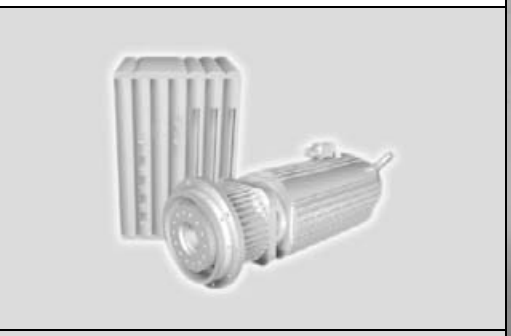
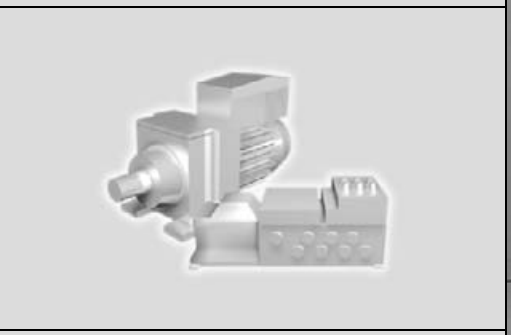
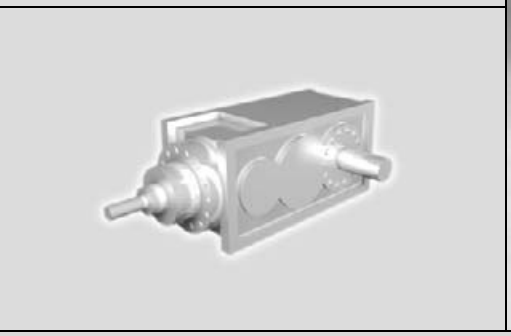
SEW EURODRIVE







MOVITOOLS® - Connection to SIMATIC S7 via MPI

GC441000

Edition 09/2005

11351616 / EN

Manual

SEW
EURODRIVE

Contents

1 System Description

1.1 General information

The MOVITOOLS® program package from SEW-EURODRIVE is used for project planning, diagnostics and programming of all new inverter series from SEW-EURODRIVE. In the most simple scenario, a PC and a drive inverter are connected using the PC's RS-232 interface. MOVITOOLS® lets you operate several drive inverters at the same time. To do this, all inverters must be connected to the PC/notebook via a bus system. This may be done by using the drives' proprietary RS-485 interface or the drives' system bus.

Fieldbuses such as PROFIBUS-DP have established themselves in plant automation systems. Drive inverters are increasingly controlled via fieldbuses. This means the system comes equipped with a bus structure. The high-performance bus interface modules in drive inverters from SEW-EURODRIVE make for the exchange of both cyclical process data for drive control and acyclical parameter data.

The **MPI** (**M**ulti-**P**oint **I**nterface) described in this manual now also provides a PROFIBUS link to the SIMATIC S7 world. It can be used for diagnostics and startup of SEW-EURODRIVE drive inverters using MOVITOOLS®.

1.2 The FC_MoviTools function

The new *FC_MoviTools* STEP7 function is easy to integrate, so you can link your SIMATIC S7 system to the MOVITOOLS® software from SEW-EURODRIVE.

The link to SEW-EURODRIVE drive inverters connected to PROFIBUS is established using the *FC_MoviTools* function. MOVITOOLS® operates with the PROFIBUS address set on the drive inverters using DIP switches.

On the PC side, MOVITOOLS® software communication via the SIMATIC Net PRODAVE MPI driver is controlled in such a way that a link is established to SIMATIC S7 via the MPI interface.

All the information about the communication link is stored in the SIMATIC S7 program. As a result, any particular PC with MOVITOOLS® and the MPI interface can access the drive data, even without SIMATIC S7 project information (→ Figure 1).

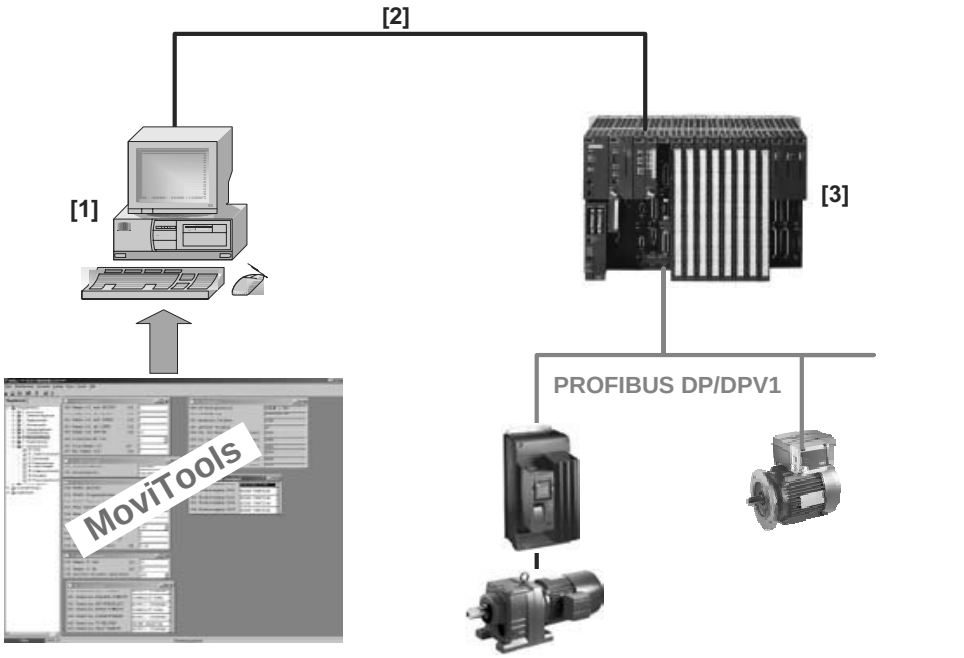


Figure 1: Example of a network connected via MPI interface

[1] SIMATIC S7 PG or standard PC with MPI or CP5611/5511

[2] MPI connection

[3] SIMATIC S7 with the *FC_MoviTools* function

1.3 Supported communication structures

The MOVITOOLS® software lets you operate various communication structures via the MPI. For example, SIMATIC S7 systems linked via the MPI bus supply all the information about drives connected via PROFIBUS-DP bus to a central diagnostics PC on which MOVITOOLS® is installed. In this way, you can access all SEW-EURODRIVE drives (→ Figure 2).

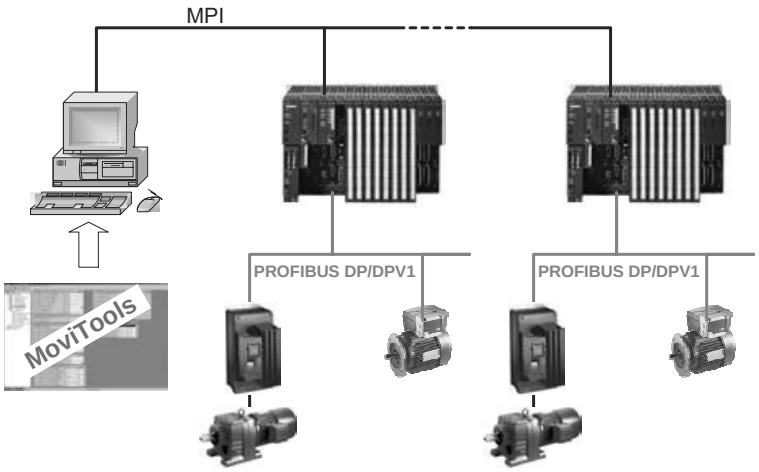


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Figure 2: Setting MOVITOOLS® parameters for all SEW-EURODRIVE drives

Using MOVITOOLS® via MPI also offers the option to set the parameters of up to 90 drive inverters connected to the PROFIBUS-DP master systems of a SIMATIC S7-CPU (→ Figure 3).

