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1.1 09/1999 TD05	00410149	Bilingual German/English
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1 Preface and general information

The program **Global Drive Control (GDC)** is used for convenient commissioning and parameterization of the Global Drive Control series 8200 and 9300.

The primary features of **GDC** are:

- Guided commissioning using drive-specific dialogs.
- Menu-assisted parameterization. Simultaneous representation of menus and assigned codes similar to Windows Explorer.
- Parameterization with and without direct controller connection (online/offline operation), thus enabling preparatory parameterization already in the office.
- Simplified function block parameterization for 93xx controllers.
- Automatic controller identification when operated at a serial port.
- Communication via serial interface RS232/485, optical fiber ring or system bus possible.
- Integrated interface for OPC (OLE for Process Control so that GDC - as OPC client - is able to access bus servers supported by Lenze DriveServer.
- Simplified troubleshooting through diagnostic function.
- Monitor windows for the representation of 8 parameters which are updated periodically. The values can be represented by different forms (point instrument, bar, trend, number).
- Oscilloscope function for 93xx controller.
(93xx Servo as from software version 2.0, 93xx Vector as from software version 1.0)
- Function block editor for 93xx controller
- Input assistant for motor data.
- PC parameter set comparison with Lenze default setting or the momentary drive setting, to determine which parameters were changed.
- Complete parameter set transfer between PC and controller using one command.
- Hardcopy of parameter settings for documentation purposes.
- Saving/Loading the drive configuration for the exchange among different computers.
- Convenient online help system.

1.1 Conventions used

This Manual uses the following conventions to distinguish between different types of information:

Type of information	Marking	Example
Names of dialog boxes, input fields and selection lists	<i>italics</i>	The dialog box <i>Options...</i>
Buttons	bold	Click OK , to...
Menu commands	bold	Use the command Search to... If several commands must be used in sequence to carry out a function, then the individual commands are separated by an arrow: Select Options → Tools , to...
Keyboard commands	bold	Use <F1> to open the online help. If a command requires a combination of keys, then a "+" is placed between the key symbols: With <Shift>+<ESC> you can...



Global Drive Control





1.2 Layout of the safety information

- All safety information have a uniform layout:
 - The icon characterises the type of danger.
 - The signal word characterises the severity of danger.
 - The note describes the danger and suggests how to avoid the danger.



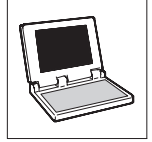
Signal word

Note

	Icons used		Signal words	
Warning of danger to persons		Warning of hazardous electrical voltage	Danger!	Warns of impending danger . Consequences if disregarded: Death or severe injury.
		Warning of a general danger	Warning!	Warns of potential, very hazardous situations . Possible consequences if disregarded: Death or severe injury.
	Caution!		Warns of potential, hazardous situations . Possible consequences if disregarded: Light or minor injuries.	
Warning of damage to material			Stop!	Warns of potential damage to material . Possible consequences if disregarded: Damage of the controller/drive system or its environment .
Other notes			Tip!	Designates a general, useful note. If observed, it will make handling the product easier.

1.3 Scope of supply

Scope of supply	Important
<ul style="list-style-type: none"> 1 CD-ROM "Global Drive Control" This Manual Supplement "Licence and contract terms" 	<p>After receipt of the delivery, check immediately whether the items delivered match the accompanying papers. Lenze does not accept any liability for deficiencies claimed subsequently.</p> <p>Claim</p> <ul style="list-style-type: none"> visible transport damage immediately to the forwarder. visible deficiencies/incompleteness immediately to your Lenze representative.



2 System requirements

The following minimum requirements on hardware and software must be met in order to use GDC:

- Microsoft® Windows® 98/Me, Windows NT® 4.0 (as of Service Pack 5), Windows 2000 (as of Service Pack 2) or Windows XP
- IBM compatible PC with Intel® Pentium®-333 processor
- 128 MB RAM
- 180 MB free hard disk capacity
- CD-ROM drive
- Free ports according to the requirements of the fieldbus connection module used

We recommend to use a mouse.

