SEW EURODRIVE

MOVITOOLS – Connection via MPI Interface to SIMATIC S7

Edition

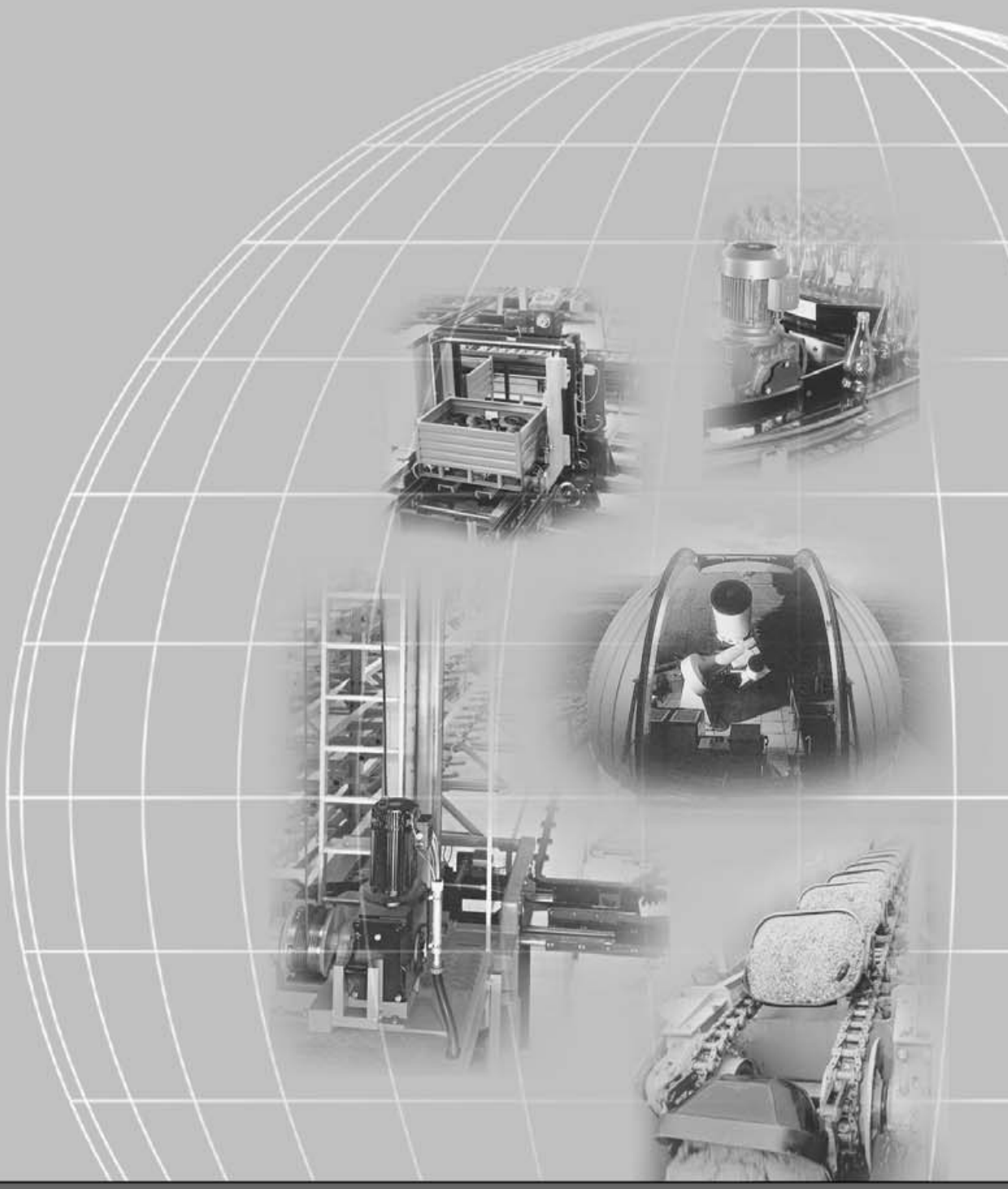
07/2003



Manual

1121 1512 / EN

SEW
EURODRIVE



SEW-EURODRIVE





1 System Description 4
1.1 General information 4
1.2 The FC_MoviTools function 5
1.3 Supported communication structures 6
1.4 Remote maintenance 7

2 System Prerequisites 8
2.1 Overview of components 8
2.2 Installing MOVITOOLS and Prodave MPI driver 8
2.3 Scope of delivery 9

3 SIMATIC S7 Project Planning 10
3.1 Project planning for drives via MPI interface 10
3.2 Copying the data blocks 10
3.3 Structure of the hardware data block 11
3.4 The FC_MoviTools function 13
3.5 Integration into an existing STEP7 project 14

4 Configuring and Starting MOVITOOLS 15
4.1 Configuration of the PG / PC interface 15
4.2 Starting MOVITOOLS with the MoviLinkSwitcher utility 16
4.3 Restricted functions of MOVITOOLS under PROFIBUS-DP 19

5 Appendix 20
5.1 Working with the user debugger 20

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** interface (**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).

