
1. Press the button [Configure communication plugs] [1] located in the toolbar.



[1]

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This will open the "Configure communication plugs" window.



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2. From the list [1], select "Serial" as the communication type.  
In the example, "Serial" is activated as the communication type for the first communication channel [2].



3. Press the [Edit] button [3] on the right side of the "Configure communication plugs" window.

This will display the settings for the "serial" communication type.



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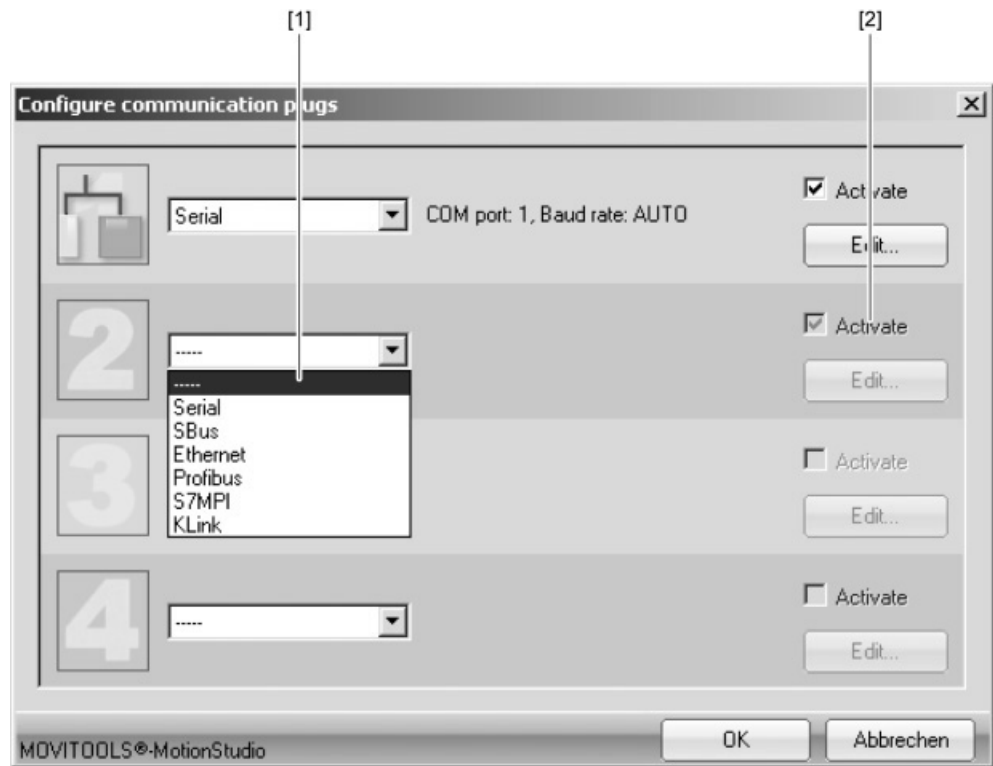
4. It might be necessary to change the preset parameters on the tab pages [Basic settings] and [Extended settings]. When doing so, refer to the detailed description of the parameters (see page 65).





*Removing a communication channel*

1. Select the menu items [Network] / [Communication plugs].  
This will open the "Configure communication plugs" window.



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2. From the list [1], select "----" to remove the current communication channel.  
This will gray out the "Activate" control field [2] on the right side of the window.



### 7.3.4 Step 3: Scanning the network (unit scan)

Proceed as follows to scan the network (unit scan):

1. Press the [Start network scan] button [1] found in the toolbar (see page 30).



[1]

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Then, your computer will recognize all units that are physically connected and accessible online.

2. If the scan does not run correctly, change the communication settings for the SEW Communication Server (see page 60).

### 7.3.5 Step 4: Project planning for units (using project management)

Proceed as follows to plan projects for units using project management:

1. Before you start project planning for units, become familiar with project management (see page 45):
2. Know which units you would like to configure.
  - Configuring new units (see page 51)
  - Configuring existing units in the network (see page 55)



### 7.3.6 Step 5: Configuring units using tools

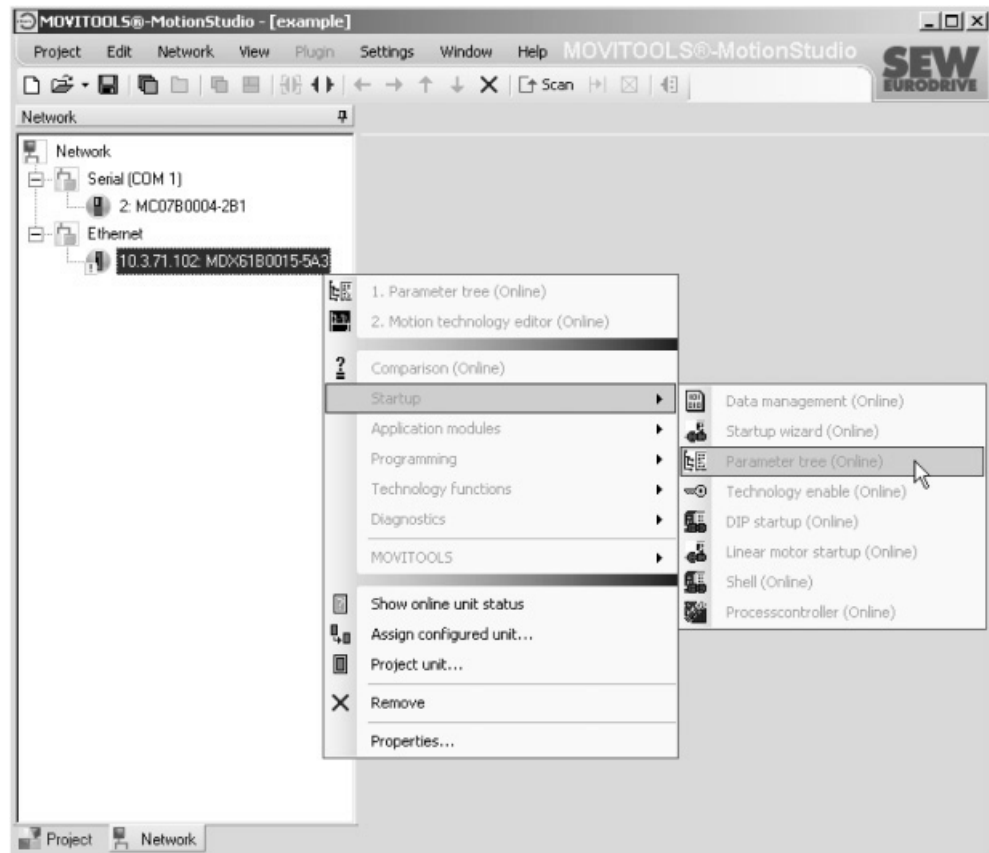
*Prerequisite*

You can use tools to configure units in either the offline or online mode. As an example, this section describes the procedure using the "parameter tree" tool. You will know how to change unit parameters online and, also, how to save the modified unit parameters within project management. This is a prerequisite for editing the unit parameters in the offline mode, if required.

*Changing unit parameters online*

Proceed as follows to change unit parameters online:

1. Select the online mode.
2. Select the unit you want to configure. You can perform this activity in any view.
3. Right-click to open the context menu and display the tools for configuring the unit.



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The example shows the context menu with the tools for a MOVIDRIVE® unit. The communication mode is set to "online" and the unit is scanned in the network view (step 3).



4. Select a tool (see page 88) (e.g. the parameter tree) to configure the unit.



### NOTE

Make sure that all changes are directly transferred to the unit in the online mode.

#### *Saving unit parameters in project management*

Proceed as follows to save unit parameters in the project management:

1. Select the unit you changed online.
2. Transfer the unit parameters to the working memory. In the context menu, select the command [Manage unit] / [Parameter upload].

You will then see a mini symbol, informing you that the unit parameters in the working memory have been changed since the last save.

3. Save your project.

Then you will see the following status:

- The asterisk following the project name in the title bar disappears.
- The mini symbol disappears.



## 8 Managing Projects

### 8.1 Overview

#### 8.1.1 Purpose of project management

Project management gives you the possibility to structure the units in such a way that they map the function in your machine/system. You can structure the units independent of the communication link.

#### 8.1.2 Advantages of project management

- Structuring the units according to the function in your machine/system
- Storing data in an organized manner
- Configuring a machine/system in the offline mode
- Easily comparing data of the units that are physically connected and accessible online with data of the configured units
- Using the same (configured) units with different communication links

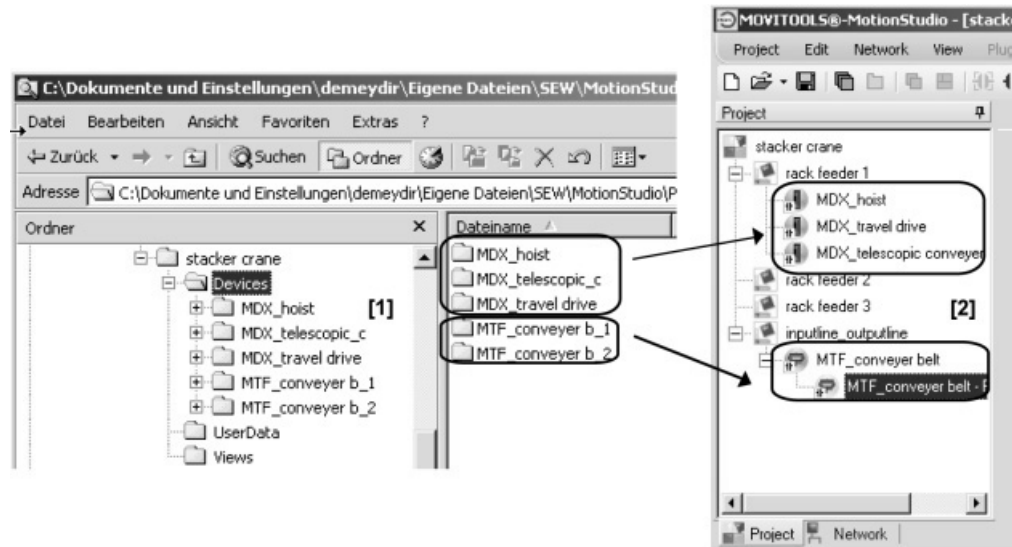


### 8.1.3 Project directories and file storage

MOVITOOLS MotionStudio® creates a directory structure for every project. This structure stores the following files.

- Files containing all parameters and configuration data of the units
- Files containing information from both views (see page 32)

The following figure shows you the directory structure and the corresponding image of the units in the project view. A high-bay warehouse was configured as an example.



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Position	Description
[1]	Directory structure from the Internet Explorer view
[2]	Units in the project view of MOVITOOLS® MotionStudio



#### 8.1.4 Managed objects

Project management manages the following three data objects for each unit:

- A. Basic data on the unit:
  - Signature
  - Unit type (e.g. MOVIDRIVE®)
  - Firmware
- B. Unit parameter
- C. Communication link for the unit:
  - Medium (e.g. SBus)
  - Unit address

#### 8.1.5 Synchronizing a project

The "Synchronize project" function combines the functions "parameter download" and "parameter upload".

Use the "Synchronize project" function after updating firmware or replacing units.

The unit parameters will be transferred from the parameter file to the unit that can be accessed online (parameter download). Next, all information is transferred from the unit that can be accessed online back to the parameter file (parameter upload).

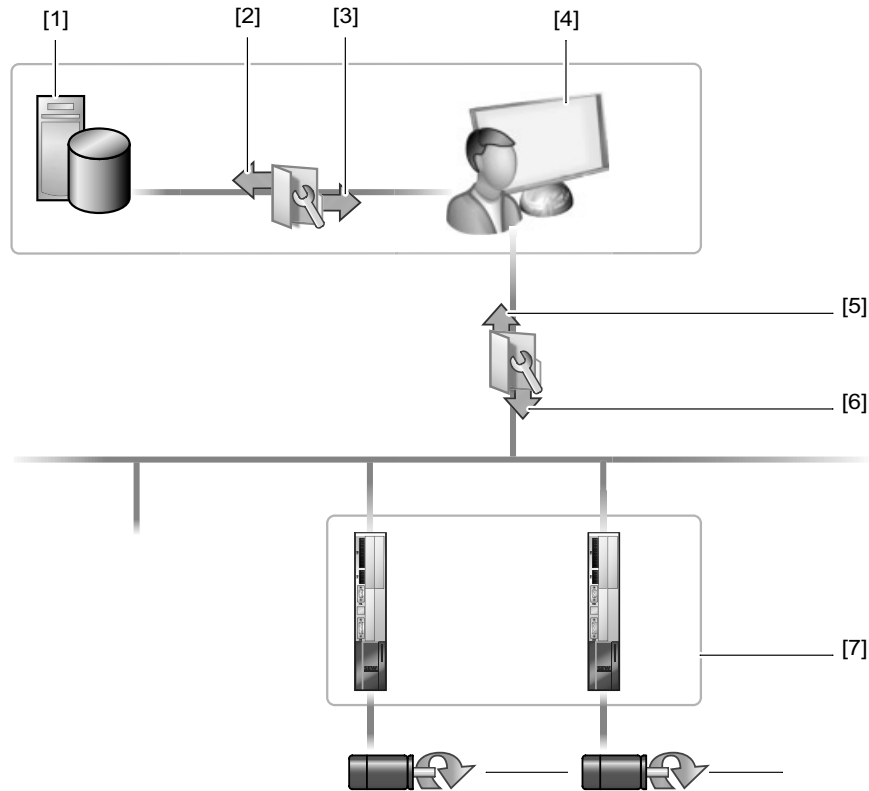
Uploading a parameter makes sure that the information stored in the unit is also recognized by the project through the new firmware.