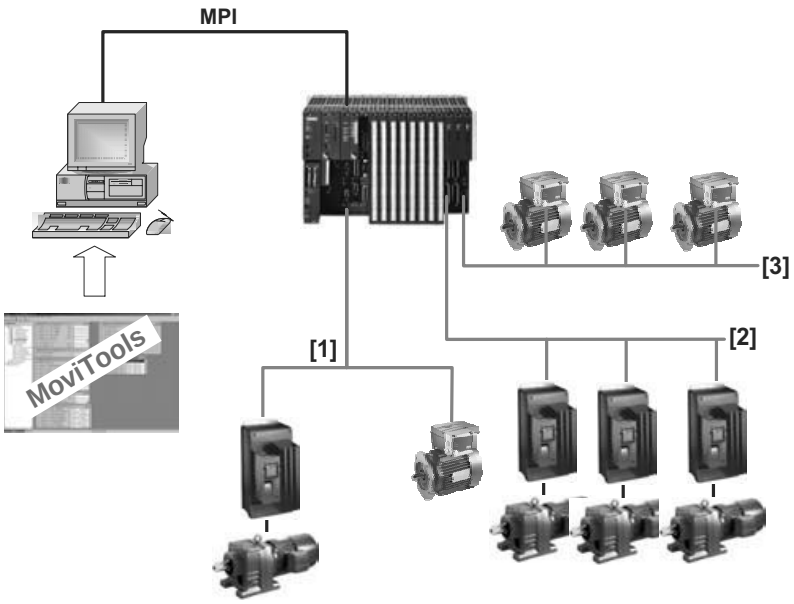

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Figure 3: MOVITOOLS® supports several PROFIBUS master systems via MPI

[1], [2], [3] PROFIBUS master system 1, 2, 3

1.4 Remote maintenance

Using SIMATIC hardware and software components also permits remote maintenance of SEW-EURODRIVE drive inverters anywhere in the world using a standard modem connection with a SIEMENS TS adapter (which is also used for remote maintenance of the SIMATIC S7 itself). In addition to the TS adapter, you will need the optional SIEMENS Teleservice software package for remote maintenance (→ Figure 4).

SIEMENS order number	Name
6ES7972-0CA33-0XA0	SIMATIC S7, TS adapter V5.1 (hardware)
6ES7842-0CC02-0YE0	SIMATIC S7, Teleservice V5.1 (software)

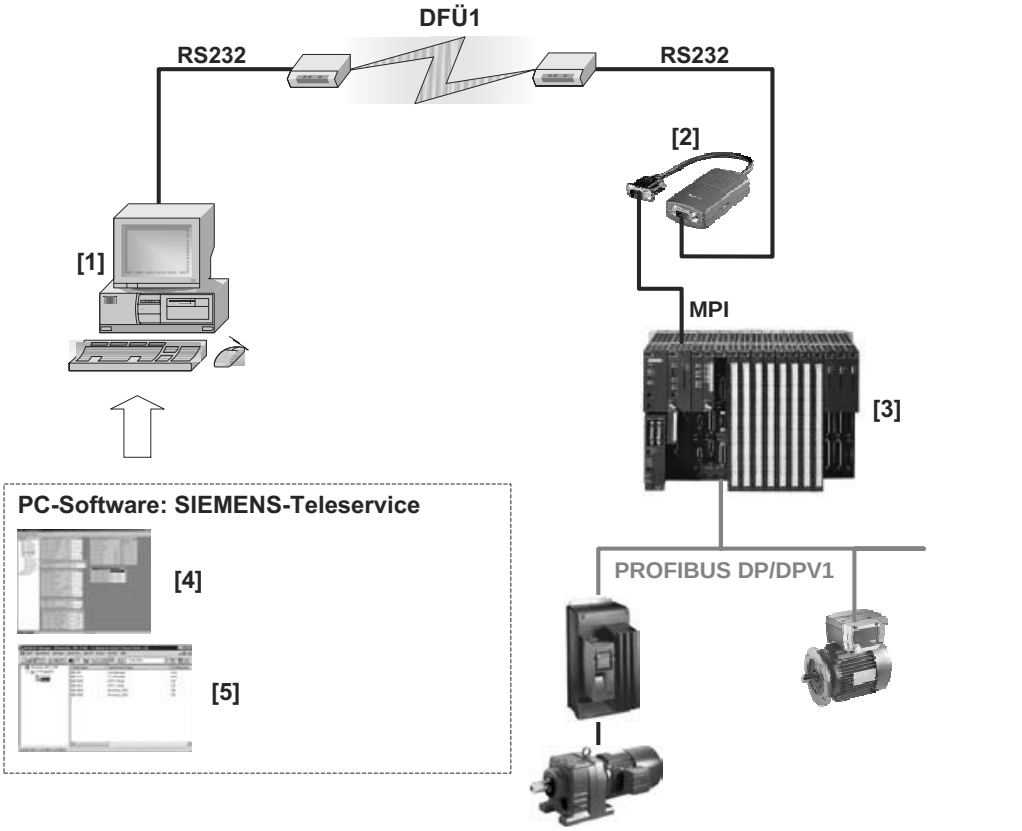

Figure 4: Remote maintenance via SIMATIC Teleservice

[1] SIMATIC S7 PG or standard PC with RS-232 interface

[2] SIEMENS TS adapter

[3] SIMATIC S7 with the *FC_MoviTools* function

[4] MOVITOOLS® software via MPI for remote maintenance of SEW-EURODRIVE drives

[5] STEP7 for remote maintenance of the PLC (optional)

2 System Prerequisites

2.1 Overview of Siemens components

The following tables contain an overview of all Siemens components mentioned in this document. The prices were taken from the Siemens price list CD CA 01 04 / 2002 effective as of October 2002.

SIMATIC Net Prodave MPI licenses

Connection of MOVITOOLS® via MPI takes place via the SIMATIC Net software package Prodave MPI V5.5. You need **one** full license of this software to install it. You will need additional copy licenses to install the software on other PCs / PGs. The copy license does not include software and documentation but merely an additional license agreement.

Order number	Designation	Comment	Price in € (Status: October 2002)
6ES7807-4BA00-0YA0	SIMATIC S7, Prodave MPI	One full license incl. software and documentation	506
6ES7807-4BA00-0YA1	SIMATIC S7, Prodave MPI, copy license	One copy license (without software and documentation)	380

Hardware components for MPI connection

Order number	Designation	Comment	Price in €
6GK1561-1AA00	SIMATIC Net CP5611	PCI card for PC	389
6GK1551-1AA00	SIMATIC Net CP5511	PCMCIA card for laptop / notebook	675
6ES7972-0CA23-0XA0	SIMATIC S7, PC ADAPTER V5.1	Serial adapter for RS232 on MPI	286

Teleservice components (remote diagnostics)

Order number	Designation	Comment	Price in €
6ES7972-0CA33-0XA0	SIMATIC S7, TS-Adapter V5.1	Hardware for remote service	377
6ES7842-0CC02-0YE0	SIMNATIC S7, Teleservice V5.1	Software for remote service	506

2.2 Overview of SEW components

MOVITOOLS® via MPI is included in the "MOVITOOLS® – Connection via SIMATIC S7" documentation package. The documentation package includes the following documents:

- CD-ROM "MOVITOOLS® – Connection via SIMATIC S7" with S7 projects including function blocks for "MOVITOOLS® via MPI" and "MOVITOOLS® via Ethernet S7."
- Documentation
- **One** license agreement for use of the function blocks on **one** SIMATIC S7

Part number	Designation	Language
1058 5605	"MOVITOOLS® connection via SIMATIC S7 documentation package	DE = German
1058 5613		EN = English
1058 5621		FR = French

Licensing conditions

SEW-EURODRIVE grants the purchaser the right to download and operate the files (function blocks and data blocks) on exactly **one** SIMATIC S7 control unit.