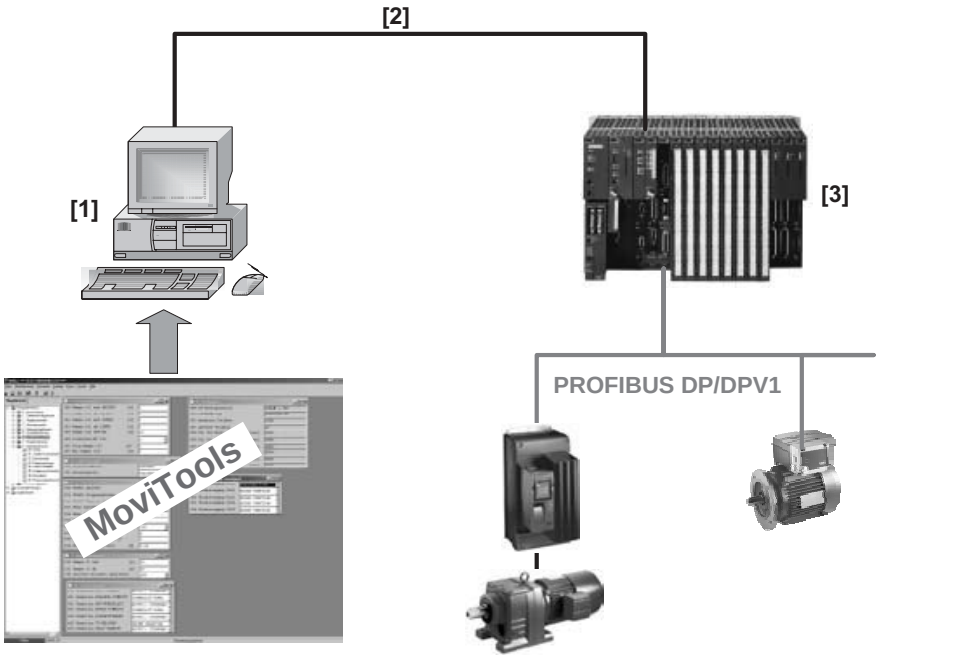


Figure 1: Example of a network connected via MPI interface

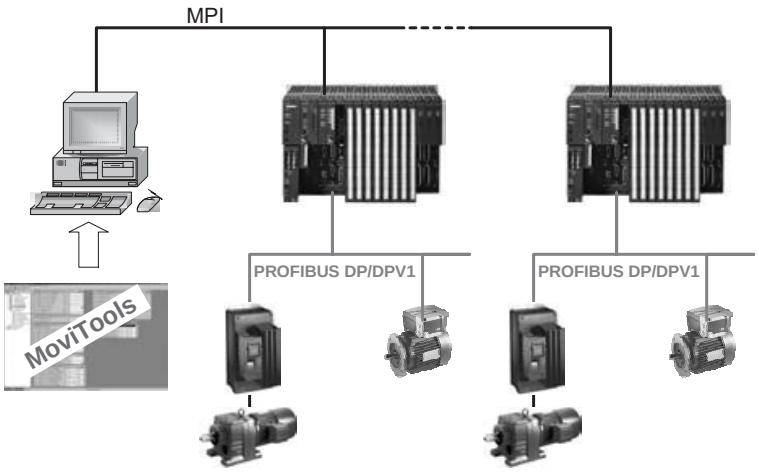
[1] SIMATIC S7 PG or standard PC with MPI interface or CP5611/5511

[2] MPI interface connection

[3] SIMATIC S7 with the *FC_MoviTools* function

1.3 Supported communication structures

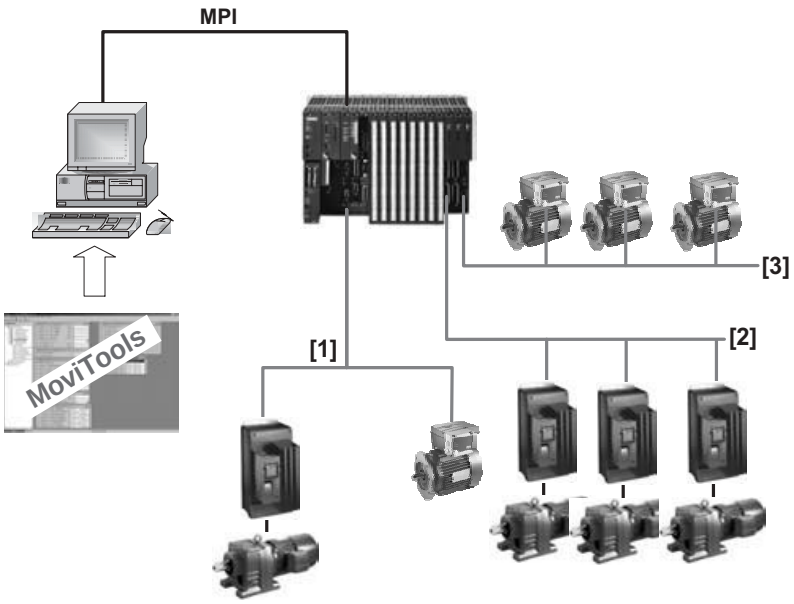
The MOVITOOLS software lets you operate various communication structures via the MPI interface. For example, SIMATIC S7 systems linked via the MPI bus supply all the information about drives connected via PROFIBUS-DP bus to a central diagnostics PC on which MOVITOOLS is installed. In this way, you can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



52139AXX

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

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



52140AXX

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

[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)