#### 8.2 Managing unit parameters (phases)

Before starting the following process, make sure that the configured units are also physically connected and available online.

The figure illustrates the phases in which the project management of MOVITOOLS® MotionStudio manages the unit parameters.



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Phase	Designation	Description
1	Load	For every unit [7] that you configure, MOVITOOLS® MotionStudio creates a parameter file based on the standard parameters for this unit type. MOVITOOLS® MotionStudio stores this parameter file on the hard disk [1] in the project directory. When you open the project, MOVITOOLS® MotionStudio loads [3] the unit parameters from the parameter file onto the hard disk. The content of this parameter file is transferred by MOVITOOLS® MotionStudio to the working memory [4].
2	Upload	Changes made using online tools affect <b>ONLY</b> the unit. <ul style="list-style-type: none"> <li>By uploading [5], you can transfer the changes to the working memory [4].</li> </ul>
3	Download	Changes made using offline tools affect <b>ONLY</b> the working memory [4]. <ul style="list-style-type: none"> <li>By downloading [6], you can transfer the changes to the unit.</li> </ul>
4	Save	The change to the working memory [4] compared to the parameter file is displayed by a mini symbol. <ul style="list-style-type: none"> <li>Save your project [2].</li> </ul> <b>Result:</b> Your changes are continuously saved in the parameter files of the modified units. The mini symbol disappears.

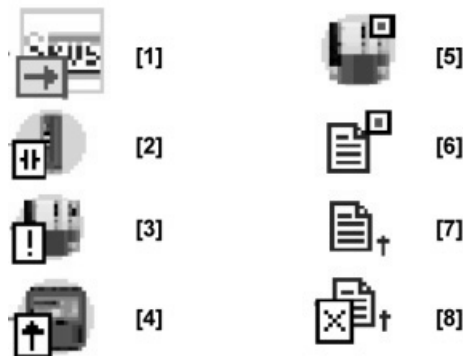




### 8.3 Meaning of the symbols on the units

#### 8.3.1 Overview

The mini symbols indicate the node status. The figure shows the different types of mini symbols:



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#### 8.3.2 Meaning of the mini symbols (node status)

The following table shows the mini symbol, the view in which the symbol appears, and node status they represent.

You will also receive a recommendation on how to proceed, independent of the node status.

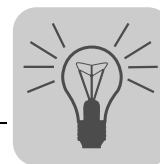
Mini symbol	View	Node status	Recommendation on how to proceed
[1]	Network view	<b>Unit scan active:</b> Indicates that the unit under this media node is currently being scanned.	<ul style="list-style-type: none"> <li>Wait until the unit scan is complete.</li> </ul>
[2]	Project view	<b>No communication link available:</b> This indicates that the unit was configured but is not yet available in the current network.	<ul style="list-style-type: none"> <li>If you need a communication link for your task, follow the instructions described in section "Step 2: Add configured units to the network" (see page 53). <b>Result:</b> The mini symbol disappears.</li> </ul>
[3]	Network view	<b>Node is not configured:</b> This indicates that the unit is available in the current network but is not yet configured.	<ul style="list-style-type: none"> <li>If you need to configure a node for your task, follow the instructions described in section "Configuring existing units in the network" (see page 55). <b>Result:</b> The mini symbol disappears.</li> </ul>
[4]	Network view	<b>Several communication links available:</b> <ul style="list-style-type: none"> <li>This indicates that the unit can be accessed through several communication channels.</li> <li>The mini symbol appears for the unit which is <b>NOT</b> configured as the "standard communication link".</li> </ul>	<ul style="list-style-type: none"> <li>If you need to change the standard communication link, do so in the context menu under [Set as standard communication link].</li> </ul>
[5]	Project view / Network view	<b>Unit parameters have been changed:</b> This indicates that the unit parameters in the working memory are different from the content of the parameter files stored on the hard disk. The reasons for this are as follows: <ul style="list-style-type: none"> <li>You changed your project offline since you last saved.</li> <li>You uploaded the parameters.</li> </ul>	<ul style="list-style-type: none"> <li>Save your project. <b>Result:</b> The mini symbol disappears.</li> </ul>
[6]	Project view	<b>Unit-independent parameter file has been changed:</b> This indicates that the unit parameters in the working memory are different from the content of the parameter files stored on the hard disk. The reason for this is the following: <ul style="list-style-type: none"> <li>You changed your parameter file offline since you last saved.</li> </ul>	<ul style="list-style-type: none"> <li>Save your project. <b>Result:</b> The mini symbol disappears.</li> </ul>



## Managing Projects

### Meaning of the symbols on the units

Mini symbol	View	Node status	Recommendation on how to proceed
[7]	Project view	<b>Unit-independent parameter file included as link:</b> This indicates that you have included the parameter file as a link in the project.	<b>Important:</b> In this case, the program does not create a copy of the parameter file in the project. This means that you overwrite the original file (in the original directory) when you change the parameter file.
[8]	Project view	<b>Unit-independent parameter file not found:</b> <ul style="list-style-type: none"> <li>This indicates that the parameter file included in the link was not found at the location that was referred to.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure that the original file has not been deleted or moved.</li> </ul>



## 9 Working with Units and Parameter Files

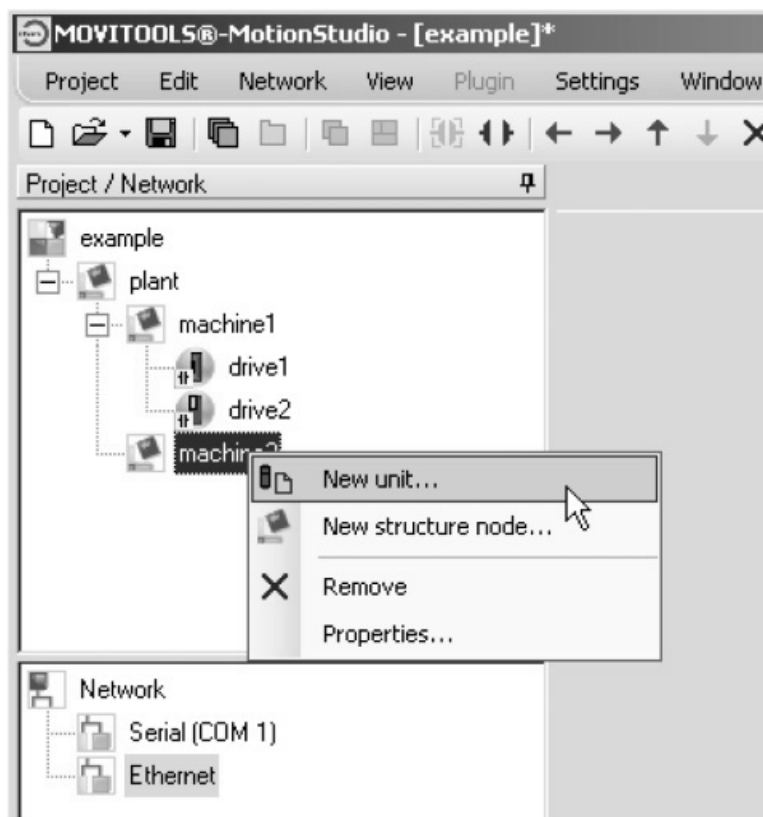
### 9.1 Configuring units

#### 9.1.1 Configuring new units

Step 1:  
Add new units to  
the project view

Proceed as follows to configure new units:

1. Switch to the project view using the "Project view" tab.
2. Use structure nodes to arrange a logical structure that represents your system.
3. Add a new unit. Select the [New unit] command in the context menu.



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This opens the "Create new unit" wizard.



- Click the "Configure a unit offline" button.



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#### NOTE

If you have already configured units and would like to transfer the parameter files for these units to the new project, proceed as follows:

- Click the [Create unit using parameter file] button.

- Follow the wizard instructions.

The new unit is then added under the configured structure node. The configured unit does not yet have a communication link in the network. This is displayed by a mini symbol.

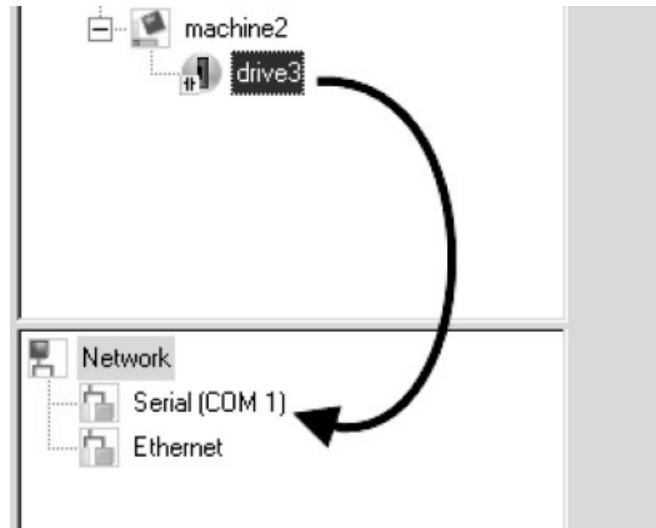
- Perform the following steps to add the configured unit to the network.



**Step 2:**  
*Add the configured unit to the network*

Proceed as follows to add the configured unit to the network:

1. Switch on both views. Select [View] / [Views] / [Combine Views].
2. Drag the configured unit from the project view into a media node in the network view (drag and drop).



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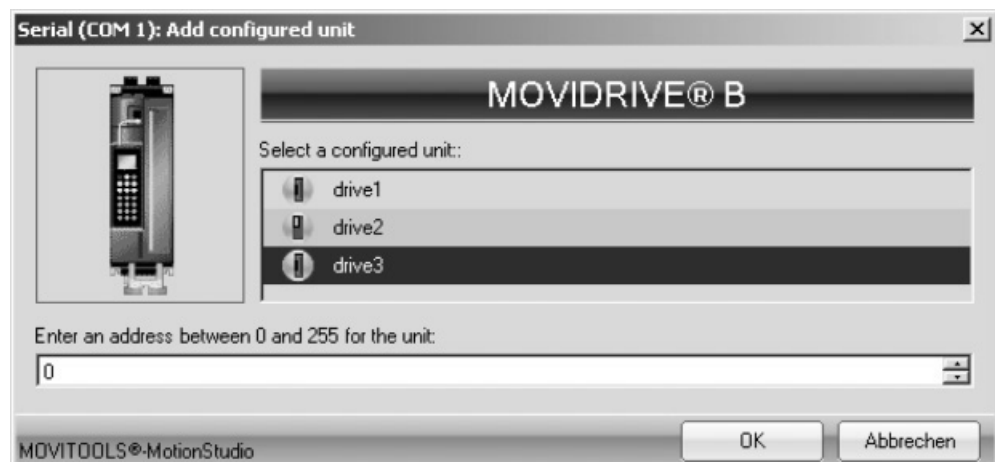


**NOTE**

There is also another way to perform this step.

- Select the affected media nodes (e.g. serial) in the network view.
- In the context menu, select the [Add configured unit] command.

3. Assign a valid address in the network to the newly configured unit.



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The configured unit will now have a communication link in the network. For this reason, the mini symbol on the unit node disappears in the project view.

4. Install the configured units in the network.



*Step 3:  
Transfer  
parameters  
modified offline  
to the unit*

Proceed as follows to transfer the parameters modified online to the unit:



#### NOTE

Observe the following if you modified parameters offline:

The modified parameters are now active **ONLY** in the working memory of MOVITOOLS® MotionStudio.

1. Save your project to permanently save the modified parameters in the parameter file.  
Then you will see the following status:
  - The asterisk following the project name in the title bar disappears.
  - The mini symbol disappears.
2. Select the unit.
3. Transfer the parameters you modified offline to the installed unit. In the context menu, select the command [Manage unit] / [Parameter download].  
The parameter file is then transferred to the installed unit.