Each control unit in operation containing the files (function blocks) supplied by SEW-EURODRIVE requires its own license.

If this control unit is defective, the license and files may be transferred to another control unit.

2.3 STEP7 projects

You will have to expand your STEP7 project to operate MOVITOOLS® via MPI.

The following files are included in the scope of delivery:

The "X" characters in the following file names are placeholders for the version number.

Example: V410_DP.ZIP = STEP7 archive with version number 4.10

- VXXX_DP.ZIP

  This STEP7 archive contains the *FC_MoviTools* function as well as the hardware data block (HDB) and the communication data block (CDB) for S7-300 and S7-400 CPUs that **do not** support a DPV1 protocol. This sample project contains the following blocks:

OB1	Cyclical start of *FC_Movitools*
FC99	*FC_Movitools*
DB60	Communication-DB (CDB)
DB90	Hardware-DB (HDB)

- **VXXX_DPV1.ZIP**

  This STEP7 archive contains the blocks for the SIMATIC CPUs with DPV1 support. This sample project contains the following blocks:

OB1	Cyclical start of *FC_Movitools*
FC99	*FC_Movitools*
DB60	Communication-DB (CDB)
DB90	Hardware-DB (HDB)
DB52	Instance-DB for DPV1 SFB52 (RDREC)
DB53	Instance-DB for DPV1 SFVB53 (WRREC)

If your S7 CPU supports the DPV1 system function blocks, select this sample project as base for connection via MPI. You can use this *FC_MoviTools* to configure the SEW-EURODRIVE drives without DPV1.

- **readme_MovitoolsMPI.txt**

  This file contains additional information on the STEP7 archives.

3 Configuration of SIMATIC S7

The *FC_MoviTools* function and two data blocks must be added to the STEP7 project to operate MOVITOOLS® via the SIMATIC S7 MPI. The SEW-EURODRIVE scope of delivery includes two S7 projects for SIMATIC CPUs with and without DPV1 firmware. The following sections are a description of configuration and programming.

3.1 Configuration of drives via MPI

Configure the SEW-EURODRIVE drives as usual in the STEP7 hardware configuration. Note the following instructions for trouble-free operation of MOVITOOLS® via MPI:

- Use the same periphery addresses for the input and output ranges when planning the parameter channel.
- Assign only PROFIBUS addresses in the range 3 ... 99 to SEW-EURODRIVE drives.
- Use the hardware configurations of SEW-EURODRIVE drives in STEP7 as well as the device configurations in the GSD file. Make sure you plan the parameter channel with 4 words and maintain consistency over the entire length when configuring a drive from SEW-EURODRIVE.
- If you have distributed the SEW-EURODRIVE drives to several PROFIBUS master systems, these drives may not have identical PROFIBUS addresses. You cannot use MOVITOOLS® to set the drive parameters in case of identical PROFIBUS addresses. Make sure that **all** SEW-EURODRIVE drives on **one** SIMATIC S7 CPU have different PROFIBUS addresses.
- You should select DPV1 mode (if this mode is supported by the drives and your SIMATIC S7 CPU) so that you will be able to use all MOVITOOLS® applications during operation via MPI.

3.2 Copying data blocks

Operation of MOVITOOLS® requires a communication data block (CDB) as well as a hardware data block (HDB). Copy these data blocks from the provided SEW-EURODRIVE STEP7 project to your project because both blocks have a version string in the header.

The HDB and CDB data blocks are to occur only once in the SIMATIC S7 program. MOVITOOLS® will not be started via MPI if copies of these blocks with the same version string in the header are saved with a different data block number in the SIMATIC S7.

Communication data block

The communication data block (CDB) serves as a local data block for the SEW function *FC_MoviTools*. Make sure that there is no access to this data block from your S7 application. Manual entries are not necessary for this data block.

Hardware data block

The hardware data block (HDB) contains the list of SEW-EURODRIVE drive inverters that can be accessed via MOVITOOLS® and that are connected to the lower-level PROFIBUS systems. Adjust this hardware data block to match the hardware configuration of your project. The hardware data block is read in via the MOVITOOLS® MPI to determine the list of connected drive inverters from SEW-EURODRIVE.

You can choose any number between DB1 and DB254 for both data blocks. MOVITOOLS® does not recognize any data block numbers outside this range.

DPV1 communication also requires two instance data blocks for the S7 system function blocks SFB52 (RDREC) and SFB53 (WRREC). You can either copy these blocks from the SEW-EURODRIVE sample project for DPV1 or create new ones in your project.

3.3 Structure of the hardware data block

Use the hardware data block (HDB) to indicate the number of inverters from SEW-EURODRIVE you are planning to configure via MOVITOOLS®. Following this step, you define the logical I/O address (periphery address) for each drive as well as its device type (access via DPV1 or the parameter channel). Use the DPV1 mechanism for parameter setting to have access to all MOVITOOLS® applications.

Parameter name	Type	Description
`Header`	STRING [98]	**Unique version string that must match MOVITOOLS® and is not to be changed!**
`Number_of_drives`	`INT`	Number of SEW-EURODRIVE drives defined below. You can define up to 90 drives.
`SEW_drive1`	`STRUCT`	You will have to define the following structure elements for each drive from SEW-EURODRIVE.
`I/O_address`	`INT`	Periphery address (decimal) from hardware configuration • For ***DPV1_device = FALSE*** enter the first periphery address of the parameter channel from the hardware configuration. Note the valid configuration of the parameter channel in the STEP 7 hardware configuration as described in section "Configuration of drives via MPI." • For ***DPV1_device = TRUE*** enter the first periphery address of the process data from the hardware configuration. **The input and output range of the parameter channel have to be at the same address in the hardware configuration!**
`DPV1_device`	`BOOL`	**FALSE:** The drive does not support DPV1. Configuration takes place in the parameter channel set in the hardware configuration. You will not have access to all MOVITOOLS® applications in this operating mode. **TRUE (recommended):** The drive supports DPV1. Parameter setting takes place via S7 system function blocks SFB52 and SFB53. SEW-EURODRIVE recommends this operating mode because all MOVITOOLS® applications are accessible via DPV1 only.
	`END_STRUCT`	
`SEW_drive2`	`...`	

Make sure to enter the same information in the declaration and data view when entering information in the hardware data block. For a simpler approach, you enter the information into the data block in declaration view of STEP7 to then change to data view and use the menu item [Edit] / [Initialize data block] to start data view.