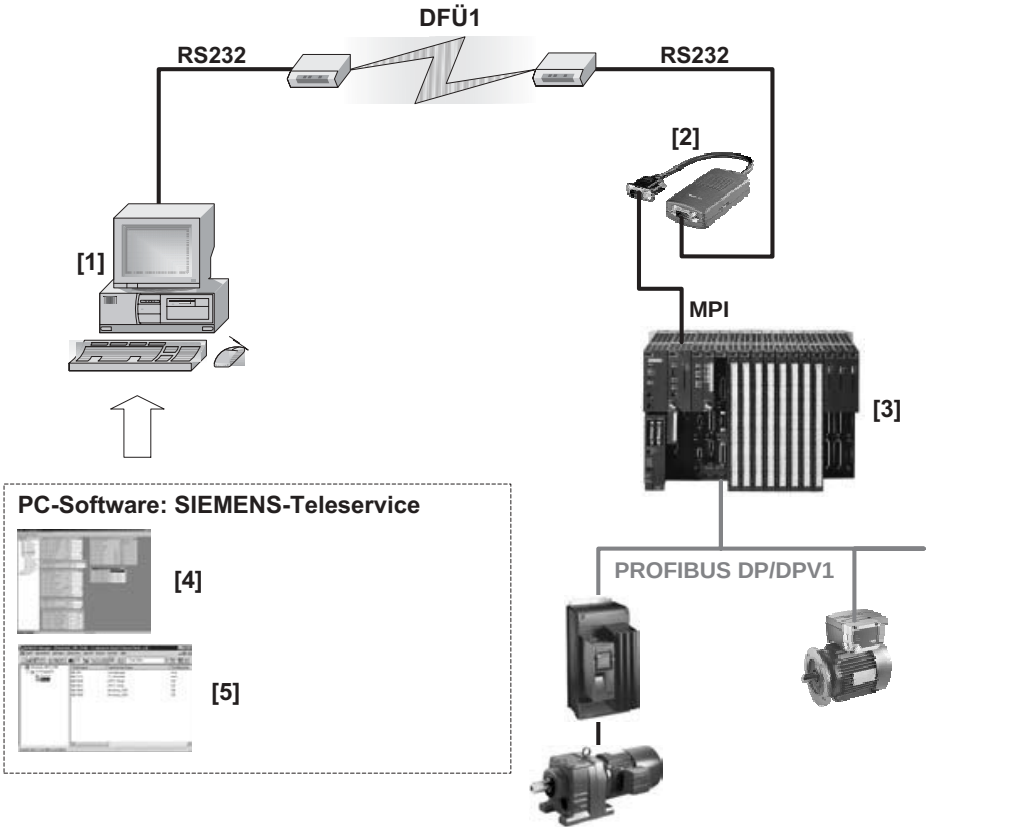


Figure 4: Remote maintenance via SIMATIC Teleservice

[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 interface for remote maintenance of the SEW-EURODRIVE drives

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

2 System Prerequisites

2.1 Overview of components

The tables below give you an overview of all Siemens components listed in this documentation. The prices are Siemens list prices as per the CA 01 04 / 2002 CD dated October 2002.

SIMATIC Net Prodave MPI licenses

The SIMATIC Net Prodave MPI V5.5 software package is used for linking MOVITOOLS via the MPI interface. **One** full license of this software is required for installation. Further copy licenses are required for additional installations on other PC / PG units. The copy license does not include any software or documentation, just another license contract.

Order number	Name	Comment	Price in € (Date: 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 or documentation)	380

Hardware components for the MPI link

Order number	Name	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, PCADAPTER V5.1	Serial adapter for RS-232 to MPI	286

Teleservice components (remote diagnostics)

Order number	Name	Comment	Price in €
6ES7972-0CA33-0XA0	SIMATIC S7, TS adapter V5.1	Hardware for teleservice	377
6ES7842-0CC02-0YE0	SIMATIC S7, Teleservice V5.1	Software for teleservice	506

2.2 Installing MOVITOOLS and Prodave MPI driver

MOVITOOLS is equipped with the MOVILINK MPI driver as standard starting with version 4.0. In addition, you have to install the driver for the SIMATIC Net Prodave MPI software package (V5.5).

2.3 Scope of delivery

You must expand your STEP7 project for operating MOVITOOLS using the MPI interface.

The following files are included in the scope of delivery:

The "X" characters in the file names below are wildcards for the version number.

Example: V400_DP.ZIP = STEP7 archive, version number 4.00

- **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. The following blocks are contained in this sample project:

OB1	Cyclical call of the *FC_Movitools*
FC99	*FC_Movitools*
DB60	Communication DB (CDB)
DB90	Hardware DB (HDB)

- **VXXX_DPV1.ZIP**

  This STEP7 archive contains the blocks for SIMATIC CPUs with DPV1 support. The following blocks are contained in this sample project:

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

Select this sample project as the basis for linking via the MPI interface if your S7 CPU supports the DPV1 system function blocks. You can set the parameters of SEW-EURODRIVE drives without DPV1 even with this *FC_MoviTools*.

- **readme_MovitoolsMPI.txt**

  This file contains additional information about the STEP7 archives.

3 SIMATIC S7 Project Planning

The *FC_MoviTools* function and two data blocks must be added to the STEP7 project to operate MOVITOOLS via the SIMATIC S7 MPI interface. SEW-EURODRIVE supplies two S7 projects for SIMATIC CPUs with and without DPV1 firmware. The following section describes the project planning and programming procedures.

3.1 Project planning for drives via MPI interface

Plan the SEW-EURODRIVE drives in the STEP7 hardware configuration in the normal way. Please note the following points for trouble-free operation of MOVITOOLS via the MPI interface:

- 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 project planning of SEW-EURODRIVE drives in STEP7 as well as the device project planning data stored 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 SEW-EURODRIVE drives distributed across several PROFIBUS master systems, these drives are not allowed to have the same PROFIBUS addresses. You cannot set the parameters for the drives using MOVITOOLS if the drives have the same PROFIBUS addresses. Make sure that the PROFIBUS addresses of **all** SEW-EURODRIVE drives on **one** SIMATIC S7 CPU are different.
- 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 the MPI interface.

3.2 Copying the data blocks

Both a communication data block (CDB) and a hardware data block (HDB) are required for operating MOVITOOLS. Copy these two data blocks into your project from the supplied SEW-EURODRIVE STEP7 project, because both blocks have a version string in their header.



The HDB and CDB data blocks are to occur only once in the SIMATIC S7 program. MOVITOOLS will not start via the MPI interface if there are copies of these blocks with the same version string in their header stored in the SIMATIC S7 under another data block number.

Communication data block

The communication data block (CDB) is used as a local data block for the SEW *FC_MoviTools* function. Make sure your S7 application does not contain any access calls to this data block. There is no need to make any manual entries in 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-tier PROFIBUS systems. Adapt this hardware data block to the hardware configuration of your project. The hardware data block is read in by MOVITOOLS via the MPI interface so that MOVITOOLS can obtain the list of connected SEW-EURODRIVE drive inverters.



You can select any numbers in the range from DB1 to DB254 for both data blocks. MOVITOOLS does not recognize any data block numbers higher than this range.