#### NOTE

If you would like to transfer the parameter files from **ALL** or several units, proceed as follows:

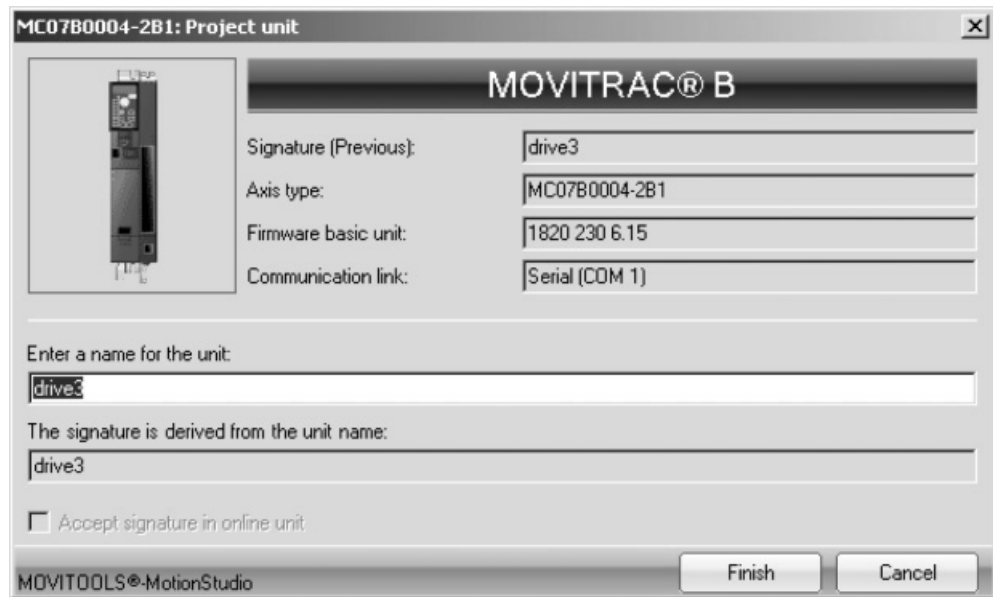
- Select the corresponding node in the project view:
  - Project node for all units
  - Structure node (under project node) for all units it contains
- Transfer the parameter files you modified offline to the unit. In the context menu, select the command [Download all parameter files].



### 9.1.2 Configuring existing units in the network

Proceed as follows to configure existing units in the network:

1. Switch to the network view using the "Network view" tab.
2. Perform a unit scan.  
This will display all units that are physically connected and accessible online.
3. Select the unit you want to configure.
4. Drag the scanned unit from the network view into project view (drag and drop) or select the [Project unit] command from the context menu.



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This opens the "Project unit" window.

5. Use the name (signature) of the unit that is accessible online.



#### NOTE

Proceed as follows if you do **NOT** want to transfer the name (signature) from the unit that is available online.

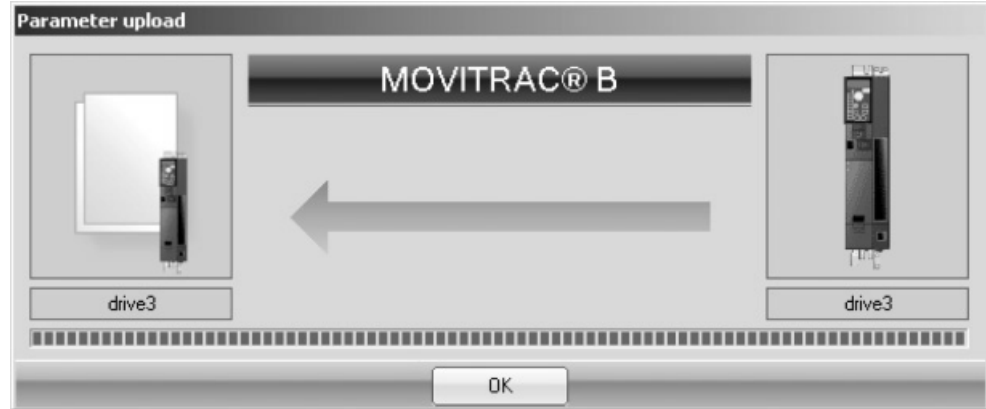
- Enter a new signature.
- Activate the "Accept signature in online unit" control field.

Make sure that the unit can be clearly identified for future use.



6. Press [Finish].

Then the parameter is transferred from the unit, which can be accessed online, to the working memory.



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7. Press [OK].

The mini symbol on the unit node will then disappear in the network view.

8. Save your project.

The parameter is then transferred from the working memory to the parameter file where it is permanently saved.

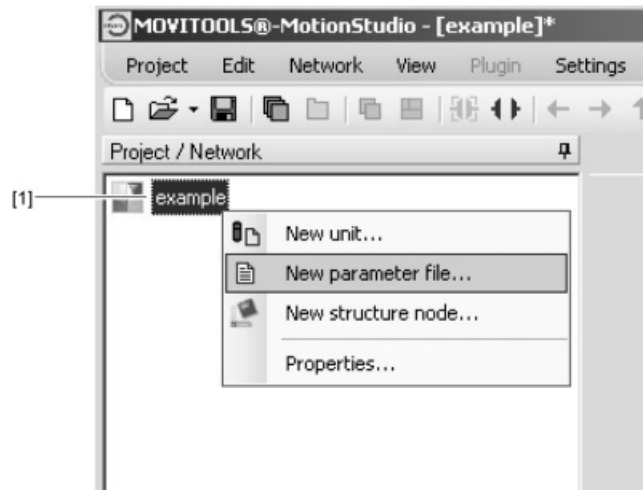




## 9.2 Editing the unit-independent parameter file (offline)

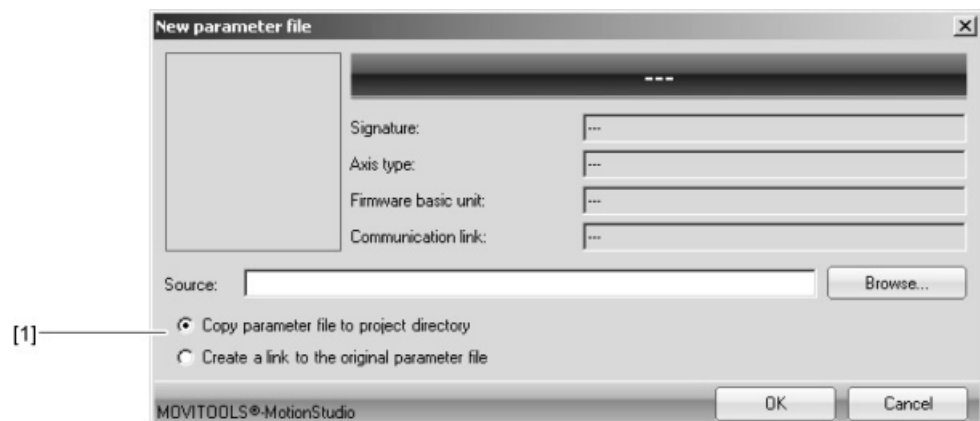
Proceed as follows to edit a unit-independent parameter file:

1. Open an existing project using [Project] / [Open] or create a new project with [Project] / [New].
2. Proceed as described in section "Creating a project and network" (see page 38).
3. Select the structure node [1].



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4. In the context menu, select the [New parameter file] command.  
This opens the "New parameter file" window.
5. Press the [Browse] button.



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## Working with Units and Parameter Files

### Editing the unit-independent parameter file (offline)

---

6. Change the file type for the unit selection in the dropdown menu, if necessary.

7. Select your parameter file and the following option [1]:

- Copy parameter file to project directory (default setting) or
- Create a link to the original parameter file

8. Press [OK].

This will copy the selected parameter file to the project directory or create a link to the original parameter file.



#### NOTE

The tools for editing the parameter file are offline tools.

- Switch to offline mode.

9. Select the parameter file you would like to edit and, from the context menu, the tool you wish to use.



### 9.3 Using data management to transfer parameter files

#### 9.3.1 Overview

Using data management, you can transfer an entire parameter set.

There are two ways in which you can transfer the parameter set:

- Transfer an existing parameter file to a unit available online  
Or transfer all parameters of a unit available online to a parameter file

#### 9.3.2 Using data management

The following steps illustrate how you can use data management to transfer an existing parameter file to a unit available online.



#### NOTE

If you use data management, you are responsible for organizing the file storage.

- Transfer the parameter sets within the project management, as far as is possible.

1. Select the "online" communication mode.
2. Select the unit.
3. In the context menu, select the command [Startup] / [Data management].
4. Select the parameter file.
5. Transfer the parameter file to the unit by pressing the [Download] button.

This will display information in the status window about the progress of the data transfer.



## 10 Working Locally and Remotely

### 10.1 Local

#### 10.1.1 Setting up communication for the SEW Communication Server (SECOS)

Proceed as follows to set up communication for the SEW Communication Server (SECOS):

1. Select the menu item [Settings] / [Options].
2. Press the [Communication] button.
3. Determine the communication for the SEW Communication Server. Refer to the following table:

Communication setting	Description	Note
Scan range level 1	The unit is scanned up to this highest address.	By entering values here, you can limit the scan range and thereby shorten the length of time it takes to scan the unit.
Scan range level 2	The unit is scanned up to this hierarchy level within the network.	
Communication timeout	Waiting time in [ms] that the client waits for a reply from the server after it has made a request <ul style="list-style-type: none"> <li>• Client = MOVITOOLS<sup>®</sup> MotionStudio</li> <li>• Server = SEW Communication Server</li> </ul>	Default setting: 5000 ms
Automatic baud rate detection (serial)	<ul style="list-style-type: none"> <li>• If, under [Network] / [Communication plugs] / [Serial], you have set "AUTO", the units are scanned in succession with both baud rates.</li> <li>• The unit scan begins with the baud rate that you set under starting value.</li> </ul>	Set the starting value for automatic baud rate detection.



#### NOTE

Make sure that the communication timeout for the SEW Communication Server is set higher than the timeout for the communication channel (e.g. Ethernet timeout).



### 10.1.2 Setting up the cyclic availability test

In the default setting, the cyclic availability test does not run automatically. If you activate the cyclic availability test, the units are permanently triggered. If for any reason the communication to a unit is broken, you will be notified. The color of the affected unit node changes from green to red.

Proceed as follows to set up the cyclic availability test.

1. Select the menu item [Settings] / [Options].
2. Press the [Online mode] button.
3. Set up the cyclic availability test for the SEW Communication Server. Refer to the following table:

Communication setting	Description	Note
Cyclic availability test	Execute automatically	All network units are cyclically scanned if they are still available. Default setting for the request interval: 100 ms
	Do not execute automatically	The cyclic availability test is switched off (default setting).



#### NOTE

The shorter the time interval you choose for the cyclic availability test, the more you increase the bus load.



## 10.2 Remote

### 10.2.1 Setting up communication settings for remote operation

Remote operation allows several clients to direct queries to a server. The clients need to have MOVITOOLS® MotionStudio installed to use this feature. Only the SEW Communication Server needs to be installed on the server.

To be able to use remote operation, you must make communication settings on the server and client.

### 10.2.2 Step 1: Set up communication on the server

Proceed as follows to set up communication on the server:

1. Launch the SEW Communication Server.

You can do this by double-clicking the icon on the task bar.



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2. Enter "default" as the password.
3. Determine which clients are allowed access. Open the tap page [Options] / [Settings] / [Remote Access].

You have the following options:

- Allow all clients access
  - Allow certain clients access
4. If only certain clients are allowed access, enter the IP addresses by opening the context menu in the free field and selecting the command [Add station].
  5. Allow the available communication types to be displayed. You can do so by selecting [Tools] / [Plug configuration].

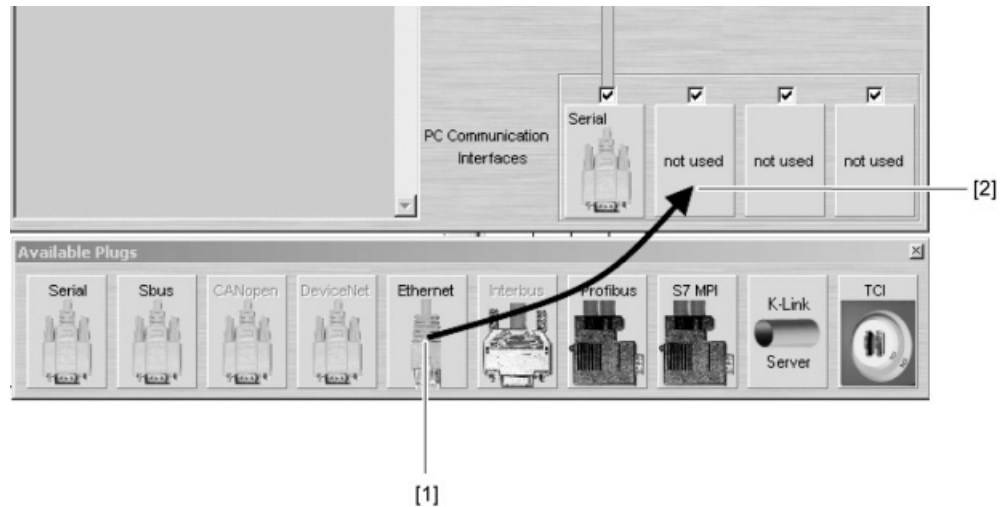


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Then a window will open that contains the available communication types.