2.1 Ports supported by Global Drive Control

The communication with the target system (controller, Drive PLC, etc.) requires a fieldbus-specific interface module for the PC and the corresponding fieldbus modules for the drives to be connected. The following table gives an overview of the transfer media which are supported by GDC.

Bus system	PC port	Max. number of target systems	Required hardware components
System bus (CANopen)	Parallel port (LPT port)	63	System bus module incl. connection cable and voltage-supply adapter <ul style="list-style-type: none"> • for DIN keyboard connection (EMF2173IB) • for PS/2 keyboard connection (EMF2173IBV002)
LECOM	Serial port (COM port)	1 (RS232)	<ul style="list-style-type: none"> • Fieldbus module EMF 2102IB V001 or V004 • PC system cable RS232/485, 5m (EWL0020)
		31 (RS485)	<ul style="list-style-type: none"> • Fieldbus module EMF 2102IB V001 • PC system cable RS232/485, 5m (EWL0020) • Interface converter RS232/RS485 with automatic reversal (not available from Lenze; for sources of supply see appendix). (📖 68)
		52 (optical fibre)	<ul style="list-style-type: none"> • Fieldbus module EMF 2102IB V003 • Optical fibre adapter (EMF2125IB) • Power supply for adapter (EJ0013) • Optical fibre cable (EWZ0007)
Other bus systems	Field bus specific PC interface module with OPC bus server according to DRIVECOM specification. <ul style="list-style-type: none"> • For comprehensive information on the use of GDC as OPC client refer to the appendix. (📖 64) 		

Connect the target system with the PC via the suitable interface PC connection module to communication with the target system in the GDC online mode.

- Information on the connection can be obtained from the operating instructions of the field bus module or the PC interface module.



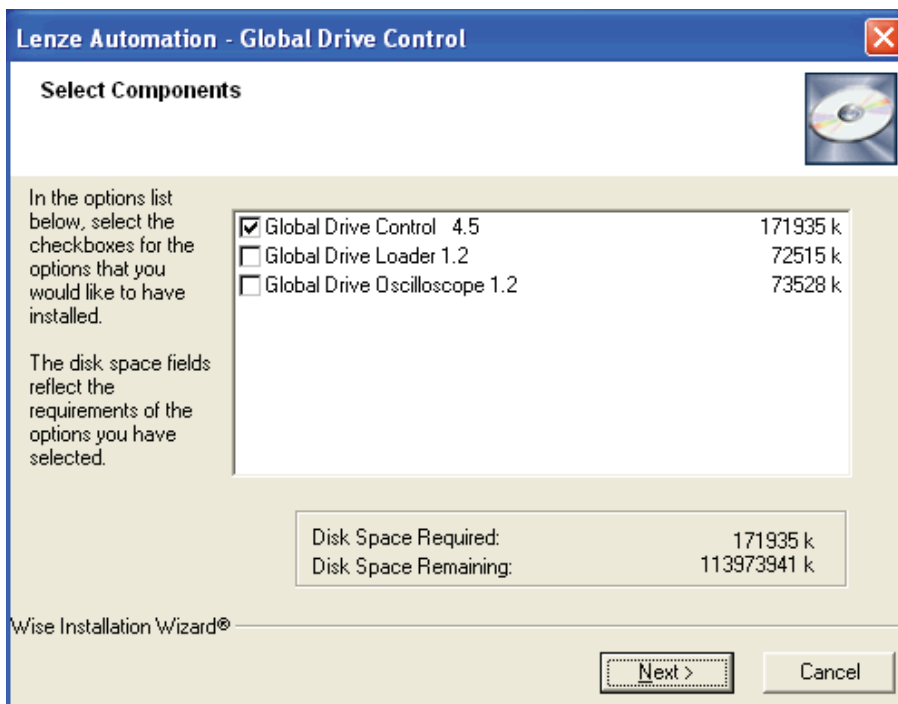
3 Software installation

Proceed as follows to install the GDC software on your PC:

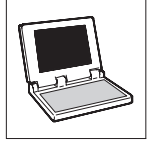
1. Start Windows.
2. Insert the CD "Global Drive Control" into your CD-ROM drive.
If the auto-start function of your CD-ROM drive is activated, the installation program will be started automatically. If so, proceed with step 5.
3. Select **Run...** from the start menu.
4. Enter the letter for your CD-ROM drive followed by **:\setup.exe** (e.g. **"e:\setup.exe"**) and confirm the entry by clicking **Ok**.
5. Follow the instructions of the installation program.