In addition, two instance (program invocation) data blocks are required by the S7 system function blocks SFB52 (RDREC) and SFB53 (WRREC) for DPV1 communication. You can also copy these blocks from the SEW-EURODRIVE sample project for DPV1, or you can create them in your project.

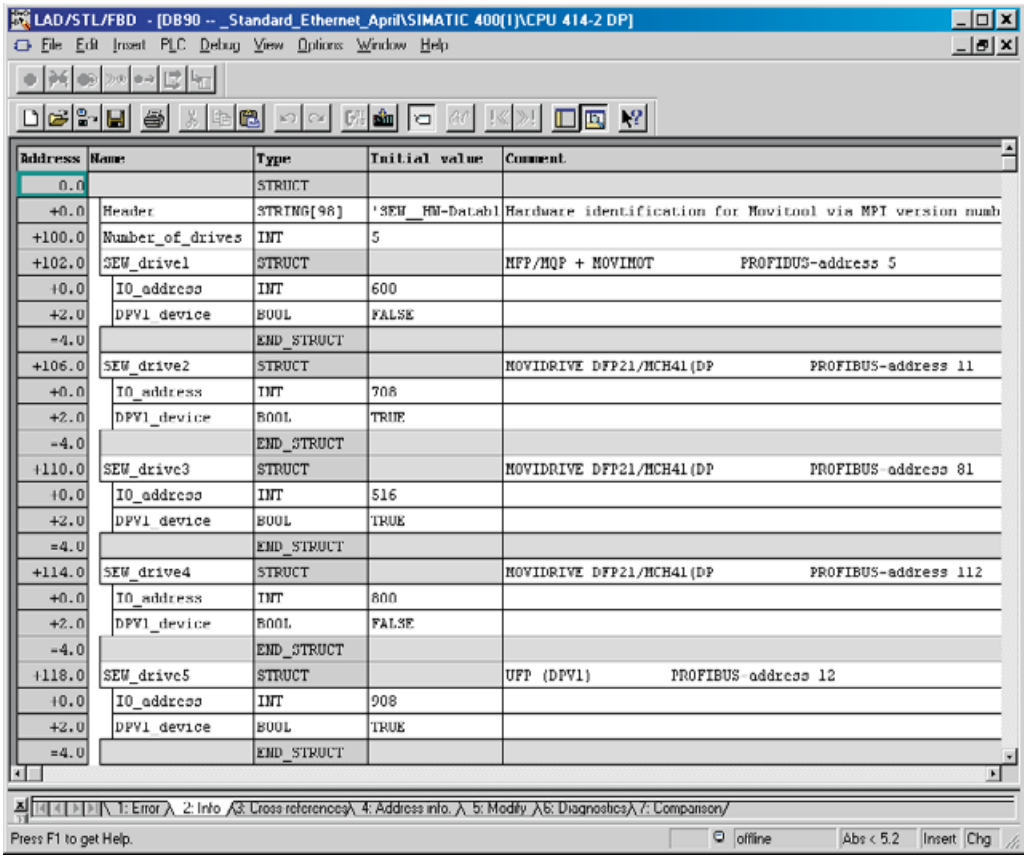
3.3 Structure of the hardware data block

In the hardware data block (HDB), you specify how many SEW-EURODRIVE inverters should have their parameters set using MOVITOOLS. Following this, 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 setting the parameters because then you will be able to use 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. It is possible to define up to 90 drives.
`SEW_drive1`	`STRUCT`	The structural elements listed below must be defined for each SEW-EURODRIVE drive.
`I/O_address`	`INT`	Periphery address (decimal) from hardware configuration • If ***DPV1_device = FALSE***, enter the first periphery address of the parameter channel from the hardware configuration here. Note the applicable project planning of the parameter channel in the STEP7 hardware configuration (see Sec. "Project planning for drives via MPI interface"). • If ***DPV1_device = TRUE***, enter the first periphery address of the process data from the hardware configuration here. **The input and output ranges of the parameter channel must be on the same addresses in the hardware configuration!**
`DPV1_device`	`BOOL`	**FALSE:** The drive does not support DPV1. Parameters are set using the parameter channel planned in the hardware configuration. Not all MOVITOOLS applications can be used in this operating mode. **TRUE (recommended):** The drive supports DPV1. The parameters are set using the S7 system function blocks SFB52 and SFB53. This operating mode is recommended, because all MOVITOOLS applications can only be used fully via DPV1.
	`END_STRUCT`	
`SEW_drive2`	`...`	



When filling in the hardware data block, make sure that you make the same entries in both the declaration and the data views. To simplify things, you can fill in the data block in STEP7 in the declaration view, then switch over to the data view and use the [Edit] / [Initialize Data Block] command to initialize the data view.



06464AXX

Figure 5: Sample hardware data block

3.4 The FC_MoviTools function

The *FC_MoviTools* proxy function is required for operating MOVITOOLS via the MPI interface. You can copy the function from one of the two STEP7 projects supplied by SEW-EURODRIVE depending on your CPU type and firmware status. If your CPU is DPV1-capable, take the function from the DPV1 project since all MOVITOOLS applications can only be used with DPV1.

In the sample project, FC100 is used as *FC_MoviTools*. However, you can use any other FC number instead.