- Use the mouse to drag a communication type (Ethernet in this example) [1] to a free communication channel [2] (drag and drop).



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This will open a window that contains the input fields for the parameters.

- Change the parameters that are entered if necessary. When doing so, refer to the detailed description of the parameters:
  - Serial (RS-232, RS-485) (see page 65)
  - SBus (see page 68)
  - ETHERNET (see page 72)
  - PROFIBUS DP/DPV1 (see page 81)
  - S7-MPI (see page 85)



**NOTE**

Note the following information if you are working locally after remote operation:

Any change to the communication settings in MOVITOOLS® MotionStudio (locally) overwrites the communication settings that you made in the SEW Communication Server for remote operation.

- Check the communication settings in the SEW Communication Server before you switch from local operation to remote operation.



#### Notes on settings in MOVITOOLS® MotionStudio



#### NOTE

If you close MOVITOOLS® MotionStudio, the SEW Communication Server also shuts down (default setting). As a result, clients will not be able to establish a connection to the server or will lose their existing connection.

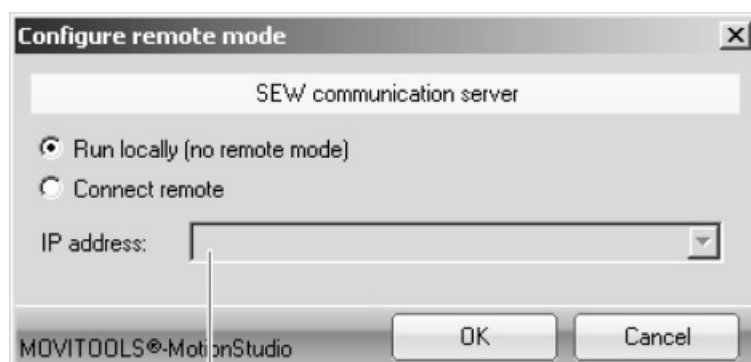
Proceed as follows if you want the SEW Communication Server to stay open when you close MOVITOOLS® MotionStudio:

- Deactivate the control field "Always exit with MOVITOOLS® MotionStudio" in the menu under [Settings] / [Options] / [Other].

#### 10.2.3 Step 2: Set up communication on the client

Proceed as follows to set up communication on the client:

1. Select [Network] / [Remote operation] from the menu bar.
2. Select "Connect remote".
3. Enter the IP address [1] of the PC on which the SEW Communication Server is installed.



[1]

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4. Press OK.





## 11 Communication Channels in Detail

### 11.1 Serial (RS-232, RS-485)

#### 11.1.1 Serial parameters

The following table describes the [basic setting] for the serial (RS-232, RS-485) communication channel:

Parameter	Description	Note
COM Port	Serial port connected to the interface adapter	<ul style="list-style-type: none"> <li>If there is no value entered here, the SEW Communication Server uses the first available port.</li> <li>A USB interface adapter is indicated by the addition of "(USB)".</li> </ul>
Baud rate	Transmission speed with which the connected PC communicates with the unit in the network via the communication channel	<ul style="list-style-type: none"> <li>Possible values:                             <ul style="list-style-type: none"> <li>9.6 kBit/s</li> <li>57.6 kBit/s</li> <li>AUTO (default setting)</li> </ul> </li> <li>Find the correct value for the connected unit in the documentation.</li> <li>If you set "AUTO", the units are scanned with both baud rates in succession.</li> <li>Set the starting value for automatic baud rate detection under [Settings] / [Options] / [Communication].</li> </ul>

The following table describes the [Extended setting] for the serial (RS-232, RS-485) communication channel:

Parameter	Description	Note
Parameter telegrams	Telegram with a single parameter	–
Multibyte telegrams	Telegram with several parameters	–
Timeout	Waiting time in [ms] that the master waits for a reply from a slave after it has sent a request	<ul style="list-style-type: none"> <li>Default setting: 100 ms (350 ms)</li> <li>Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Retries	Number of request retries after the timeout is exceeded	Default setting: 3



## 11.2 SBus

### 11.2.1 Configuring communication settings via SBus

You need an SBus connection between your PC and the units you want to configure. You can use a USB-CAN interface to make this possible.

Proceed as follows to configure SBus communication:

1. Press the button [Configure communication plugs] [1] located in the toolbar.

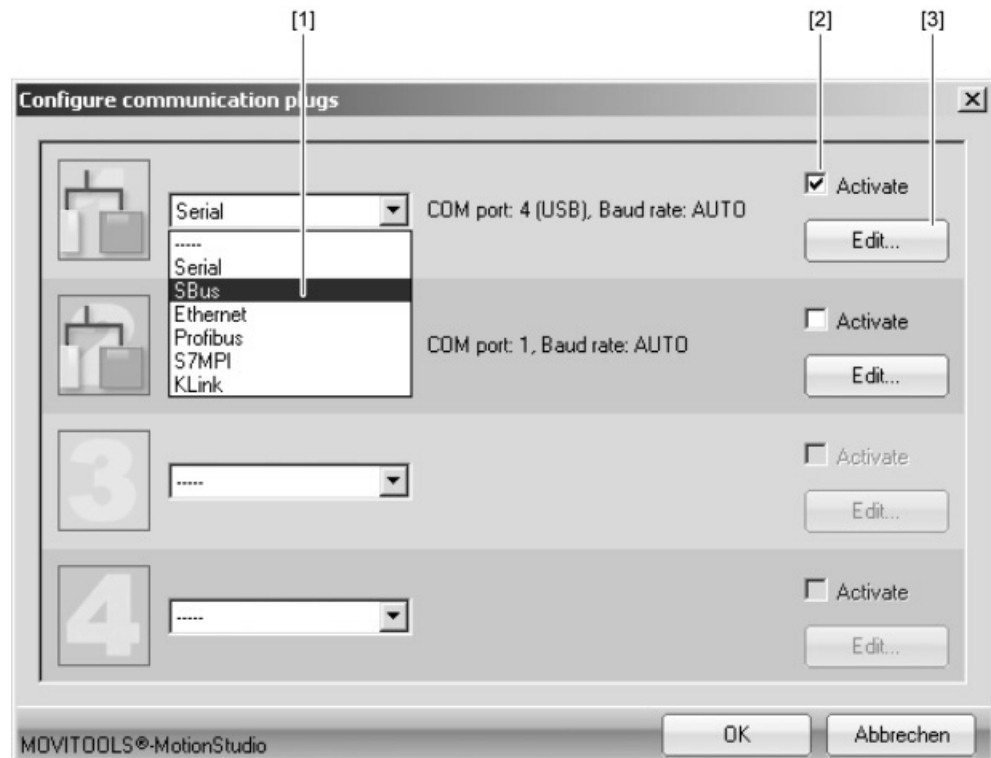


[1]

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This will open the "Configure communication plugs" window.

2. From the list [1], select "SBus" as the communication type.



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In the example, "SBus" is activated as the communication type for the first communication channel [2].



3. Press the [Edit] button [3] on the right side of the "Configure communication plugs" window.



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This will display the settings for the "SBus" communication type.

4. It might be necessary to change the preset parameters on the tab pages [Basic settings] and [Extended settings]. When doing so, refer to the detailed description of the parameters (see page 68).



#### 11.2.2 Parameters for SBus

The following table describes the [basic setting] for the SBus communication channel:

Parameter	Description	Note
Baud rate	Transmission speed with which the connected PC communicates with the unit in the network via the communication channel	<ul style="list-style-type: none"> <li>Possible values: <ul style="list-style-type: none"> <li>125 kbaud</li> <li>250 kbaud</li> <li>500 kbaud (default setting)</li> <li>1 Mbaud</li> </ul> </li> <li>The correct value depends on the total cable length of your network. You can find this value for the connected unit in the documentation.</li> <li>All connected units must have the same baud rate.</li> </ul>

The following table describes the [Extended setting] for the SBus communication channel:

Parameter	Description	Note
Parameter telegrams	Telegram with a single parameter	–
Multibyte telegrams	Telegram with several parameters	–
Timeout	Waiting time in [ms] that the master waits for a reply from a slave after it has sent a request	<ul style="list-style-type: none"> <li>Default setting: 100 ms (350 ms)</li> <li>Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Retries	Number of request retries after the timeout is exceeded	Default setting: 3



### 11.3 ETHERNET

#### 11.3.1 Configuring communication via ETHERNET

Proceed as follows to configure a communication channel for the ETHERNET:

1. Press the button [Configure communication plugs] [1] located in the toolbar.

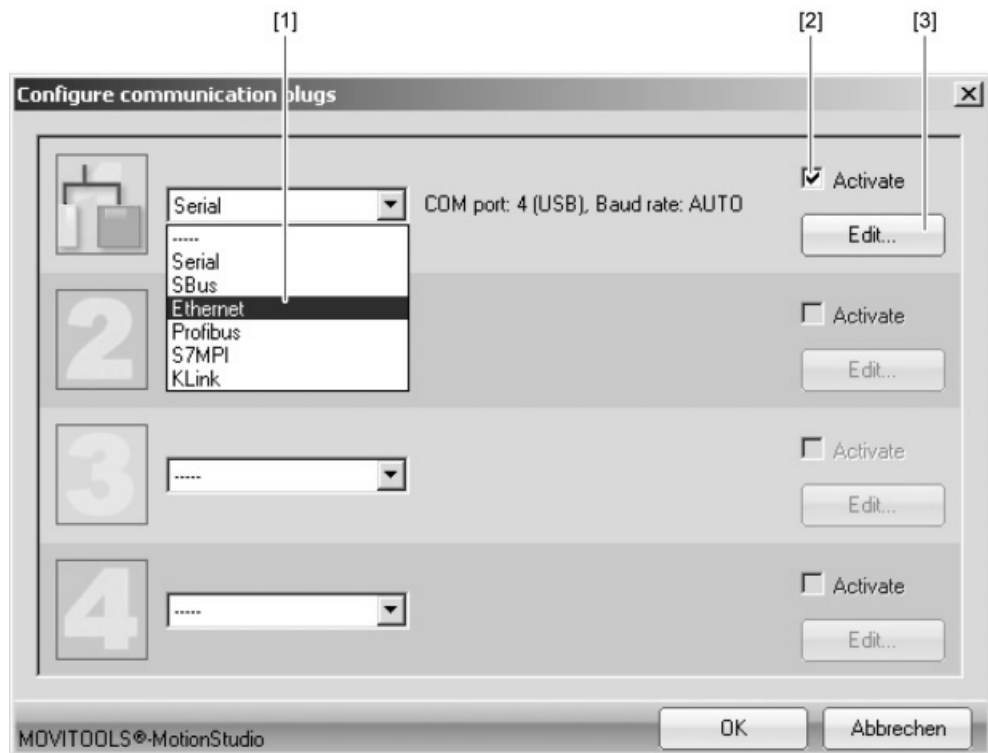


[1]

1133341835

This will open the "Configure communication plugs" window.

2. From the list [1], select "ETHERNET" as the communication type.



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In the example, "ETHERNET" is activated as the communication type for the first communication channel [2].



3. Press the [Edit] button [3] in the right section of the window.  
This will display the settings for the "ETHERNET" communication type.
4. Set up the protocol. Select one of the following buttons:
  - SMLP settings
  - EtherCAT settings
5. Set up the parameters. Follow the instructions described in the section "Setting parameters".