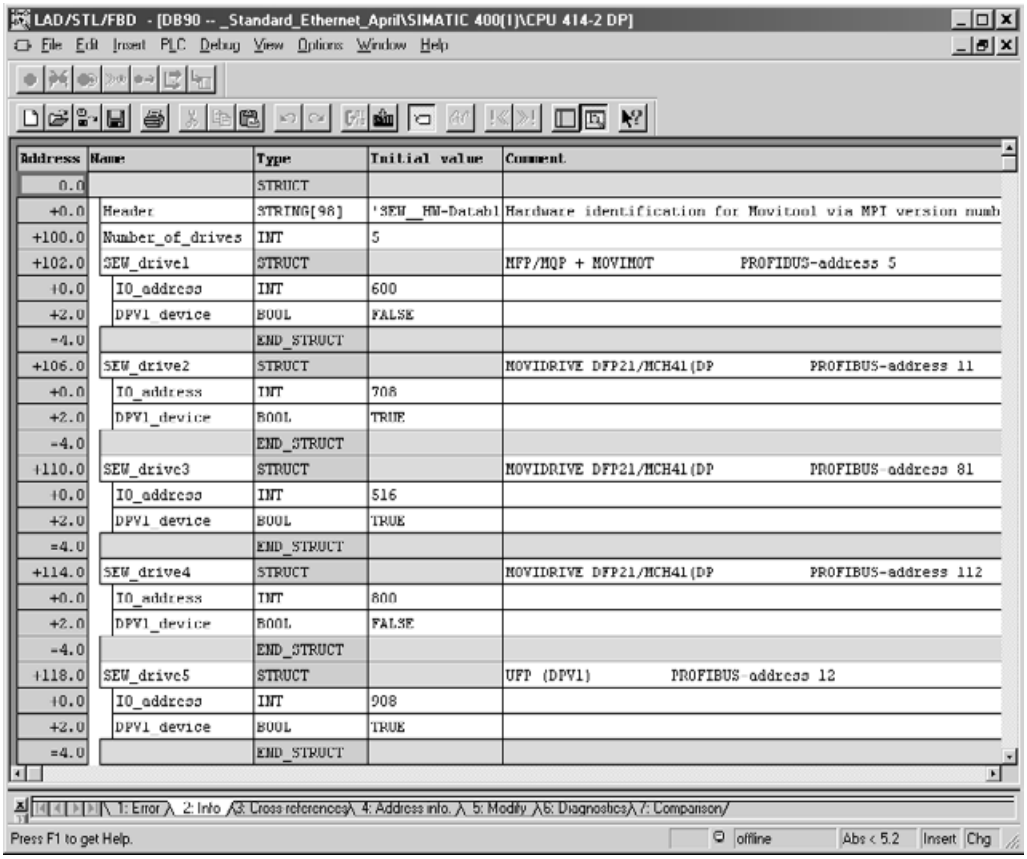

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Figure 5: Example of a hardware data block

3.4 FC_MoviTools function

The *FC_MoviTools* proxy function is necessary for operation of MOVITOOLS® via MPI. Depending on the type of CPU and firmware status, you may be able to copy this function from one of the STEP7 projects supplied by SEW-EURODRIVE. If your CPU supports DPV1, copy the function in the DPV1 project because all MOVITOOLS® applications are available with DPV1 only.

FC100 is the *FC_MoviTools* number in the sample project. You can use any other FC number.

The function should be requested once in each program cycle (OB1). Its transfer parameter is the DB number of the CDB and (in the version for DPV1 only) the two program invocation data blocks for the system functions SFB52 (RDREC) and SFB53 (WRREC).

Request structure

Request structure of the *FC_MoviTools* function for DP CPUs in OB1:

```
CALL FC100
   CommunicationDB      := DB10
   busy                 := M1.0
   version_error        := M1.1
```

Request structure of the *FC_MoviTools* function for DPV1 CPUs in OB1:

```
CALL FC100
   CommunicationDB      := DB10
   InstDB_SFB52         := DB52
   InstDB_SFB53         := DB53
   busy                 := M1.0
   version_error        := M1.1
```

Parameter name	Type	Interface	Description
CommunicationDB	BLOCK_DB	IN	CommunicationDB (CDB) for local function data
InstDB_SFB52	BLOCK_DB	IN	Instance data blocks for SFB52 (RDREC) in DPV1 communication. Copy this data block from the SEW sample project or save it in your project as new instance data block for SFB52.
InstDB_SFB53	BLOCK_DB	IN	Instance data blocks for SFB53 (WRREC) in DPV1 communication. Copy this data block from the SEW sample project or save it in your project as new instance data block for SFB52.
busy	BOOL	OUT	**TRUE:** Parameter exchange between MOVITOOLS® and SEW-EURODRIVE inverter active. **There may be no other parameter access taking place between the S7 application program and an SEW-EURODRIVE inverter during this time period!** **FALSE:** No parameter exchange between MOVITOOLS® and SEW-EURODRIVE inverter.
version_error	BOOL	OUT	**TRUE:** There is a version conflict between *FC_MoviTools*;, HDB and CDB, i. e. the components do not have the same version number. Remedy: Load the blocks with the same version number into the PLC. **FALSE:** There is no version conflict.

3.5 Integration into an existing STEP7 project

Please note:

- The "X" characters in the name are placeholders for the version number (e.g.: V410_DP.ZIP = Step7 archive with version number 4.10).
- Please note the limitations when assigning the data block numbers (→ section "Copying data blocks").

Only a few steps are required to integrate the blocks into an existing STEP7 project:

- Dearchive and open the STEP7 archive `VXXX_DP.ZIP` or `VXXX_DPV1.zip` in the SIMATIC Manager via [File] / [Archive].
- Assign a different DB or FC number (highlight block, press right mouse button, menu item [Rename]) to the FC_Movitools_VX.XX, Movitools_HDB_VX.XX and Movitools_CDB_VX.X blocks.
- Copy the blocks to your STEP7 project. To do this, select the blocks (→ figure below) and drag and drop them into your STEP7 project.
- Now add the *FC_MoviTools* function request to your OB1 (e.g. call FC100) in accordance with Sec. "The FC_MoviTools function."
- Define the list of inverters that are going to have their parameters set using MOVITOOLS® in Movitools_HDB_VX.XX (→ Sec. "Structure of the hardware data block")
- Upload your STEP7 project expanded by MOVITOOLS® to the PLC.

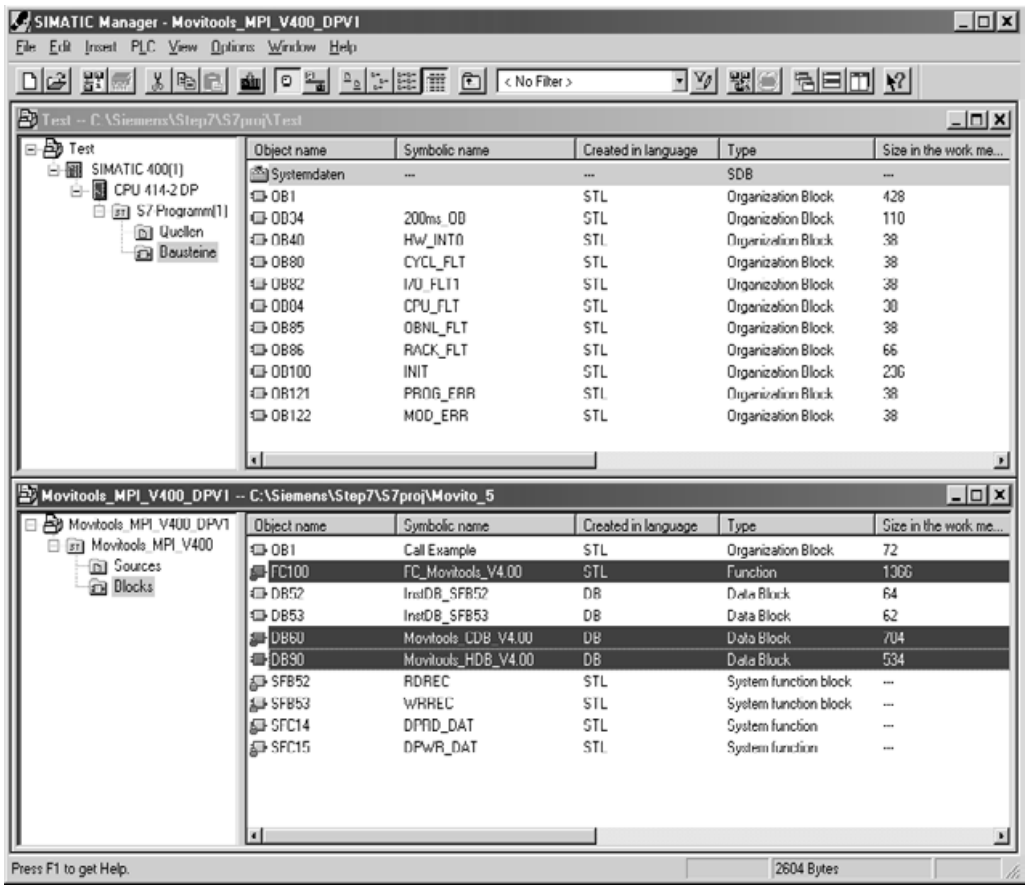

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Figure 6: Copy the blocks to an existing STEP7 project