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
```

Call 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 block for the SFB52 (RDREC) for DPV1 communication. Copy this data block from the sample project or create it in your project as an instance data block for SFB52.
InstDB_SFB53	BLOCK_DB	IN	Instance data block for the SFB53 (WRREC) for DPV1 communication. Copy this data block from the sample project or create it in your project as an instance data block for SFB52.
busy	BOOL	OUT	**TRUE:** Parameter exchange between MOVITOOLS and SEW-EURODRIVE inverter active. **During this period, no further parameter access is allowed to take place between the S7 application program and an SEW-EURODRIVE inverter!** **FALSE:** No parameter exchange between MOVITOOLS and SEW-EURODRIVE inverter.
version_error	BOOL	OUT	**TRUE:** There is a version conflict between *FC_Movi_Tools*, HDB and CDB, i.e. the blocks 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.

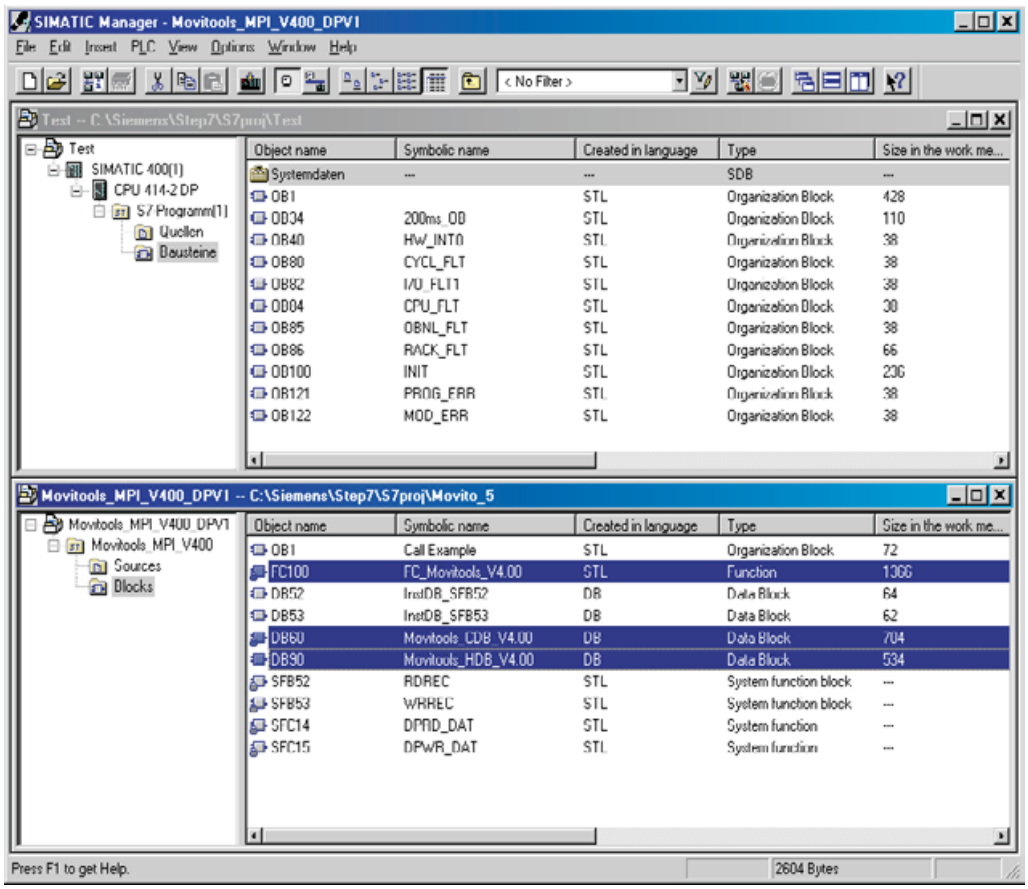
3.5 Integration into an existing STEP7 project

Please note:

- The "X" characters in the names are wildcards for the version number (e.g.: V400_DP.ZIP = Step7 archive with version number 4.00).
- Please bear in mind the restrictions when assigning data block numbers (→ Sec. "Copying the data blocks").

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

- Unpack and open the STEP7 archive VXXX_DP.ZIP or VXXX_DPV1.zip in the SIMATIC Manager using [File] / [Archive].
- If necessary, assign different DB or FC numbers for the blocks FC_Movitools_VX.XX, Movitools_HDB_VX.XX and Movitools_CDB_VX.X (select the block, click the right mouse button, select the [Rename] command).
- Copy the blocks into 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 in accordance with Sec. "The FC_MoviTools function" (e.g. call FC100).
- 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").
- Load your STEP7 project with its MOVITOOLS expansion into the PLC.



06466AXX

Figure 6: Copying the blocks into an existing STEP7 project

4 Configuring and Starting MOVITOOLS

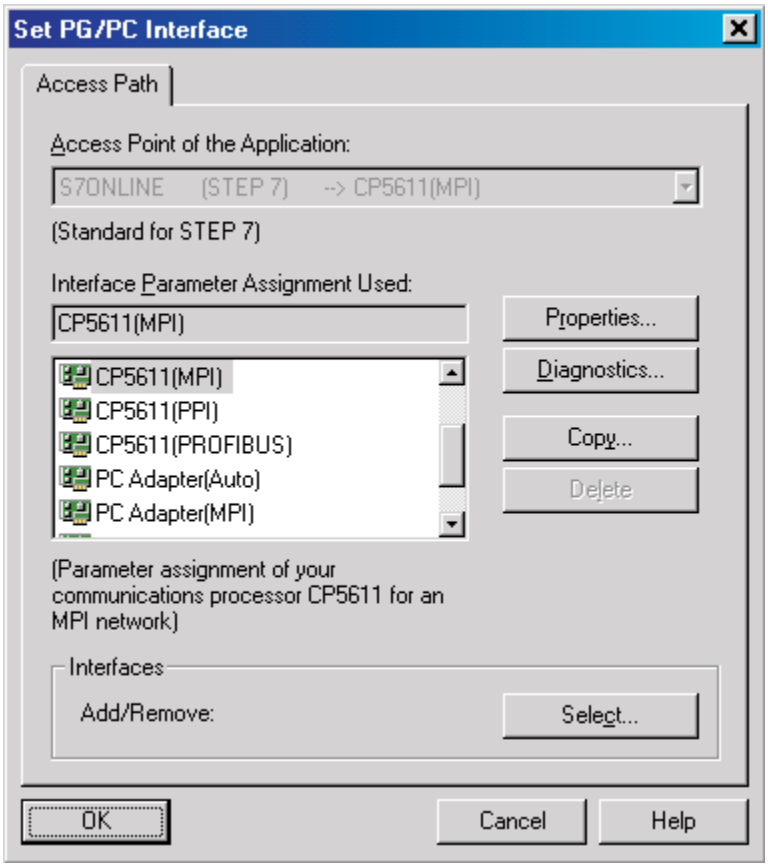
4.1 Configuration of the PG / PC interface

You will first have to configure the PG / PC interface to establish a communication link between PG / PC and the SIMATIC S7. To do this, you will have to install one of the Siemens program packages listed below.

- SIMATIC STEP7 as of V5.1 or
- SIMATIC Net PRODAVE MPI as of V5.5 or
- Siemens Teleservice as of V5.1

The configuration program is located in the Start menu at:

[Settings] / [Control Panel] / [Set PG/PC Interface]



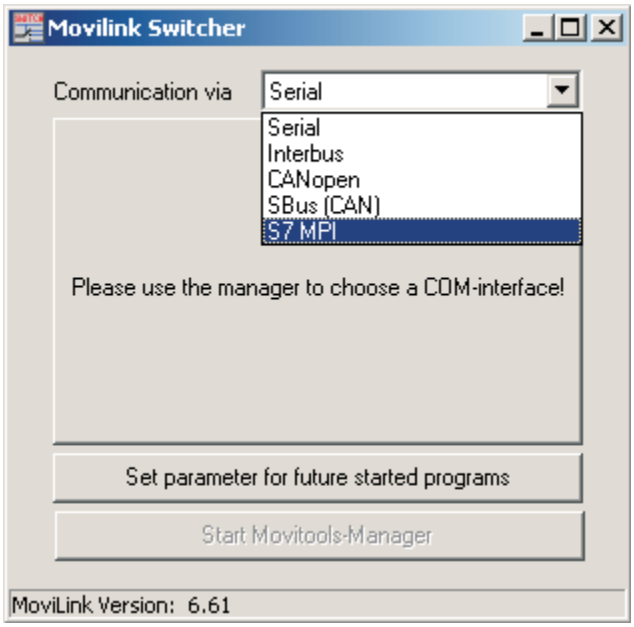
06467AXX

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

Configure the interface in accordance with your system setup.

4.2 Starting MOVITOOLS with the MoviLinkSwitcher utility

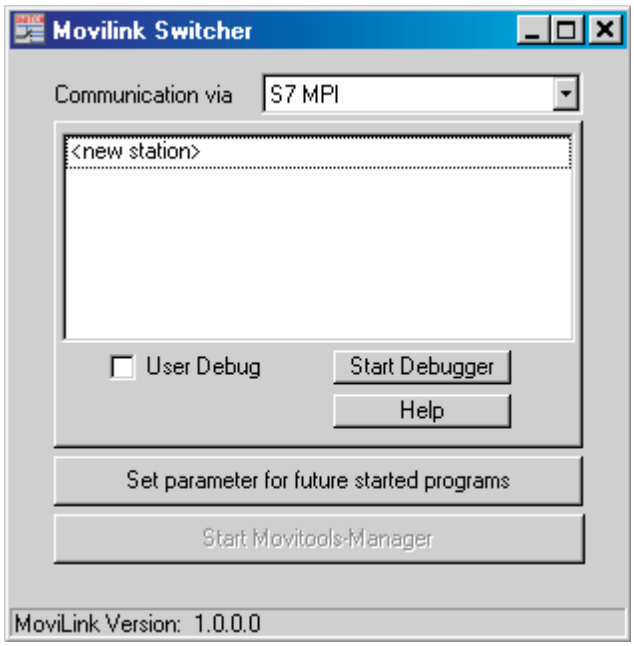
Before you start the MOVITOOLS Manager, you must start the `MoviLinkSwitcher` utility from the Start menu. By doing so, you redirect the communication link from MOVITOOLS to the MPI interface.



06468AXX

Figure 8: Redirecting the communication link via the S7 MPI interface

- In the "Communication via" list box, select "S7 MPI" as the communication channel.



06469AXX

Figure 9: Addressing the S7 MPI interface

- Double-click "new station" to create a new S7 station.