#### *Setting up the protocol*

Proceed as follows to set up a protocol for communicating via ETHERNET:

1. Select the menu items [Network] / [Communication plugs].
2. Select the "Ethernet" communication channel.
3. Press the [Edit] button.
4. Set up the protocol. Select one of the following buttons:
  - SMLP settings
  - EtherCAT settings



#### **NOTE**

**SMLP** stands for **S**imple **MOVILINK**<sup>®</sup> **P**rotocol. It is the unit protocol from SEW-EURODRIVE.

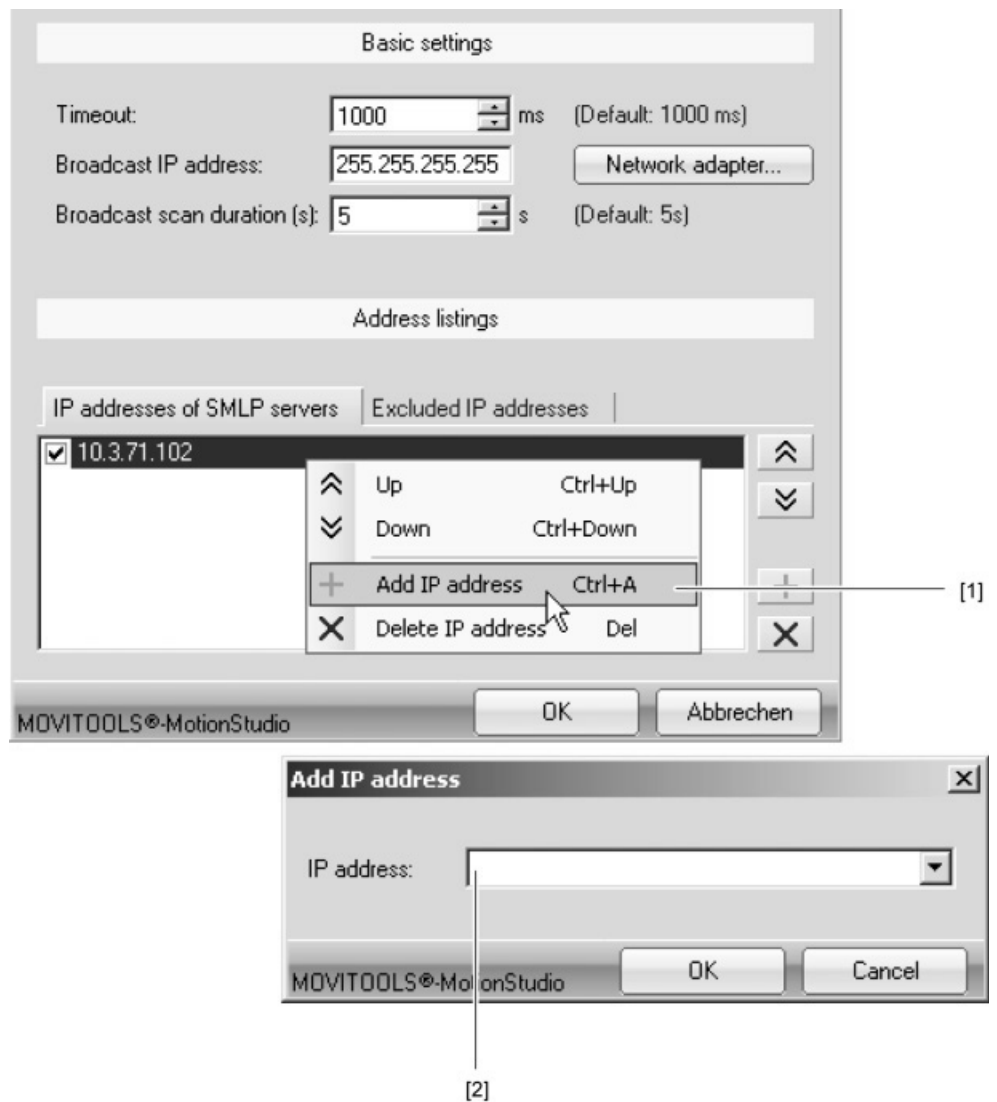


**Setting parameters** Proceed as follows to set up parameters for communicating via ETHERNET:

1. Change the parameters that are entered if necessary. When doing so, refer to the detailed description of the parameters (see page 72).

	<p><b>NOTE</b></p> <p>During a unit scan, the system recognizes only units that are in the same (local) network segment as the PC that is running MOVITOOLS® MotionStudio.</p> <ul style="list-style-type: none"> <li>• If you have units that are <b>OUTSIDE</b> the local network segment, add the IP addresses of these units to the list of SMLP servers.</li> </ul>
--	--

2. Add an IP address by opening the context menu and selecting [Add IP address] [1].





#### 11.3.2 Parameters for EtherCAT and SMLP

##### Parameters for EtherCAT

The following table describes the parameters for EtherCAT:

Parameter	Description	Note
Timeout	Waiting time in [ms] that the client waits for a reply from the server after it has made a request	<ul style="list-style-type: none"> <li>• Default setting: 1000 ms</li> <li>• Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Scan range of:	Start address for the EtherCAT scan range	By entering values here, you can limit the EtherCAT scan range and thereby shorten the length of time it takes to scan the unit.
Scan range up to:	Stop address for the EtherCAT scan range	
IP address EtherCAT master	IP address for the EtherCAT master	–

##### Parameters for SMLP

The following table describes the parameters for SMLP:

Parameter	Description	Note
Timeout	Waiting time in [ms] that the client waits for a reply from the server after it has made a request	<ul style="list-style-type: none"> <li>• Default setting: 1000 ms</li> <li>• Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Broadcast IP address	IP addresses of the local network segment <b>within</b> which the unit scan is carried out	In the default setting, the unit scan retrieves units that are in the local network segment only.
SMLP server IP addresses	IP address of the SMLP server or of other units that are to be included in the unit scan but are <b>outside</b> the local network segment	<ul style="list-style-type: none"> <li>• Enter the IP address of the SIMATIC S7 control here, if you are operating an indirect ETHERNET to PROFIBUS communication via SIMATIC S7.</li> <li>• Enter the IP address of units that are to be included in the unit scan but are <b>outside</b> the local network segment.</li> </ul>

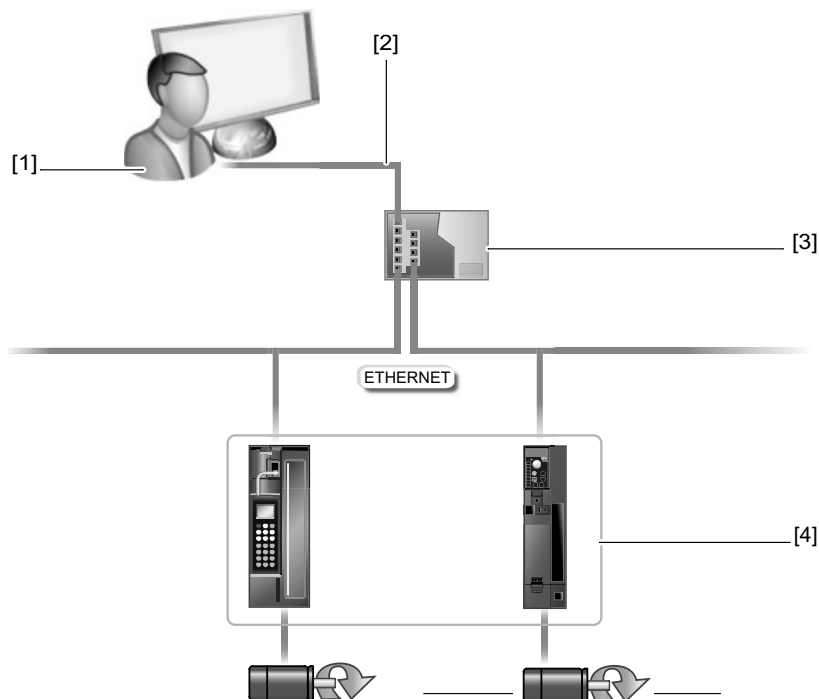




### 11.3.3 Direct communication

*Overview*

The figure shows the network with direct communication via ETHERNET:



1193501835

- [1] PC with ETHERNET TCP/IP interface
- [2] ETHERNET TCP/IP connection
- [3] Switch
- [4] Units (examples) with ETHERNET interfaces

*Function*

Parameter requests from MOVITOOLS® MotionStudio are transferred from a PC [1] with an ETHERNET TCP/IP interface to a switch [3] via the ETHERNET [2].

The parameter requests are then passed directly on to the ETHERNET interface of the units [4] from the switch [3].



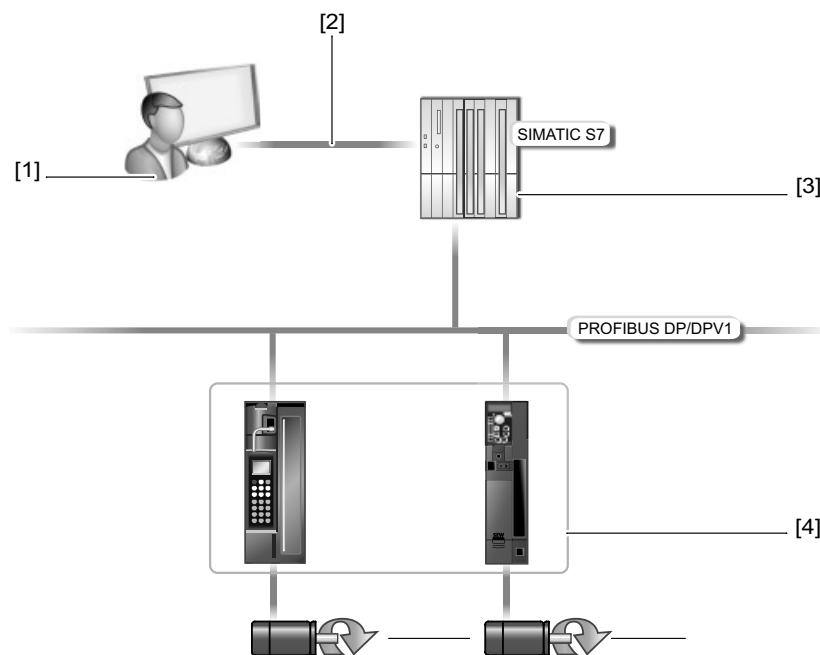
#### 11.3.4 Indirect ETHERNET to PROFIBUS communication via SIMATIC S7

##### Prerequisites

	<b>Note</b>
	<p>If you run and configure an ETHERNET connection to SIMATIC S7 in your network, you need additional hardware and software from Siemens.</p> <ul style="list-style-type: none"> <li>Note the prerequisites regarding license rights for additional Siemens software products.</li> </ul>
	<b>Note</b>
	<p>The following steps describe only how you can configure the ETHERNET connection to SIMATIC S7 in MOVITOOLS® MotionStudio.</p> <ul style="list-style-type: none"> <li><b>First</b> make all the required settings in the project planning software. Refer to the Siemens documentation and the "MOVITOOLS® – Connection to SIMATIC S7 via ETHERNET" manual for help.</li> </ul>

##### Overview

The figure shows the network with indirect (lower-level) ETHERNET to PROFIBUS communication via SIMATIC S7:



1194115467

- [1] PC with ETHERNET TCP/IP interface
- [2] ETHERNET TCP/IP connection
- [3] SIMATIC S7 with "SMLP Server" function module
- [4] Units (examples) with PROFIBUS interfaces



*Function*

Parameter requests from MOVITOOLS® MotionStudio are transferred from a PC [1] to a SIMATIC S7 [3] using ETHERNET TCP/IP interface via ETHERNET [2].

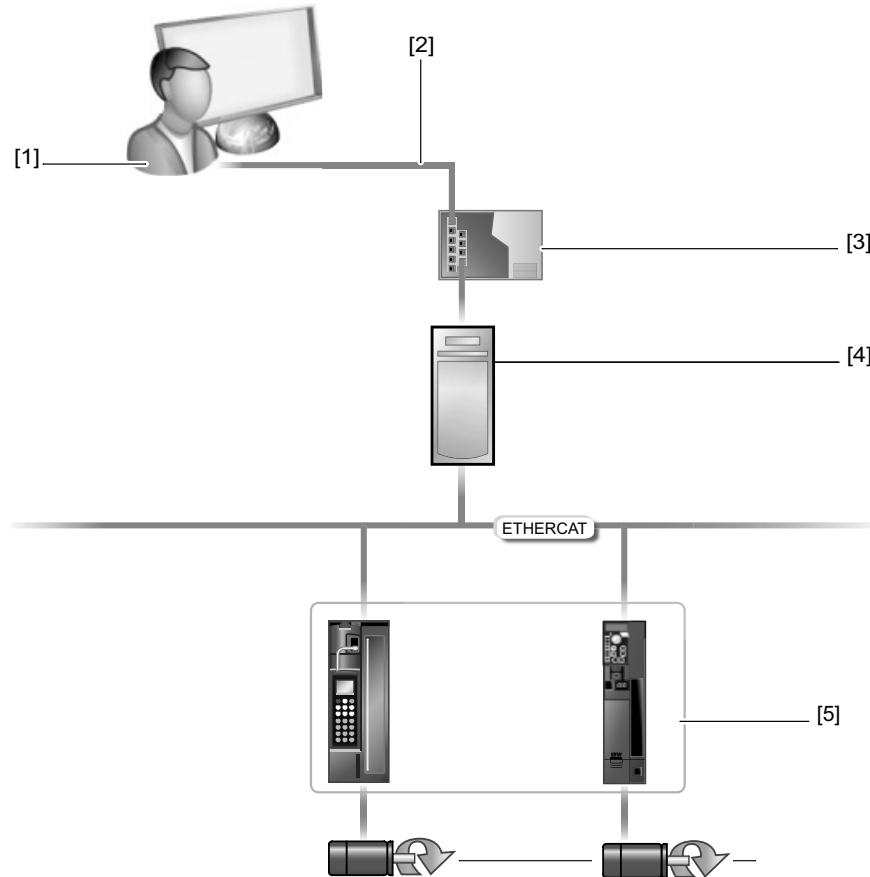
The SEW function module "SMLP Server" directs these parameter requests to the units via the lower-level PROFIBUS DP/DPV1. The SIMATIC S7 acts as a gateway from ETHERNET TCP/IP to PROFIBUS. The units [4] are PROFIBUS stations.