4 Configuration and Start of MOVITOOLS®

4.1 Configuration of the PG / PC interface

You will first have to configure the PG / PC interface to establish a communication link between PG / PC and the SIMATIC S7. This step requires installation of the following Siemens software:

- SIMATIC Net PRODAVE MPI as of V5.5
- For remote maintenance also: Siemens Teleservice as of V5.1

The configuration program is located in the Start menu at:

[Settings] / [Control panel] / [PG/PC interface settings]

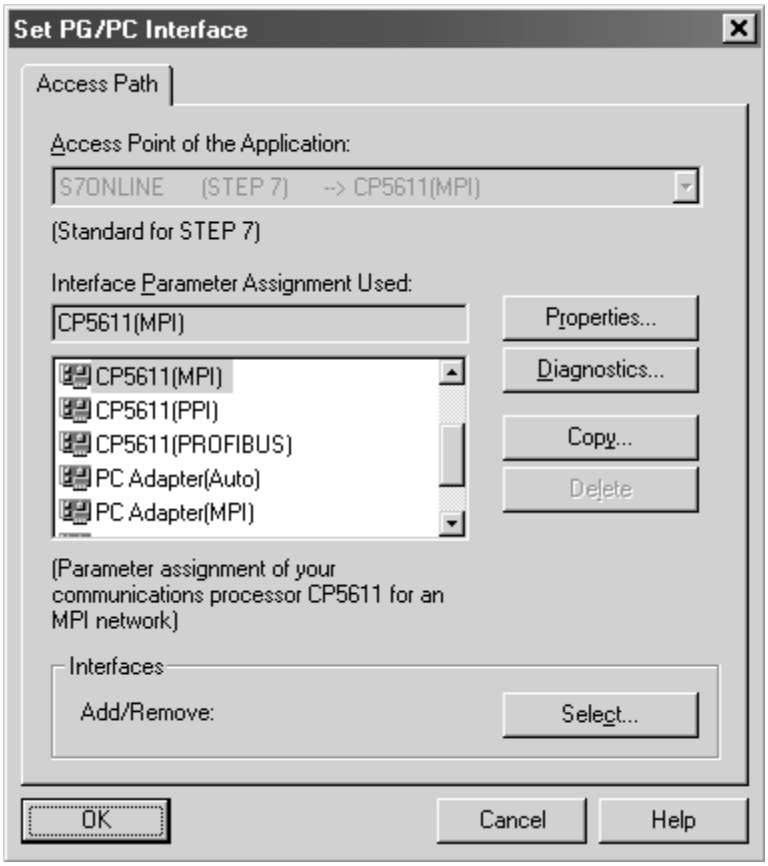

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Figure 7: Software (from Siemens) for configuration of the PG/PC interface

Configure the interface according to the system environment.

4.2 Starting MOVITOOLS® with the MoviLinkSwitcher tool

You will have to start the `MoviLinkSwitcher` tool from the start menu prior to starting the MOVITOOLS® Manager. This step will redirect the communication connection from MOVITOOLS® to the MPI.

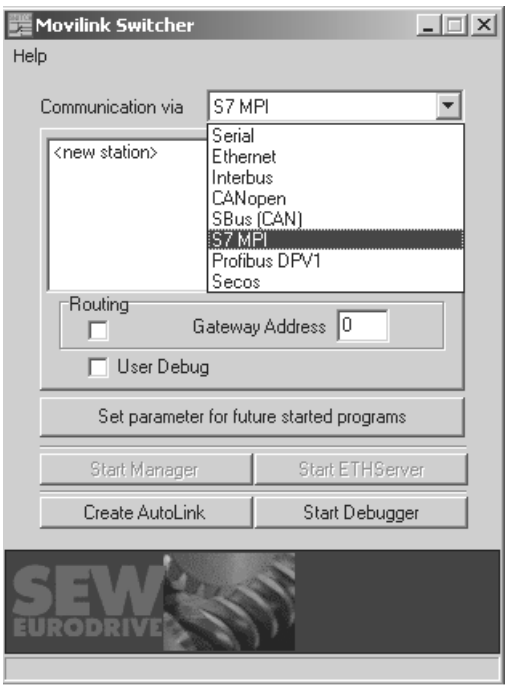

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Figure 8: Redirecting the communication connection via S7 MPI

- Select "S7 MPI" as communication channel from the "Communication via" selection field.
- Double-click on "new station" to set up a new S7 station.

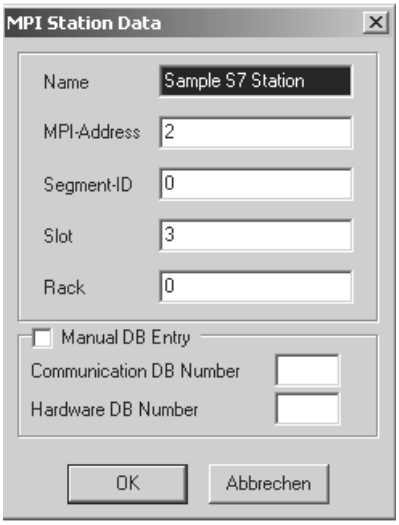

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Figure 9: Input window for new communication connection

- Enter the communication information in the "MPI Station Data" input window for the new MPI connection to your S7 CPU (→ following table).

Parameters of MPI address	Description
MPI address	MPI address of the S7
Setmet-ID	Segment ID of S7 (default = 0)
Slot	Number of the slot in which the S7 CPU with MPI interface is installed (count if necessary)
Rack	Number of component rack (default = 0)

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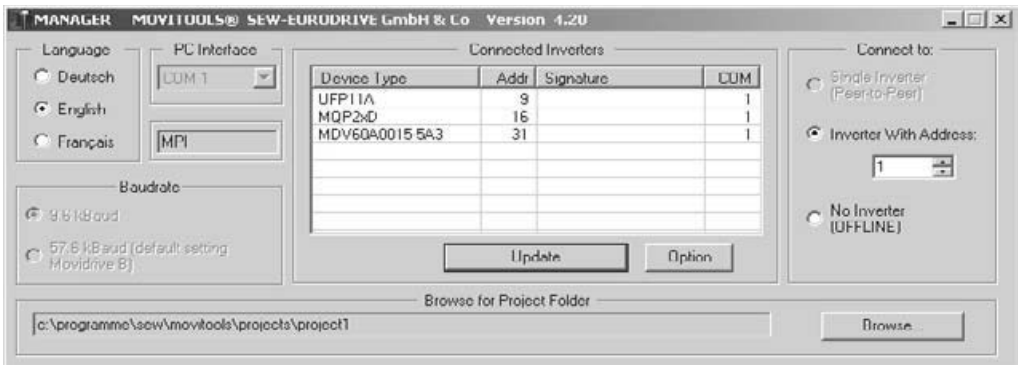
Figure 10: Selecting the communication link for the S7 MPI interface

- Highlight the communication connection you need (here:Sample S7 station) and use the "Set parameter for future started programs" button to set the communication channel "S7 MPI" for all MOVITOOLS® applications started at a later time.
- The "Start Movitools-Manager" button became active after you redirected MOVITOOLS® to the MPI in the previous step. You can start the "MOVITOOLS® Manager" directly.

You can access the drives in the usual way in the MOVITOOLS® Manager. All address information does now correspond to the PROFIBUS addresses of the drives (→ following figure).