3.1 Component selection

The installation program enables you to select the components you want to install:



Component	Info
Global Drive Control	Software for convenient commissioning and parameterization of the Global Drive Control series 8200 and 9300.
Global Drive Loader	Software to transfer PLC programs, parameter sets and application data to Lenze controllers/PLCs using a PC.
Global Drive Oscilloscope	Software for recording and saving measured values in Lenze PLCs.



4 First steps with Global Drive Control

4.1 General

The program GDC distinguishes between online and offline mode.

- **Offline:**
No connection with the target system. This mode is useful for preparatory parameterization in the office or for documentation purposes. No components but a PC are required.
- **Online:**
GDC communicates via the serial/paramellel PC port or via a fieldbus-specific PC connection module with the target system. This mode is required for the commissioning of the target system.



Note

The GDC default setting is serial port COM2 and system bus (CAN) port (500kBaud/parameter channel 2) when "system bus (CAN) connection" has been selected for installation.

- If you want to use another port you have to configure it in the GDC communication settings. (Refer also to the tip on the next page.)
- Further information on target system communication can be obtained from the GDC online help.



4.2 Starting the program

Select **Programs**→**Lenze**→**Global Drive Control**→**Global Drive Control**.

- After the first program start, the dialog box *Search drives* is displayed for the selected port. You can search here online for drives or change to the offline mode.

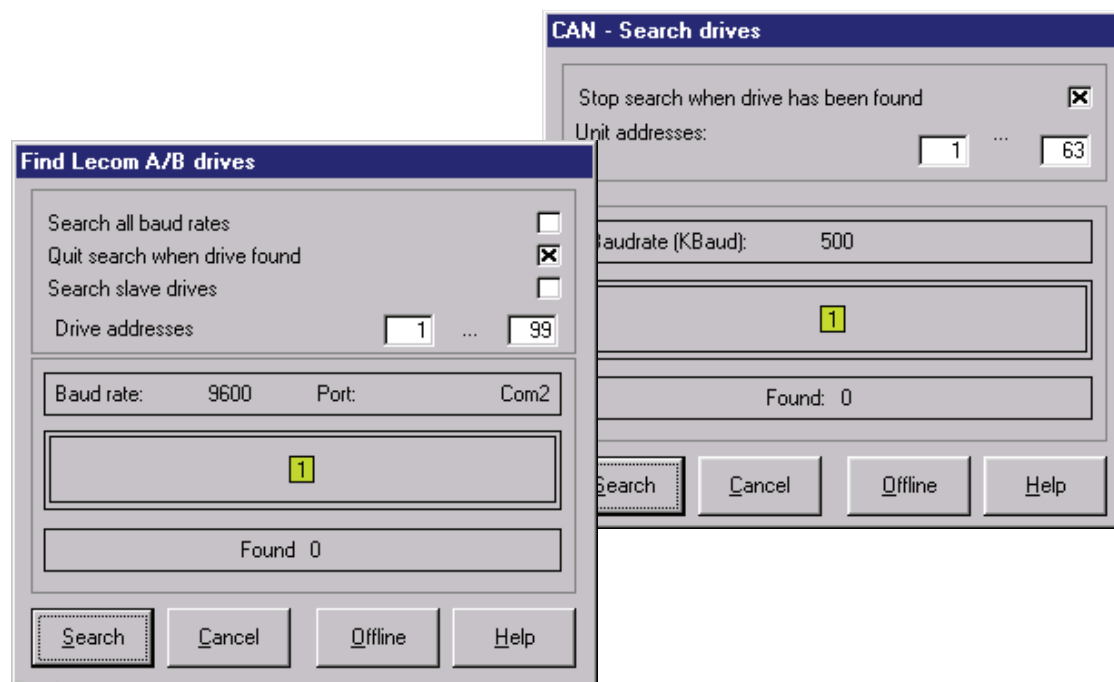


Abb. 7 Dialog box "Search drives" for Lecom-A/B or system bus (CAN)