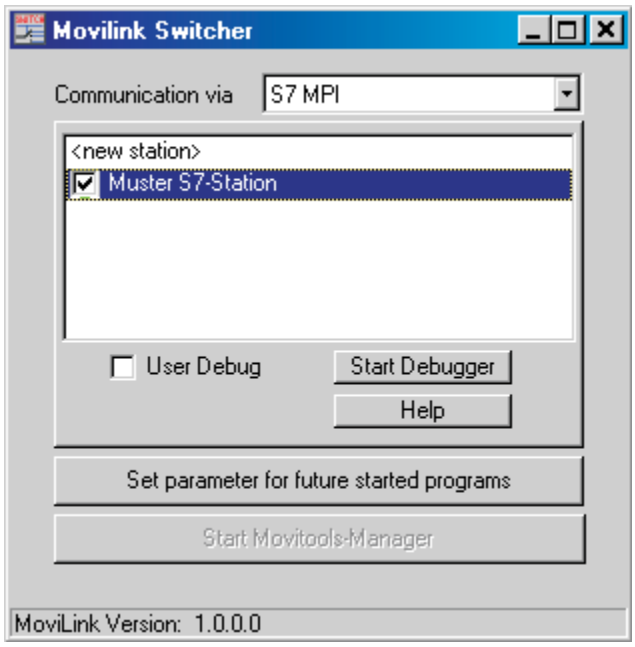


06470AXX

Figure 10: Entry screen for the new communication link

- In the "MPI Station Data" dialog box, enter the communication data for the new MPI connection to your S7 CPU (→ table below)

MPI addressing parameters	Meaning
MPI address	MPI address of the S7
Segment ID	Segment ID of the S7 (default = 0)
Slot	Number of the slot in which the S7 CPU with MPI interface is installed (count if necessary)
Rack	Number of the rack (default = 0)



06471AXX

Figure 11: Selecting the communication link for the S7 MPI interface

- Select the communication link you want (here: Sample S7 station) and then click the "Set parameter for future started programs" button to activate the "S7 MPI" communication channel for all MOVITOOLS applications which are started subsequently.

- The "Start Movitools-Manager" button became active after you redirected to the MPI interface 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 now corresponds to the drives' PROFIBUS addresses.



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

Problems when establishing the connection to the MPI interface

Please check the following settings if you are unable to establish an online connection to the SEW-EURODRIVE drives:

- Number of inverters and address specification in the hardware data block (declaration/data 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. To do this, you must select the [User Debug] option when defining the MPI connection in `MoviLinkSwitcher` and call up the debugger using the [Start Debugger] button. The remainder of the procedure is described in the "Appendix" section.



It is not possible to connect two or more different PGs/PCs to the same PLC at the same time with "MOVITOOLS via MPI interface."

4.3 Restricted functions of MOVITOOLS under PROFIBUS-DP

MOVITOOLS under PROFIBUS DPV1 offers expanded functions for the acyclical exchange of parameter data. To do this, MOVITOOLS under PROFIBUS DP uses the parameter channel with restricted functions.

The following MOVITOOLS functions are **not available under PROFIBUS DPV0**:

- **MOVIDRIVE drive inverter®**
  - MOVITOOLS Scope
  - Reading out, storing, loading and displaying the electronic nameplate with MOVIDRIVE® *compact* MCH...
  - Storing parameter sets with more than one electronic cam
  - Using the "data backup" function in MOVITOOLS Manager

- **MOVITRAC® 07 frequency inverter via PROFIBUS gateway UFP11A**
  - MOVITOOLS Scope
  - Using the "data backup" function
  - Storing parameter sets with IPOS$^{plus®}$ programs which were created using the LOGODrive graphical programming interface
  - Using the "data backup" function in MOVITOOLS Manager
  - Communication with MOVITRAC® 07 frequency inverters which are connected to PROFIBUS DPV0 via UFP11A

MOVITOOLS can be used without restrictions if PROFIBUS DPV1 components (master **and** slave) and the function blocks in the VXXX_DPV1.ZIP file are used.

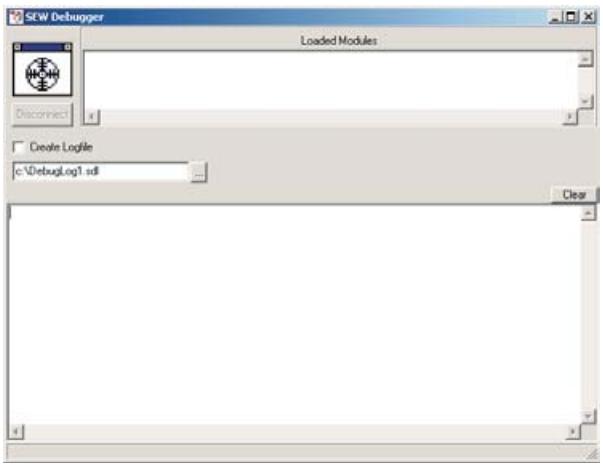
5 Appendix

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 user debugger for troubleshooting purposes if problems occur when MOVITOOLS is used via the MPI interface

- 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 figure).



06472AXX

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

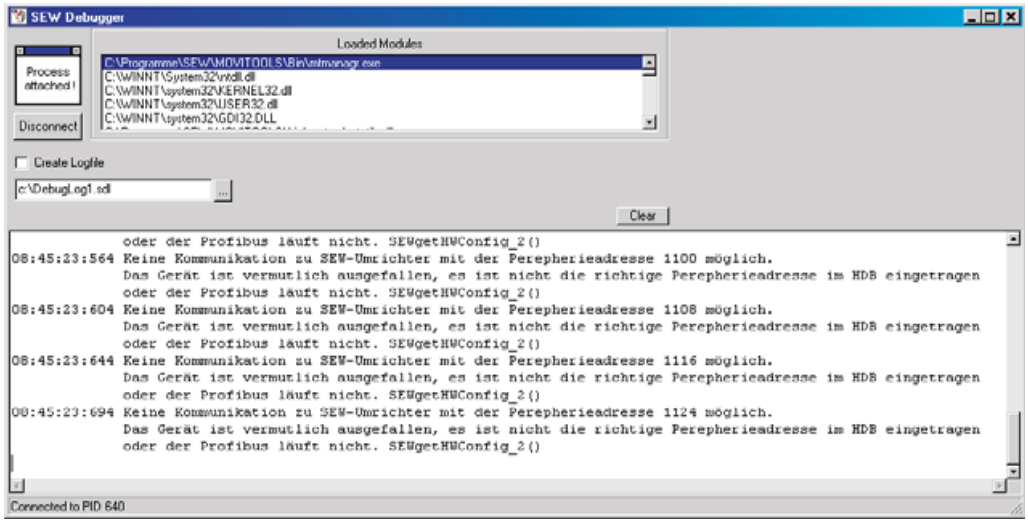