#### 11.3.5 Communication with EtherCAT

##### Overview

The figure shows the network with communication using EtherCAT:



1194147211

- [1] PC with ETHERNET TCP/IP interface
- [2] ETHERNET TCP/IP connection
- [3] Switch
- [4] PC with TwinCAT control, EtherCAT master and engineering interface
- [5] Units (examples) with EtherCAT interfaces



*Function*

Parameter requests from MOVITOOLS® MotionStudio are transferred from a PC [1] with an ETHERNET TCP/IP interface to a switch [3] via the ETHERNET [2].

Parameter requests are transferred from the switch [3] to the EtherCAT interfaces in the units [5] via a PC [4] with TwinCAT control and EtherCAT master.



**NOTE**

**Engineering interface**

You may not use non-assigned ETHERNET interfaces on units with EtherCAT interfaces for engineering.

- Use only the TwinCAT control interface intended for engineering.



#### 11.4 PROFIBUS DP/DPV1

##### 11.4.1 Configuring communication settings via PROFIBUS

###### Prerequisites

	<p><b>Note</b></p> <p>If you run and configure PROFIBUS stations in your network, you need additional hardware and software from Siemens.</p> <ul style="list-style-type: none"> <li>• Note the prerequisites regarding license rights for additional Siemens software products.</li> </ul>
	<p><b>Note</b></p> <p>The following steps describe only how you can configure PROFIBUS communication in MOVITOOLS® MotionStudio.</p> <ul style="list-style-type: none"> <li>• <b>First</b> make all the required settings in the project planning software. Refer to the Siemens documentation and the "DFP21B PROFIBUS DP-V1 fieldbus interface" manual for help.</li> </ul>

###### Configuring a communication channel via PROFIBUS

Proceed as follows to configure a communication via PROFIBUS:

1. Make sure that all the required settings have been made in the project planning software.
2. Start MOVITOOLS® MotionStudio and create a project following the instructions described in the section "First Steps".
3. Press the button [Configure communication plugs] [1] located in the toolbar.



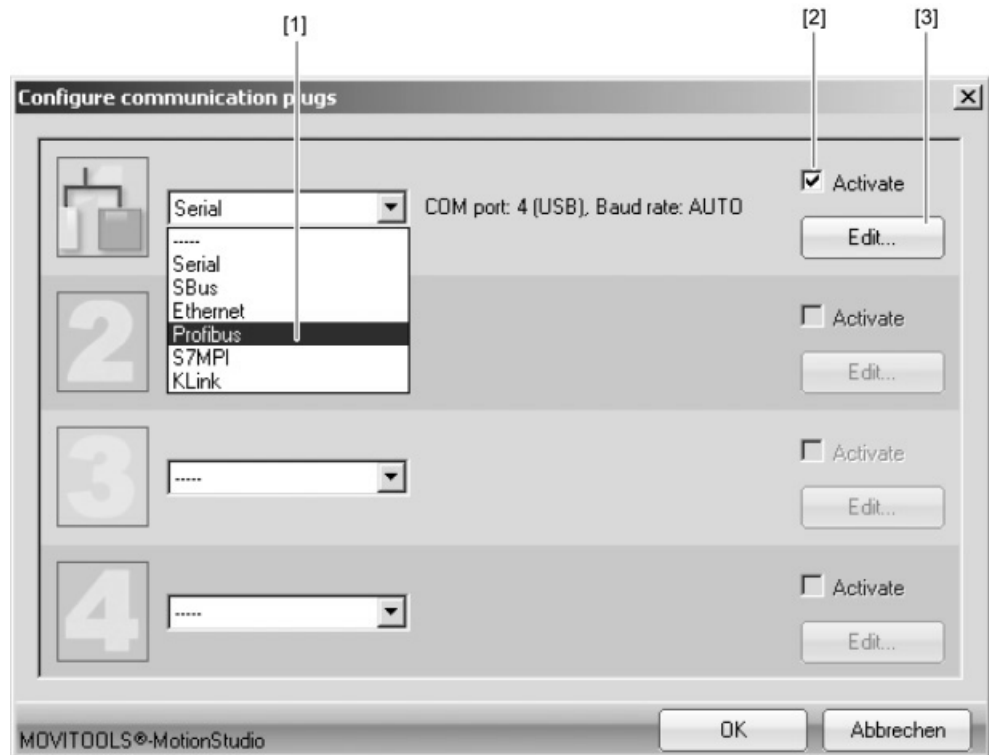
[1]

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This will open the "Configure communication plugs" window.



4. From the list [1], select "PROFIBUS" as the communication type.



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In the example, "PROFIBUS" is activated as the communication type for the first communication channel [2].



5. Press the [Edit] button [3] in the right section of the window.



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6. Select the "Start automatically" control field if you want to launch the PROFIBUS server every time the SEW Communication Server is started.
7. Click the [Restart server] button to start the PROFIBUS server.

WINDOWS displays the activated PROFIBUS server using the following ICON in the status bar:



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#### 11.4.2 Parameters for PROFIBUS DP/DPV1

The following table describes the parameters for the PROFIBUS DP/DPV1 communication channel:

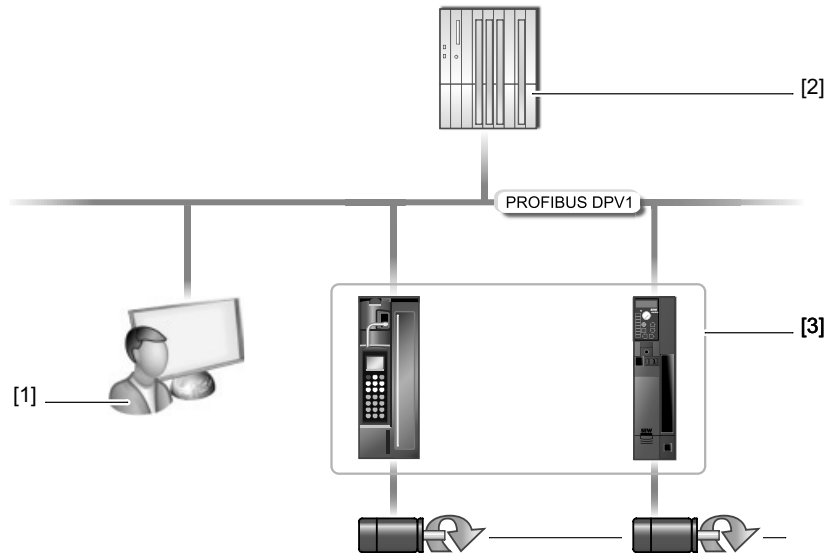
Parameter	Description	Note
PROFIBUS server	<ul style="list-style-type: none"><li>Select the "Start automatically" control field if you want to launch the PROFIBUS server every time the SEW Communication Server is started.</li></ul>	The WINDOWS status bar displays the active PROFIBUS server.



#### 11.4.3 Communication via C2 master

##### Overview

The figure shows the network with a direct PROFIBUS communication via C2 master:



1194109707

- [1] PC with PROFIBUS card (C2 master)
- [2] C1 master
- [3] Units (examples) with PROFIBUS interfaces that are DPV1-capable

##### Function

Parameter requests from MOVITOOLS<sup>®</sup> MotionStudio are transferred from a PC [1] to the PROFIBUS interfaces in the units [3] via the PROFIBUS.

In this case, SIMATIC S7 [2] does not perform any routing. The connected PC is equipped with additional hardware (PROFIBUS card) so that it can act as a PROFIBUS station (C2 master).

## 11.5 S7-MPI

### 11.5.1 Configuring communication settings via S7-MPI

#### Prerequisites



#### Note

If you run and configure S7-MPI stations in your network, you need additional hardware and software from Siemens.

- Note the prerequisites regarding license rights for additional Siemens software products.



**Note**

The following steps describe only how you can configure S7-MPI communication in MOVITOOLS® MotionStudio.

- **First** make all the required settings in the project planning software. Refer to the Siemens documentation and the "MOVITOOLS® – Connection to SIMATIC S7 via S7-MPI interface" manual for help.

*Configuring communication channel via S7-MPI*

Proceed as follows to configure a communication via S7-MPI:

1. Make sure that all the required settings have been made in the project planning software.
2. Start MOVITOOLS® MotionStudio and create a project following the instructions described in the section "First Steps".
3. Press the button [Configure communication plugs] [1] located in the toolbar.

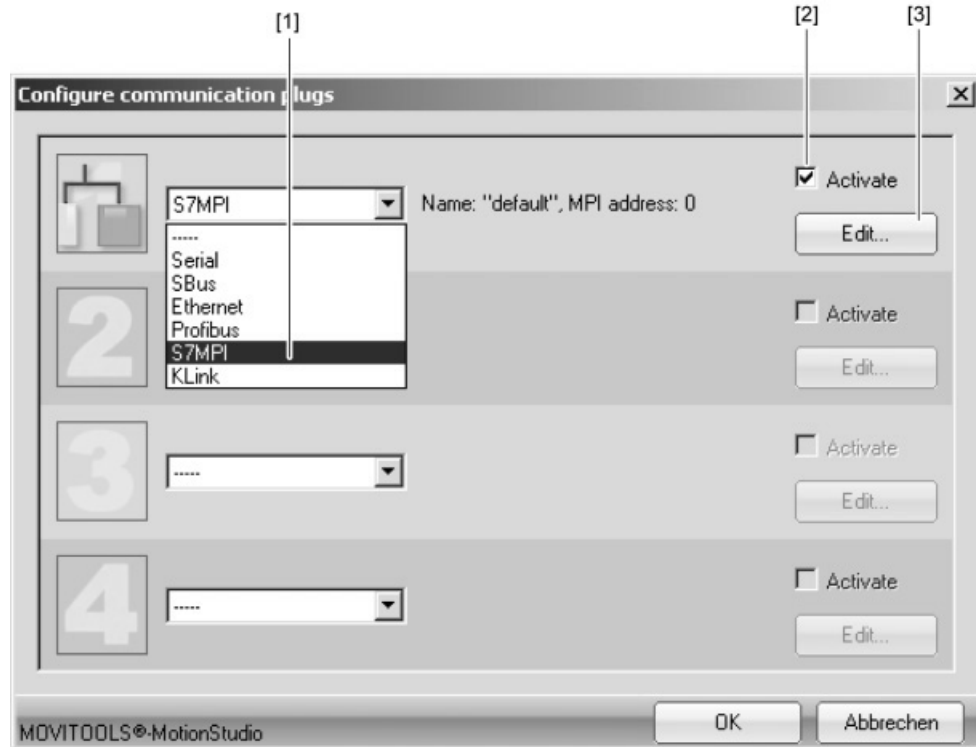


[1]

1133341835

This will open the "Configure communication plugs" window.

4. From the list [1], select "S7MPI" as the communication type.



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In the example, "S7-MPI" is activated as the communication type for the first communication channel [2].



5. Press the [Edit] button [3] in the right section of the window.

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This will display the settings for the "S7-MPI" communication type.

6. It might be necessary to change the preset parameters on the tab pages [Addressing] and [Extended settings]. When doing so, refer to the detailed description of the parameters (see page 85).