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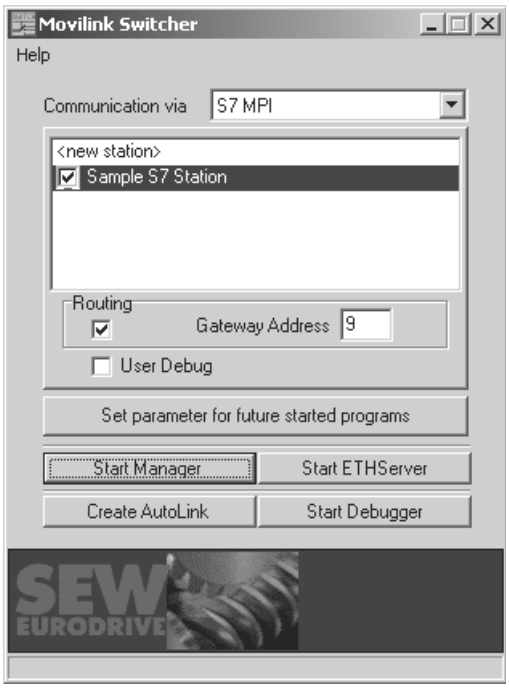
Two-stage routing via PROFIBUS DP-V1

Use "two-stage routing" for all drives not linked directly to PROFIBUS but connected via gateway.

Example: Universal fieldbus interface UFP11A; PROFIBUS address 9 (→ following figure)



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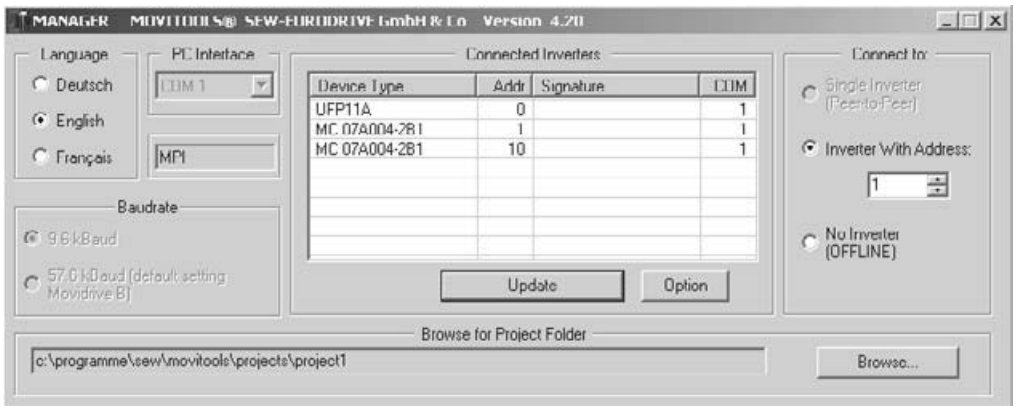
- Select the "Routing" field and enter "9" in the "Gateway-Address" field.
- Open the MOVITOOLS® Manager once again. Click on "Update" to display the current address information of the lower-level bus system (→ following figure).



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STOP

MOVITOOLS® works in offline mode if the PC-COM interface setting in the MOVITOOLS® Manager is set to "None." Select any PC COM port (e.g. COM1) for the MPI so that MOVITOOLS® will be available online.

Problems when connecting to MPI

Check the following setting in case you fail to establish an online connection to the SEW-EURODRIVE drives:

- Number of inverters and address information in hardware data block (declaration view)
- MPI communication parameters in `MoviLinkSwitcher`

You can use an integrated debugger to obtain more information which you can use for diagnostics of your MPI connection. Select the [User Debug] option in the `MoviLink-Switcher` to define the MPI connection and start the debugger with the [Start Debugger] button. See the section "Appendix" for a description on how to proceed.

You cannot connect two or more different PG/PCs to the same PLC at the same time with "MOVITOOLS® via MPI."

4.3 Limited functionality of MOVITOOLS® with PROFIBUS-DP

MOVITOOLS® with PROFIBUS DPV1 offers expanded functions for the acyclical exchange of parameter data. MOVITOOLS® uses the parameter channel with limited functions when working with PROFIBUS-DP.

The following MOVITOOLS® functions are not available with PROFIBUS DPV0:

- **MOVIDRIVE drive inverters®**
  - MOVITOOLS® Scope
  - Reading, saving, uploading and displaying the electronic nameplate with MOVIDRIVE® *compact* MCH...
  - Storing parameter sets with more than one electronic cam
  - Using the "Save data" function in the MOVITOOLS® Manager

- **MOVITRAC® 07 frequency inverter via PROFIBUS Gateway UFP11A**
  - MOVITOOLS® Scope
  - Using the "Save data" function
  - Using the "Save data" function in the MOVITOOLS® Manager
  - Communication with MOVITRAC® 07 frequency inverters which are connected to PROFIBUS DPV0 via UFP11A

If you are using the PROFIBUS-DPV1 components (master **and** slave) as well as the function data blocks of the VXXX_DPV1.ZIP file, you can use MOVITOOLS® without limitations.

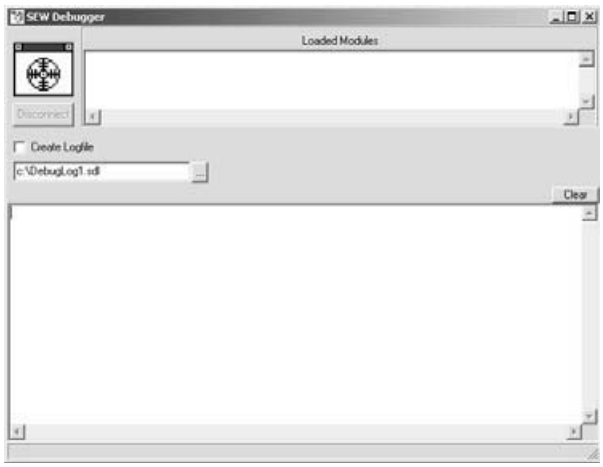
5 Appendix

5.1 Working with the user debugger

A Windows® NT4 or Windows® 2000 operating system is required for the user debugger.

SEW-EURODRIVE provides the debugger for troubleshooting purposes if problems occur when MOVITOOLS® is used via the MPI.

- Start MoviLinkSwitcher in the usual way before starting MOVITOOLS® and activate the [User Debug] check box.
- Click the [Start Debugger] button. The debugger will open. You can now connect to all additional applications that have been started (→ following picture).



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- Now start MOVITOOLS®. A "debug connector" is displayed first whenever an application is started (→ following picture).

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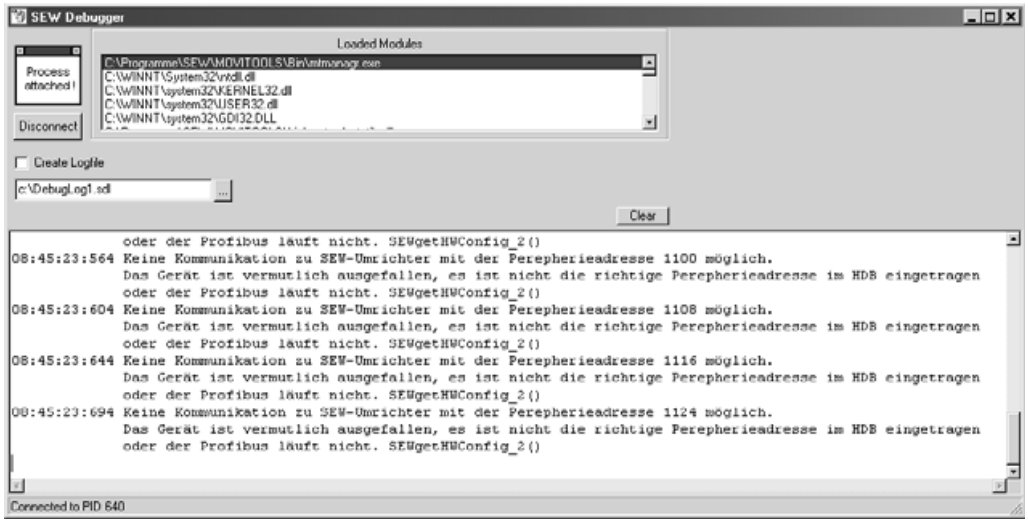
The name of the started application is displayed; this facilitates navigation when several applications are running at the same time. However, you can enter any name for the particular application in the text box.