06473AXX

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).



06474AXX

- Activate the [Create Logfile] checkbox if you want to save the information in a file. All subsequent debugging information is automatically stored 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.

Address List

Germany			
Headquarters **Production** **Sales** **Service**	**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 Electronics: Tel. +49 171 7210791 Service Gear Units and Motors: Tel. +49 172 7601377
Assembly **Service**	**Garbsen** (near Hannover)	SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 40-42 D-30823 Garbsen P.O. Box Postfach 110453 · D-30804 Garbsen	Tel. +49 5137 8798-30 Fax +49 5137 8798-55 scm-garbsen@sew-eurodrive.de
	Kirchheim (near München)	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 D-85551 Kirchheim	Tel. +49 89 909552-10 Fax +49 89 909552-50 scm-kirchheim@sew-eurodrive.de
	Langenfeld (near Düsseldorf)	SEW-EURODRIVE GmbH & Co KG Siemensstraße 1 D-40764 Langenfeld	Tel. +49 2173 8507-30 Fax +49 2173 8507-55 scm-langenfeld@sew-eurodrive.de
	Meerane (near Zwickau)	SEW-EURODRIVE GmbH & Co KG Dänkritzer Weg 1 D-08393 Meerane	Tel. +49 3764 7606-0 Fax +49 3764 7606-30 scm-meerane@sew-eurodrive.de
	Additional addresses for service in Germany provided on request!		

France			
Production **Sales** **Service**	**Haguenau**	SEW-USOCOME 48-54, route de Soufflenheim B. P. 185 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**	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@mbox.infotel.bg

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			
Assembly **Sales** **Service**	**Santiago de Chile**	SEW-EURODRIVE CHILE LTDA. Las Encinas 1295 Parque Industrial Valle Grande LAMPA RCH-Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 75770-00 Fax +56 2 75770-01 sewsales@entelchile.net

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 http://www.sew.com.cn
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@andinet.com

Croatia			
Sales **Service**	**Zagreb**	KOMPEKS d. o. o. PIT Erdödy 4 II HR 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@net.hr

Czech Republic			
Sales	**Praha**	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. +420 220121234 + 220121236 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

Finland			
Assembly **Sales** **Service**	**Lahti**	SEW-EURODRIVE OY Vesimäentie 4 FIN-15860 Hollola 2	Tel. +358 3 589-300 Fax +358 3 7806-211 http://www.sew-eurodrive.fi sew@sew-eurodrive.fi

Gabon			
Sales	**Libreville**	Electro-Services B.P. 1889 Libreville	Tel. +241 7340-11 Fax +241 7340-12

Great Britain			
Assembly **Sales** **Service**	**Normanton**	SEW-EURODRIVE Ltd. Beckbridge Industrial Estate P.O. Box No.1 GB-Normanton, West- Yorkshire WF6 1QR	Tel. +44 1924 893-855 Fax +44 1924 893-702 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk

Greece			
Sales **Service**	**Athen**	Christ. Boznos & Son S.A. 12, Mavromichali Street P.O. Box 80136, GR-18545 Piraeus	Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 http://www.boznos.gr Boznos@otenet.gr

Hong Kong			
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 sew-eurodrive.voros@matarnet.hu



India			