### Parameters for S7-MPI

The following table describes the [basic setting] for the S7-MPI communication channel:

Parameter	Description	Note
Name	Name of the S7-MPI station	If you communicate with several stations, you can give the stations self-explanatory names to help you differentiate between them.
MPI address	S7 MPI address for the SIMATIC S7	–
Segment ID	Segment ID for the SIMATIC S7	Default setting: 0
Slot	Number of the slot in the component rack, where the SIMATIC S7 CPU installs the S7-MPI interface	If required, count the modules to determine the number.
Rack	Number of component rack	Default setting: 0
Manual DB entry	Select "Create entry" if you want to manually enter the numbers of the communication data block (CDB) and the hardware data block (HDB).	If you enter the numbers manually, only these are taken into account in the unit scan.
Communication DB number	Number of the communication data block (CDB)	
Hardware DB number	Number of the hardware data block (HDB)	

The following table describes the [Extended setting] for the S7-MPI communication channel:

Parameter	Description	Note
Parameter telegrams	Telegram with a single parameter	–
Multibyte telegrams	Telegram with several parameters	–
Timeout	Waiting time in [ms] that the master waits for a reply from a slave after it has sent a request	<ul style="list-style-type: none"> <li>• Default setting: 1000 ms (3000 ms)</li> <li>• Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Retries	Number of request retries after the timeout is exceeded	Default setting: 3



#### 11.5.2 Parameters for S7-MPI

The following table describes the [basic setting] for the S7-MPI communication channel:

Parameter	Description	Note
Name	Name of the S7-MPI station	If you communicate with several stations, you can give the stations self-explanatory names to help you differentiate between them.
MPI address	S7 MPI address for the SIMATIC S7	–
Segment ID	Segment ID for the SIMATIC S7	Default setting: 0
Slot	Number of the slot in the component rack, where the SIMATIC S7 CPU installs the S7-MPI interface	If required, count the modules to determine the number.
Rack	Number of component rack	Default setting: 0
Manual DB entry	Select "Create entry" if you want to manually enter the numbers of the communication data block (CDB) and the hardware data block (HDB).	If you enter the numbers manually, only these are taken into account in the unit scan.
Communication DB number	Number of the communication data block (CDB)	
Hardware DB number	Number of the hardware data block (HDB)	

The following table describes the [Extended setting] for the S7-MPI communication channel:

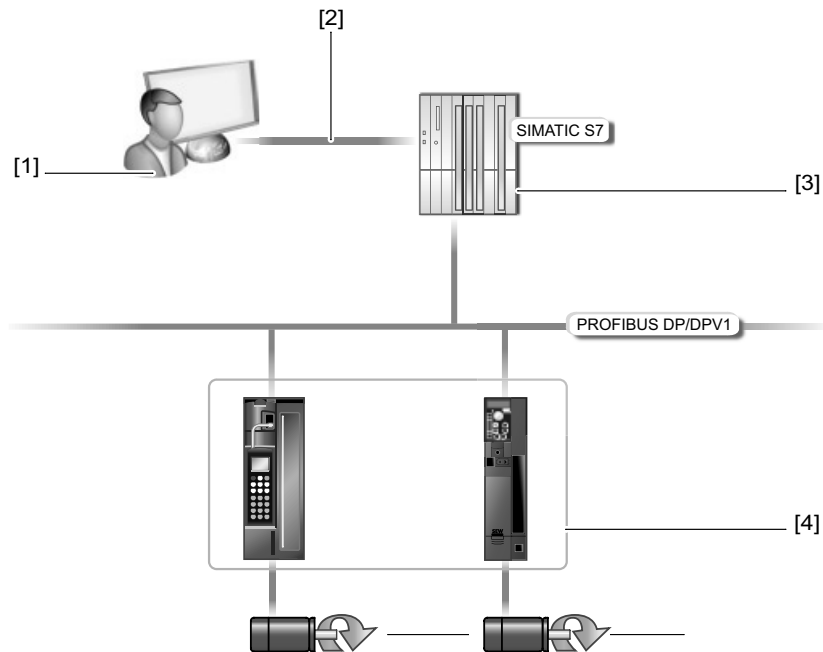
Parameter	Description	Note
Parameter telegrams	Telegram with a single parameter	–
Multibyte telegrams	Telegram with several parameters	–
Timeout	Waiting time in [ms] that the master waits for a reply from a slave after it has sent a request	<ul style="list-style-type: none"> <li>• Default setting: 1000 ms (3000 ms)</li> <li>• Increase the value as required if a delay in communication is causing malfunctions.</li> </ul>
Retries	Number of request retries after the timeout is exceeded	Default setting: 3



### 11.5.3 Indirect S7-MPI to PROFIBUS communication via SIMATIC S7

**Overview**

The figure shows the network with indirect S7-MPI to PROFIBUS communication via SIMATIC S7:



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- [1] PC with S7-MPI interface
- [2] S7-MPI connection
- [3] SIMATIC S7 with the *FC\_MoviTools* function
- [4] Units with PROFIBUS interfaces

**Function**

Parameter requests from MOVITOOLS® MotionStudio are passed on from a PC [1] with an S7-MPI interface to SIMATIC S7 [3] via the S7-MPI connection [2].

The SEW *FC\_MoviTools* function directs the parameter request to the PROFIBUS interfaces in the units via the PROFIBUS. The SIMATIC S7 acts as a gateway from S7-MPI to PROFIBUS. The units are PROFIBUS stations.







## 12 Configuring Units Using Tools

### 12.1 Functions and tools

Every function that you can perform with the MOVITOOLS® MotionStudio software package has a corresponding tool. The tools are provided in the context menu, and depend on the unit.

The following table shows which functions are assigned to which tool.

The technology functions are cross-functional.

Function	Tool	
Startup  1084565131	<ul style="list-style-type: none"> <li>Startup wizard (see page 89)</li> <li>Manual operation (see page 96)</li> </ul>	<ul style="list-style-type: none"> <li>Technology Editors (see page 99)</li> </ul>
Parameter setting  1084561419	<ul style="list-style-type: none"> <li>Parameter tree (see page 90)</li> <li>PDO Editor (see page 95)</li> <li>Shell (see page 97)</li> <li>Gateway configurator</li> </ul>	
Diagnostics and visualization  1084828555	<ul style="list-style-type: none"> <li>Application Builder (see page 97)</li> <li>Bus monitor (see page 98)</li> <li>Scope (see page 97)</li> <li>Status (see page 101)</li> </ul>	
Programming  1084568843	<ul style="list-style-type: none"> <li>Programming tools (see page 100)</li> </ul>	

### 12.2 Displaying supported unit types

Proceed as follows to display the supported unit types:

1. Select [Help] / [Installed components] from the menu.
2. Select the appropriate tool in the "Plug-ins" category.

In the upper right corner of the window, you will then see a list of unit types that are supported by these tools.





## 12.3 Tools in detail

### 12.3.1 Startup wizard

*Description of the Startup wizard*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Startup wizard	<ul style="list-style-type: none"> <li>Used to adjust the unit to the motors and encoders that are connected</li> <li>Used for optimizing the current, speed and position controller</li> <li>Use of the tools varies according to the unit type.</li> </ul>	See "Displaying supported unit types" (see page 88).

*Starting up the units (online)*

Proceed as follows to start up the units (online):

1. Switch to the network view.
2. Press the [Switch to online mode] button [1].



[1]

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3. Select the unit you want to startup.
4. Open the context menu and select the command [Startup] / [Startup].  
Then, the Startup wizard opens.
5. Follow the instructions of the Startup wizard and then load the startup data onto your unit.



**NOTE**

- For detailed information about the unit parameters, refer to parameter list for the unit.
- For detailed information about using the Startup wizard, refer to MOVITOOLS® MotionStudio online help.



### 12.3.2 Parameter tree

*Description of the parameter tree*

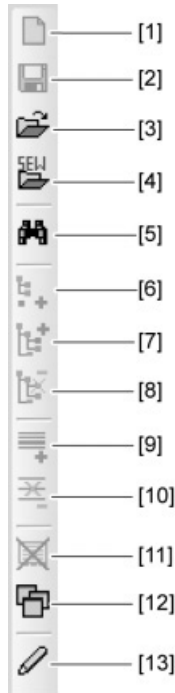
The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Parameter tree	<p>The parameter tree is a view. All unit parameters are grouped into folders in this view. You can open the folders and read/change individual unit parameters (see page 92). Using either the context menu or toolbar, you can manage the unit parameters as follows:</p> <ul style="list-style-type: none"> <li>• Comparing unit parameters (see page 93)</li> <li>• Searching for unit parameters</li> <li>• Creating and printing unit parameter documents (see page 93)</li> <li>• Grouping unit parameters into a new parameter tree (see page 94) to create individual views</li> </ul>	See "Displaying supported unit types" (see page 88).



Parameter tree toolbar

The following figure shows the toolbar for managing unit parameters:



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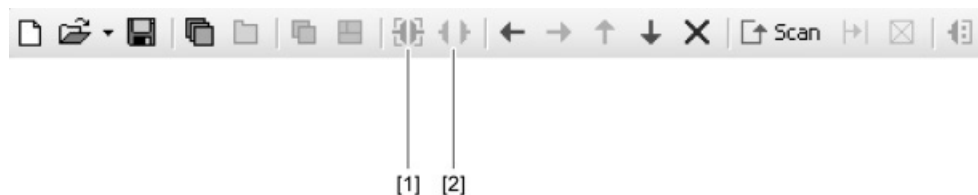
Position	Interface name	Function
[1]	New tree	Creates a new tree
[2]	Save parameter tree	Saves an individually created parameter tree
[3]	Open parameter tree	Opens an individually created parameter tree
[4]	Open standard parameter tree	Opens a SEW standard parameter tree
[5]	Search...	Searches the parameter tree
[6]	Add empty tree	Adds an empty tree
[7]	Add node	Adds an empty node
[8]	Delete node	Deletes a node
[9]	Add line	Adds lines
[10]	Delete line	Delete lines
[11]	Close all windows	Closes all windows
[12]	Show window	Displays all windows
[13]	Edit mode	Switches to edit mode



### Reading/changing unit parameters

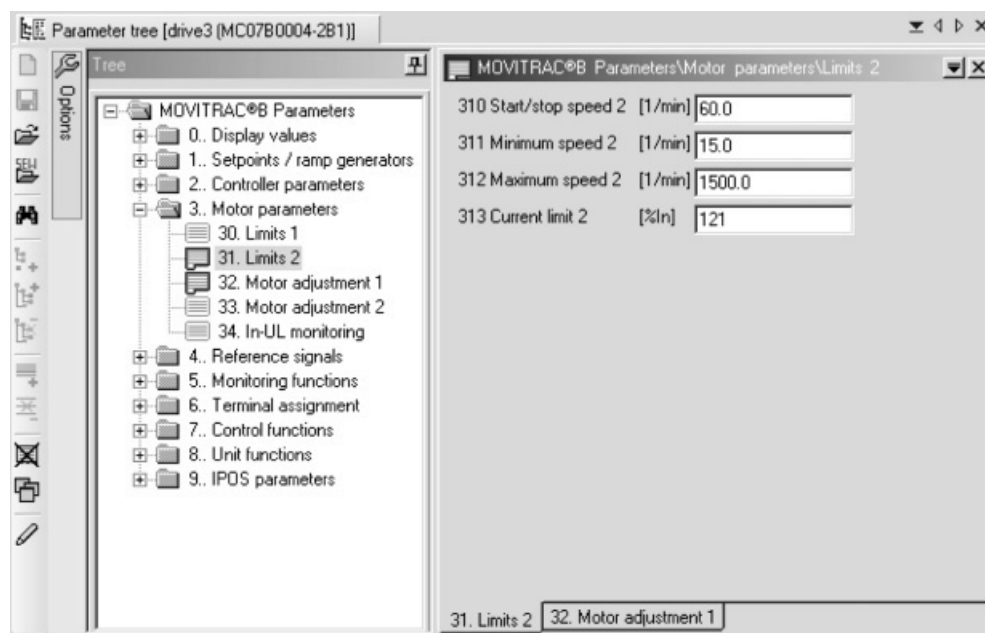
Proceed as follows to read/change unit parameters:

1. Switch to a view (project view or network view).
2. Select the communication mode:
  - Press the [Switch to online mode] button [1] if you would like to read or change parameters directly on the **unit**.
  - Press the [Switch to offline mode] button [2] if you would like to read or change parameters in the **project**.



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3. Select the unit you want to configure.
4. Open the context menu and select the [Parameter tree] command.  
Then, the "Parameter tree" view opens on the right section of the screen.
5. Expand the "Parameter tree" up to the node you require.



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6. Double click to display a particular group of unit parameters.
7. Press the enter key to finalize any changes you make to numerical values in the input fields.



*Comparing unit parameters*

Proceed as follows to compare unit parameters:


1. Open the context menu in the "Parameter tree" view.
2. Select the [Compare] command.
3. For "Source 2", choose one of the following types:
  - File (a backup file, for example)
  - Online
  - Project data
4. Press the [Compare] button.

The parameters from "Source 2" are then compared with the unit parameters. Any parameter differences are listed.

*Creating and printing unit parameter documents*

Proceed as follows to create and print unit parameter documents:

1. Open the context menu in the "Parameter tree" view.

	<b>NOTE</b>
	If you want to document particular unit parameters, select the corresponding node.

2. Select the [Create document] command.
3. Enter a name for the HTML file. Press OK.
4. Choose one of the following options:
  - Document complete parameter tree
  - Document unit parameters of the selected node
  - Document unit parameters of the current window

The unit parameters are then displayed as an HTML file in a browser window, which you can then print.



*Grouping unit parameters into a new parameter tree*

When you open the parameter tree, you have the SEW standard parameter tree as the view for your unit parameters.

MOVITOOLS® MotionStudio allows you to create your own parameter tree. Having your own tree is helpful if you frequently use certain unit parameters and would like them grouped together. Once you have created and saved a parameter tree, you can always use the respective unit type to open it.

Proceed as follows to group unit parameters into a new parameter tree.

1. Open the context menu in the "Parameter tree" view or use the toolbar (see page 91).
2. Press the [Edit mode] button.
3. Specify the tree structure of the new parameter tree. Use the following commands to do so:
  - [Add empty tree]
  - [Add tree]
  - [Add standard tree]
  - [Add node]
4. Drag your required unit parameters into the newly created tree structure (drag and drop).
5. Open the context menu to save the new parameter tree. Select the [Save as] command.
6. Enter a name for the backup file. Press OK.