- To connect the debugger with a process, drag and drop the crosshairs onto the connector.

- You are now connected to the process and you receive debugging information for troubleshooting (→ following figure).



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- Activate the [Create Logfile] checkbox if you want to save the information in a file. All subsequent debugging information is automatically saved in the file.
- Clicking the [Disconnect] button disconnects the debugger from the process. The debug connector for the process is displayed again. You can also have several debugger windows open to track several processes at the same time.
- Simply shut down the debug connector if you no longer want to track a process. The debug connector is no longer displayed after that.

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Address List

Germany			
Headquarters **Production** **Sales**	**Bruchsal**	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal P.O. Box Postfach 3023 · D-76642 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 http://www.sew-eurodrive.de sew@sew-eurodrive.de
Service **Competence Center**	**Central** Gear units / Motors	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 D-76676 Graben-Neudorf	Tel. +49 7251 75-1710 Fax +49 7251 75-1711 sc-mitte-gm@sew-eurodrive.de
	Central Electronics	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal	Tel. +49 7251 75-1780 Fax +49 7251 75-1769 sc-mitte-e@sew-eurodrive.de
	North	SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 40-42 D-30823 Garbsen (near Hannover)	Tel. +49 5137 8798-30 Fax +49 5137 8798-55 sc-nord@sew-eurodrive.de
	East	SEW-EURODRIVE GmbH & Co KG Dänkritzer Weg 1 D-08393 Meerane (near Zwickau)	Tel. +49 3764 7606-0 Fax +49 3764 7606-30 sc-ost@sew-eurodrive.de
	South	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 D-85551 Kirchheim (near München)	Tel. +49 89 909552-10 Fax +49 89 909552-50 sc-sued@sew-eurodrive.de
	West	SEW-EURODRIVE GmbH & Co KG Siemensstraße 1 D-40764 Langenfeld (near Düsseldorf)	Tel. +49 2173 8507-30 Fax +49 2173 8507-55 sc-west@sew-eurodrive.de
	Drive Service Hotline / 24 Hour Service		+49 180 5 SEWHELP +49 180 5 7394357
	Additional addresses for service in Germany provided on request!		

France			
Production **Sales** **Service**	**Haguenau**	SEW-USOCOME 48-54, route de Soufflenheim B. P. 20185 F-67506 Haguenau Cedex	Tel. +33 3 88 73 67 00 Fax +33 3 88 73 66 00 http://www.usocome.com sew@usocome.com
Assembly **Sales** **Service**	**Bordeaux**	SEW-USOCOME Parc d'activités de Magellan 62, avenue de Magellan - B. P. 182 F-33607 Pessac Cedex	Tel. +33 5 57 26 39 00 Fax +33 5 57 26 39 09
	Lyon	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 00 Fax +33 4 72 15 37 15
	Paris	SEW-USOCOME Zone industrielle 2, rue Denis Papin F-77390 Verneuil l'Etang	Tel. +33 1 64 42 40 80 Fax +33 1 64 42 40 88
	Additional addresses for service in France provided on request!		

Algeria			
Sales	**Alger**	Réducom 16, rue des Frères Zaghnoun Bellevue El-Harrach 16200 Alger	Tel. +213 21 8222-84 Fax +213 21 8222-84

Argentina			
Assembly **Sales** **Service**	**Buenos Aires**	SEW EURODRIVE ARGENTINA S.A. Centro Industrial Garin, Lote 35 Ruta Panamericana Km 37,5 1619 Garin	Tel. +54 3327 4572-84 Fax +54 3327 4572-21 sewar@sew-eurodrive.com.ar

Australia			
Assembly **Sales** **Service**	**Melbourne**	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. +61 3 9933-1000 Fax +61 3 9933-1003 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au

Austria			
Assembly **Sales** **Service**	**Wien**	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://sew-eurodrive.at sew@sew-eurodrive.at

Belgium			
Assembly **Sales** **Service**	**Brüssel**	SEW Caron-Vector S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be

Brazil			
Production **Sales** **Service**	**Sao Paulo**	SEW-EURODRIVE Brasil Ltda. Avenida Amâncio Gaiolli, 50 Caixa Postal: 201-07111-970 Guarulhos/SP - Cep.: 07251-250	Tel. +55 11 6489-9133 Fax +55 11 6480-3328 http://www.sew.com.br sew@sew.com.br
	Additional addresses for service in Brazil provided on request!		

Bulgaria			
Sales	**Sofia**	BEVER-DRIVE GmbH Bogdanovetz Str.1 BG-1606 Sofia	Tel. +359 2 9532565 Fax +359 2 9549345 bever@fastbg.net

Cameroon			
Sales	**Douala**	Electro-Services Rue Drouot Akwa B.P. 2024 Douala	Tel. +237 4322-99 Fax +237 4277-03

Canada			
Assembly **Sales** **Service**	**Toronto**	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, Ontario L6T3W1	Tel. +1 905 791-1553 Fax +1 905 791-2999 http://www.sew-eurodrive.ca l.reynolds@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. 7188 Honeyman Street Delta. B.C. V4G 1 E2	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Street LaSalle, Quebec H8N 2V9	Tel. +1 514 367-1124 Fax +1 514 367-3677 a.peluso@sew-eurodrive.ca
	Additional addresses for service in Canada provided on request!		

Chile			
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China			
Production **Assembly** **Sales** **Service**	**Tianjin**	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 46, 7th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25322611 gm-tianjin@sew-eurodrive.cn http://www.sew.com.cn

China			
Assembly **Sales** **Service**	**Suzhou**	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021 P. R. China	Tel. +86 512 62581781 Fax +86 512 62581783 suzhou@sew.com.cn

Colombia			
Assembly **Sales** **Service**	**Bogotá**	SEW-EURODRIVE COLOMBIA LTDA. Calle 22 No. 132-60 Bodega 6, Manzana B Santafé de Bogotá	Tel. +57 1 54750-50 Fax +57 1 54750-44 sewcol@sew-eurodrive.com.co

Croatia			
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Czech Republic			
Sales	**Praha**	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. +420 a220121236 Fax +420 220121237 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz

Denmark			
Assembly **Sales** **Service**	**Kopenhagen**	SEW-EURODRIVEA/S Geminivej 28-30, P.O. Box 100 DK-2670 Greve	Tel. +45 43 9585-00 Fax +45 43 9585-09 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk

Estonia			
Sales	**Tallin**	ALAS-KUUL AS Paldiski mnt.125 EE 0006 Tallin	Tel. +372 6593230 Fax +372 6593231 veiko.soots@alas-kuul.ee

Finland			
Assembly **Sales** **Service**	**Lahti**	SEW-EURODRIVE OY Vesimäentie 4 FIN-15860 Hollola 2	Tel. +358 201 589-300 Fax +358 3 780-6211 http://www.sew-eurodrive.fi sew@sew.fi

Gabon			
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Great Britain			
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Assembly **Sales** **Service**	**Hong Kong**	SEW-EURODRIVE LTD. Unit No. 801-806, 8th Floor Hong Leong Industrial Complex No. 4, Wang Kwong Road Kowloon, Hong Kong	Tel. +852 2 7960477 + 79604654 Fax +852 2 7959129 sew@sewhk.com