Assembly **Sales** **Service**	**Baroda**	SEW-EURODRIVE India Pvt. Ltd. Plot No. 4, Gidc Por Ramangamdi · Baroda - 391 243 Gujarat	Tel. +91 265 2831021 Fax +91 265 2831087 sew.baroda@gecsl.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 sewbangalore@sify.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 sewmumbai@vsnl.net
Ireland			
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
Italy			
Assembly **Sales** **Service**	**Milano**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. +39 2 96 9801 Fax +39 2 96 799781 sewit@sew-eurodrive.it
Ivory Coast			
Sales	**Abidjan**	SICA Ste industrielle et commerciale pour l'Afrique 165, Bld de Marseille B.P. 2323, Abidjan 08	Tel. +225 2579-44 Fax +225 2584-36
Japan			
Assembly **Sales** **Service**	**Toyoda-cho**	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Toyoda-cho, Iwata gun Shizuoka prefecture, 438-0818	Tel. +81 538 373811 Fax +81 538 373814 sewjapan@sew-eurodrive.co.jp
Korea			
Assembly **Sales** **Service**	**Ansan-City**	SEW-EURODRIVE KOREA CO., LTD. B 601-4, Banweol Industrial Estate Unit 1048-4, Shingil-Dong Ansan 425-120	Tel. +82 31 492-8051 Fax +82 31 492-8056 master@sew-korea.co.kr
Lebanon			
Sales	**Beirut**	Gabriel Acar & Fils sarl B. P. 80484 Bourj Hammoud, Beirut	Tel. +961 1 4947-86 +961 1 4982-72 +961 3 2745-39 Fax +961 1 4949-71 gacar@beirut.com
Luxembourg			
Assembly **Sales** **Service**	**Brüssel**	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
Macedonia			
Sales	**Skopje**	SGS-Skopje / Macedonia "Teodosij Sinactaski" 66 91000 Skopje / Macedonia	Tel. +389 2 385 466 Fax +389 2 384 390 sgs@mol.com.mk
Malaysia			
Assembly **Sales** **Service**	**Johore**	SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia	Tel. +60 7 3549409 Fax +60 7 3541404 kchtan@pd.jaring.my

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

New Zealand			
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

Norway			
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			
Assembly **Sales** **Service**	**Lima**	SEW DEL PERU MOTORES REDUCTORES S.A.C. Los Calderos <FmSdata>[Idot] 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. +51 1 3495280 Fax +51 1 3493002 sewperu@terra.com.pe

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

Portugal			
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 71222 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 sialco@sialco.ro

Russia			
Sales	**St. Petersburg**	ZAO SEW-EURODRIVE P.O. Box 263 RUS-195220 St. Petersburg	Tel. +7 812 5357142 +812 5350430 Fax +7 812 5352287 sew@sew-eurodrive.ru

Senegal			
Sales	**Dakar**	SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar	Tel. +221 849 47-70 Fax +221 849 47-71 senemeca@sentoo.sn

Singapore			
Assembly **Sales** **Service**	**Singapore**	SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. +65 68621701 ... 1705 Fax +65 68612827 Telex 38 659 sales@sew-eurodrive.com.sg



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 11 494-2311 ljansen@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 EI Heithem Z.I. SMMT 2014 Mégrine Erriadh	Tel. +216 1 4340-64 + 1 4320-29 Fax +216 1 4329-76

Turkey			
Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-81540 Maltepe ISTANBUL	Tel. +90 216 4419163 + 216 4419164 + 216 3838014 Fax +90 216 3055867 sew@sew-eurodrive.com.tr

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 +1 856 467-3792 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







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

SEW EURODRIVE