The newly arranged unit parameters are saved with their values as individual parameters.



### 12.3.3 PDO Editor

*Description of the  
PDO Editor*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Process Data Object Editor (PDO Editor)	<ul style="list-style-type: none"> <li>Used for setting parameters of input/output terminals on the servo inverter</li> <li>Used for configuring process data graphically</li> <li>Used to set parameters for the MOVIAXIS<sup>®</sup> Function Control Blocks (FCBs)</li> </ul>	MOVIAXIS <sup>®</sup>

*Using the  
PDO Editor*

For detailed information about parameter setting, refer to the "MOVIAXIS<sup>®</sup> MS Multi-Axis Servo Inverter" project planning manual.



#### 12.3.4 Manual operation

##### *Description of manual operation*

The following table describes the tool and shows the units that are supported:

Tool	Description	Supported units
Manual operation	Used to manually control the unit from your PC	See "Displaying supported unit types" (see page 88).

##### *Using manual operation*

Proceed as follows to use the units in the manual operation mode:



#### **NOTE**

You can only run manual operation using the serial interface.

MOVIGEAR® units are the only exception. For these units, you can also run manual operation using SBus.

1. Switch to online mode.
2. Select the unit you want to control from your PC.
3. Open the context menu and select the [Manual operation] command.  
This opens the "New project" window.
4. Activate manual operation by clicking the [Activate manual operation] button
5. Enter a setpoint for the speed. When doing so, take into account the desired operating mode (right/left).
6. Select one of the following operating modes:
  - Rapid speed
  - Creep speed
  - Variable
7. Begin manual operation by pressing [Start].  
In the right section of the window, the actual values for the following parameters are displayed:
  - Status
  - Binary inputs and outputs
  - Speed
  - Output current





### 12.3.5 Scope

*Description of scope*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Scope	Used to run diagnostics on process values by recording in real time (oscilloscope program)	See "Displaying supported unit types" (see page 88).

*Using Scope*

For detailed information about using Scope, refer to the "SEW-SCOPE® Operating Instructions" manual.

### 12.3.6 Application Builder

*Description of the Application Builder*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Application Builder	Editor for creating the following applications: <ul style="list-style-type: none"> <li>• User-specific visualizations</li> <li>• Application-specific diagnostics</li> </ul>	Supported for all units

*Using the Application Builder*

For detailed information about using the Application Builder, refer to online help, which you can call in the tool.

### 12.3.7 Shell

*Description of the Shell*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Shell	Higher-level tool that contains the following functions on one interface: <ul style="list-style-type: none"> <li>• Parameter setting</li> <li>• Startup</li> </ul>	See "Displaying supported unit types" (see page 88).

*Using the Shell*

Proceed as follows to use the Shell:

1. Select the unit for which you want to run the Shell.
2. Start the **Shell** from the context menu using the [Shell] command.
3. Select the required function.

For detailed information about the unit parameters, refer to online help, which you can call in the Shell.



#### 12.3.8 Bus monitor

##### *Description of Bus Monitor*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Bus monitor	<ul style="list-style-type: none"> <li>• Tool for running diagnostics on the communication between the field bus and the unit (monitor mode)</li> <li>• Tool for specifying setpoints for the unit independently from the controller (control mode)</li> <li>• A prerequisite for the tool is a serial communication between your PC and the unit.</li> </ul>	Supported for all units for which you run diagnostics using MOVITOOLS®

##### *Using Bus Monitor*

For detailed information about using Bus Monitor, refer to online help, which you can call in the tool.



### 12.3.9 Technology Editors

*Description of the technology editors*

The following table describes the tools and shows which unit types are supported:

Tool	Description	Supported unit types
Motion technology editor	Editor with the following functions: <ul style="list-style-type: none"> <li>• Startup</li> <li>• Parameter setting</li> <li>• Control</li> <li>• Technology functions visualization</li> </ul> Technology functions (applications) for MOVIAXIS®: <ul style="list-style-type: none"> <li>• Electronic gear unit</li> <li>• Electronic cam</li> <li>• Touch probe</li> <li>• Result control</li> <li>• Virtual encoder</li> </ul> Technology functions (applications) for MOVIDRIVE®: <ul style="list-style-type: none"> <li>• Internal synchronous operation</li> <li>• Electronic cam</li> <li>• MOVIDRIVE® application modules</li> </ul>	Supported for MOVIAXIS® and MOVIDRIVE® units
Single-axis positioning for MOVIAXIS®	Editor with the following functions: <ul style="list-style-type: none"> <li>• Startup</li> <li>• Parameter setting</li> <li>• Control</li> <li>• Visualizing of a single-axis positioning for MOVIAXIS®</li> </ul>	

*Using technology editors*

Proceed as follows to use the technology editors:

1. Select the unit for which you want to run a technology editor.
2. Start the tool from the context menu using the [Technology Editors] command.
3. Follow the wizard instructions.

For detailed information about technology functions (applications) and using the motion technology editor, refer to the following documents:

- The "MOVIAXIS® MX Multi-Axis Servo Inverter Technology Editor for Single-Axis Positioning" manual
- The application manuals for MOVIDRIVE® units and online help, which you can call in the tool



### 12.3.10 Programming tools

#### *Programming experience*

For users who wish to program the IPOS<sup>®</sup> Positioning and Sequence Control System using MOVITOOLS<sup>®</sup> MotionStudio, familiarity with programming languages C or Assembler is required.

For users who wish to program the MOVI-PLC<sup>®</sup> controller using MOVITOOLS<sup>®</sup> MotionStudio, familiarity with programming languages as defined in IEC 61131-3 is required.

#### *Description of the PLC Editor*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
PLC Editor	The PLC-Editor is an IEC 61131-3-compliant programming editor with comprehensive libraries comprising: <ul style="list-style-type: none"> <li>• Function modules</li> <li>• Technology functions</li> </ul>	Supported in combination with the following units for MOVI-PLC <sup>®</sup> : <ul style="list-style-type: none"> <li>• MOVIDRIVE<sup>®</sup> B</li> <li>• MOVITRAC<sup>®</sup> B</li> <li>• MOVIAXIS<sup>®</sup></li> <li>• MOVIFIT<sup>®</sup></li> </ul>

#### *Using the PLC Editor*

For detailed information about PLC programming and using the PLC Editor, refer to the following documents:

- The "MOVI-PLC Programming in the PLC Editor" system manual
- Online help, which you can call in the tool

#### *Description of the IPOS<sup>®</sup> Assembler and Compiler*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
IPOS <sup>®</sup> Assembler	Tool for IPOS <sup>®</sup> programming in assembler	Supported for all units you program using MOVITOOLS <sup>®</sup>
IPOS <sup>®</sup> Compiler	Tool for editing and compiling IPOS <sup>®</sup> programs	

#### *Using the IPOS<sup>®</sup> Assembler and Compiler*

For detailed information about IPOS<sup>®</sup> programming and using the tools, refer to the following documents:

- "IPOS<sup>Plus</sup><sup>®</sup> Positioning and Sequence Control System" manual
- Online help, which you can call in the tool



### 12.3.11 Status

*Status description*

The following table describes this tool and shows which unit types are supported:

Tool	Description	Supported unit types
Status	The status gives you a simple diagnostics method. The status also gives you the following information about the unit: <ul style="list-style-type: none"> <li>• Address of the station</li> <li>• Bus used for communication by the station</li> <li>• Unit name</li> <li>• Unit signature</li> <li>• Unit status (enable, etc.)</li> </ul>	Supported for all units

*Displaying the status*

Proceed as follows to display the status:

1. Switch to online mode.
2. Select the unit, the status of which you want to find out.



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3. Open the context menu and select the [Display online unit status] command, or use the mouse to drag the unit into the "Online unit status" area [1] (drag and drop).  
The status information for the unit is then displayed.

*Resetting a unit*

In the "online unit status" area [1] next to the status information for the unit, there is a button [2] for you to reset the unit.



*Removing the unit from the online unit status area*

Proceed as follows to remove the unit from the online unit status area:

**NOTE**

Too many units in the "Online unit status" area increase the bus load.

- If you need to, remove units from the "online unit status" area.

1. Select the unit you want to remove.
2. Open the context menu and select the command [Remove] or [Remove all].



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<b>Canada</b>			
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<b>Assembly Sales Service</b>	<b>Suzhou</b>	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021	Tel. +86 512 62581781 Fax +86 512 62581783 <a href="mailto:suzhou@sew-eurodrive.cn">suzhou@sew-eurodrive.cn</a>
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Croatia			
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Estonia			
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Gabon			
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Greece			
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Peru			
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	<b>Capetown</b>	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 <a href="mailto:dswanepoel@sew.co.za">dswanepoel@sew.co.za</a>
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Switzerland			
<b>Assembly Sales Service</b>	<b>Basel</b>	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 417 1717 Fax +41 61 417 1700 <a href="http://www.imhof-sew.ch">http://www.imhof-sew.ch</a> <a href="mailto:info@imhof-sew.ch">info@imhof-sew.ch</a>



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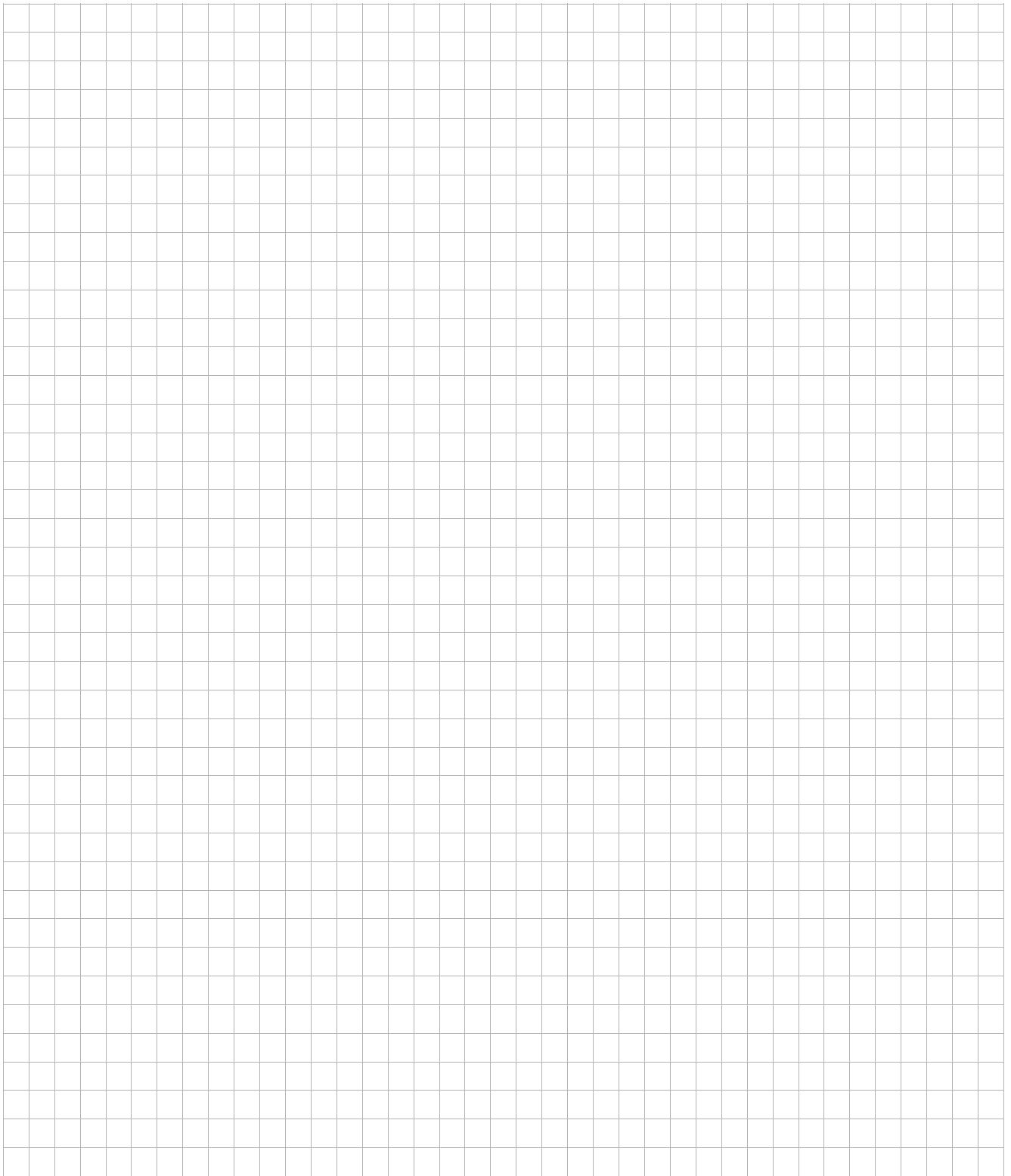




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