Hungary			
Sales **Service**	**Budapest**	SEW-EURODRIVE Kft. H-1037 Budapest Kunigunda u. 18	Tel. +36 1 437 06-58 Fax +36 1 437 06-50 office@sew-eurodrive.hu

India			
Assembly **Sales** **Service**	**Baroda**	SEW-EURODRIVE India Pvt. Ltd. Plot No. 4, Gidc Por Ramangamdi · Baroda - 391 243 Gujarat	Tel. +91 265 2831086 Fax +91 265 2831087 mdoffice@seweurodriveindia.com
Technical Offices	**Bangalore**	SEW-EURODRIVE India Private Limited 308, Prestige Centre Point 7, Edward Road Bangalore	Tel. +91 80 22266565 Fax +91 80 22266569 salesbang@seweurodriveinindia.com
	Mumbai	SEW-EURODRIVE India Private Limited 312 A, 3rd Floor, Acme Plaza Andheri Kurla Road, Andheri (E) Mumbai	Tel. +91 22 28348440 Fax +91 22 28217858 salesmumbai@seweurodriveindia.com

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Sales **Service**	**Dublin**	Alperton Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. +353 1 830-6277 Fax +353 1 830-6458

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Assembly **Sales** **Service**	**Milano**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. +39 02 96 9801 Fax +39 02 96 799781 sewit@sew-eurodrive.it

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Sales	**Alytus**	UAB Irseva Merkines g. 2A LT-62252 Alytus	Tel. +370 315 79204 Fax +370 315 56175 info@irseva.lt http://www.sew-eurodrive.lt

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Mexico			
Assembly **Sales** **Service**	**Queretaro**	SEW-EURODRIVE, Sales and Distribution, S. A. de C. V. Privada Tequisquiapan No. 102 Parque Ind. Queretaro C. P. 76220 Queretaro, Mexico	Tel. +52 442 1030-300 Fax +52 442 1030-301 scmexico@seweurodrive.com.mx

Morocco			
Sales	**Casablanca**	S. R. M. Société de Réalisations Mécaniques 5, rue Emir Abdelkader 05 Casablanca	Tel. +212 2 6186-69 + 6186-70 + 6186-71 Fax +212 2 6215-88 srm@marocnet.net.ma

Netherlands			
Assembly **Sales** **Service**	**Rotterdam**	VECTOR Aandrijftechniek B.V. Industrieweg 175 NL-3044 AS Rotterdam Postbus 10085 NL-3004 AB Rotterdam	Tel. +31 10 4463-700 Fax +31 10 4155-552 http://www.vector.nu info@vector.nu

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Assembly **Sales** **Service**	**Auckland**	SEW-EURODRIVE NEW ZEALAND LTD. P.O. Box 58-428 82 Greenmount drive East Tamaki Auckland	Tel. +64 9 2745627 Fax +64 9 2740165 sales@sew-eurodrive.co.nz
	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz

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Assembly **Sales** **Service**	**Moss**	SEW-EURODRIVE A/S Solgaard skog 71 N-1599 Moss	Tel. +47 69 241-020 Fax +47 69 241-040 sew@sew-eurodrive.no

Peru			
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Poland			
Assembly **Sales** **Service**	**Lodz**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 PL-92-518 Lodz	Tel. +48 42 67710-90 Fax +48 42 67710-99 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl

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Assembly **Sales** **Service**	**Coimbra**	SEW-EURODRIVE, LDA. Apartado 15 P-3050-901 Mealhada	Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt

Romania			
Sales **Service**	**Bucuresti**	Sialco Trading SRL str. Madrid nr.4 011785 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 sialco@sialco.ro

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Assembly **Sales** **Service**	**St. Petersburg**	ZAO SEW-EURODRIVE P.O. Box 36 195220 St. Petersburg Russia	Tel. +7 812 3332522 +7 812 5357142 Fax +7 812 3332523 http://www.sew-eurodrive.ru sew@sew-eurodrive.ru

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Sales	**Beograd**	DIPAR d.o.o. Kajmakcalanska 54 SCG-11000 Beograd	Tel. +381 11 3088677 / +381 11 3088678 Fax +381 11 3809380 dipar@yubc.net

Singapore			
Assembly **Sales** **Service**	**Singapore**	SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. +65 68621701 Fax +65 68612827 sewsingapore@sew-eurodrive.com

Slovakia			
Sales	**Sered**	SEW-Eurodrive SK s.r.o. Trnavska 920 SK-926 01 Sered	Tel. +421 31 7891311 Fax +421 31 7891312 sew@sew-eurodrive.sk

Slovenia			
Sales **Service**	**Celje**	Pakman - Pogonska Tehnika d.o.o. UI. XIV. divizije 14 SLO – 3000 Celje	Tel. +386 3 490 83-20 Fax +386 3 490 83-21 pakman@siol.net

South Africa			
Assembly **Sales** **Service**	**Johannesburg**	SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013	Tel. +27 11 248-7000 Fax +27 11 494-3104 dross@sew.co.za
	Capetown	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 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700-3451 Fax +27 31 700-3847 dtait@sew.co.za

Spain			
Assembly **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. +34 9 4431 84-70 Fax +34 9 4431 84-71 sew.spain@sew-eurodrive.es

Sweden			
Assembly **Sales** **Service**	**Jönköping**	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. +46 36 3442-00 Fax +46 36 3442-80 http://www.sew-eurodrive.se info@sew-eurodrive.se

Switzerland			
Assembly **Sales** **Service**	**Basel**	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 41717-17 Fax +41 61 41717-00 http://www.imhof-sew.ch info@imhof-sew.ch

Thailand			
Assembly **Sales** **Service**	**Chon Buri**	SEW-EURODRIVE (Thailand) Ltd. Bangpakong Industrial Park 2 700/456, Moo.7, Tambol Donhuaroh Muang District Chon Buri 20000	Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.co.th

Tunisia			
Sales	**Tunis**	T. M.S. Technic Marketing Service 7, rue Ibn El Heithem Z.I. SMMT 2014 Mégrine Erriadh	Tel. +216 1 4340-64 + 1 4320-29 Fax +216 1 4329-76

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Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-34846 Maltepe ISTANBUL	Tel. +90 216 4419163 + 216 4419164 + 216 3838014 Fax +90 216 3055867 sew@sew-eurodrive.com.tr

Ukraine			
Sales **Service**	**Dnepropetrovsk**	SEW-EURODRIVE Str. Rabochaja 23-B, Office 409 49008 Dnepropetrovsk	Tel. +380 56 370 3211 Fax +380 56 372 2078 sew@sew-eurodrive.ua

USA			
Production **Assembly** **Sales** **Service**	**Greenville**	SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365	Tel. +1 864 439-7537 Fax Sales +1 864 439-7830 Fax Manuf. +1 864 439-9948 Fax Ass. +1 864 439-0566 Telex 805 550 http://www.seweurodrive.com cslyman@seweurodrive.com
Assembly **Sales** **Service**	**San Francisco**	SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, California 94544-7101	Tel. +1 510 487-3560 Fax +1 510 487-6381 cshayward@seweurodrive.com
	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 2107 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. +1 856 467-2277 Fax +1 856 845-3179 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. +1 937 335-0036 Fax +1 937 440-3799 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com
	Additional addresses for service in the USA provided on request!		

Venezuela			
Assembly **Sales** **Service**	**Valencia**	SEW-EURODRIVE Venezuela S.A. Av. Norte Sur No. 3, Galpon 84-319 Zona Industrial Municipal Norte Valencia, Estado Carabobo	Tel. +58 241 832-9804 Fax +58 241 838-6275 sewventas@cantv.net sewfinanzas@cantv.net

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SEW-EURODRIVE GmbH & Co KG
P.O. Box 3023 · D-76642 Bruchsal / Germany
Phone +49 7251 75-0 · Fax +49 7251 75-1970
sew@sew-eurodrive.com

→ **www.sew-eurodrive.com**