Button	Function/Notes	
Search	Searches for target systems connected to this port and starts GDC in online mode.	43
Cancel	Closes the dialog box and starts GDC in Online mode , without searching for connected target systems.	43
Offline	Closes the dialog box and starts GDC in Offline mode , without searching for connected target systems.	45
Help	Opens GDC online help with information on this dialog box.	



Tip!

If you use a port other than the selected one:


1. Click the button **Cancel**, to close the dialog box *Search drives*.
2. Select **Options**→**Communication**, to change communication settings.
3. Start a new search. (See next page)

For further information on communication settings refer to the GDC online help.



4.3 Find target system (Online mode)

The dialog box *Find drives* is opened automatically when GDC is started in online mode.

- You can call the dialog box *Find drives* using one of the following possibilities:
 - Press the function key **F2**
 - Select **Drive→Find**.
 - In the toolbar, click on the button 

To search a drive you can enter different settings which are dependent on the port used: (see also Abb. 7)

- **Browse all baud rates:** (only for Lecom-A/B)
Activate the check box to browse all baud rates from 1200 to 19200 baud.
- **Quit search when drive found:**
Activate the check box to cancel the search once a target system has been found.
- **Search drives:** (only for Lecom-A/B)
Activate the check box to include slave drives in your search.
- **Drive addresses:**
Enter the range of controller addresses which you want to find.

Click the button **Search** to start searching or click **Cancel** to abort.



Tip!

GDC automatically tries to allocate device descriptions to the target systems found.

- If only one target system was found and a device description could be allocated, the device description is loaded immediately.
- If the automatic allocation to the device description fails a dialog box appears in which you can select the suitable device description manually.
Further information on manual selection
 - of a basic controller can be found in section 4.4. (📖 45)
 - of an AIF module can be found in section 4.5. (📖 46)
 - of FIF modules can be found in section 4.6. (📖 48)



Global Drive Control

Window "Drives connected to bus"

All target systems found on or allocated to the target system including available AIF/FIF modules are listed in the window *Drives connected to bus*.

- If the window should not appear select **Window→Drives connected to bus** to show the window.

Description	Software version	Address
Servo inverter 9300	2.1	[1]
└ No AIF-Module/Keypad		
Inverter 8200 vector 0,25kW - 11kW	2.2	[8]
└ 2175IB DeviceNet/CANopen AIF	0.9	
└ Function module CAN	0.0	
terminal extension 9374	1.0	[16]
Servo PLC 9300	1.3	[43] JumpingLED
└ No AIF-Module/Keypad		
Positioning control 9300	2.2	[44]
└ No AIF-Module/Keypad		

Abb. 8 Window *Drives connected to bus*

Doubleclick the target system which you want to parameterize with GDC.

- The corresponding device description file will be loaded into GDC and the dialog for short commissioning or the parameter window will be displayed.
 - More information on the dialog for short commissioning can be found in section 4.7. (📖 50)
 - More information on the parameter window can be found in section 4.8.6. (📖 56)



Tip!

If you click an entry with the right mousebutton a context menu with a command for manual allocation of the device description file will appear.


With the context menu command:

- **Manipulate basic controller** you call the dialog box *Assign device description to the basic controller*. (📖 45)
- **Manipulate AIF** you call the dialog box *Assign AIF module to the basic controller*. (📖 46)
- **Manipulate FIF** you call the dialog box *Assign FIF module(s) to the basic controller*. (📖 48)



4.4 Select target system manually (offline mode)

Proceed as follows to select the target system manually in offline mode:

1. Call the dialog box *Assign device description to the basic controller* using one of the following possibilities:
 - Press the function key **F3**
 - Select **Controller→Select**
 - In the toolbar, click on the button 
2. Select the basic controller from the list field *Controller description* from the list:

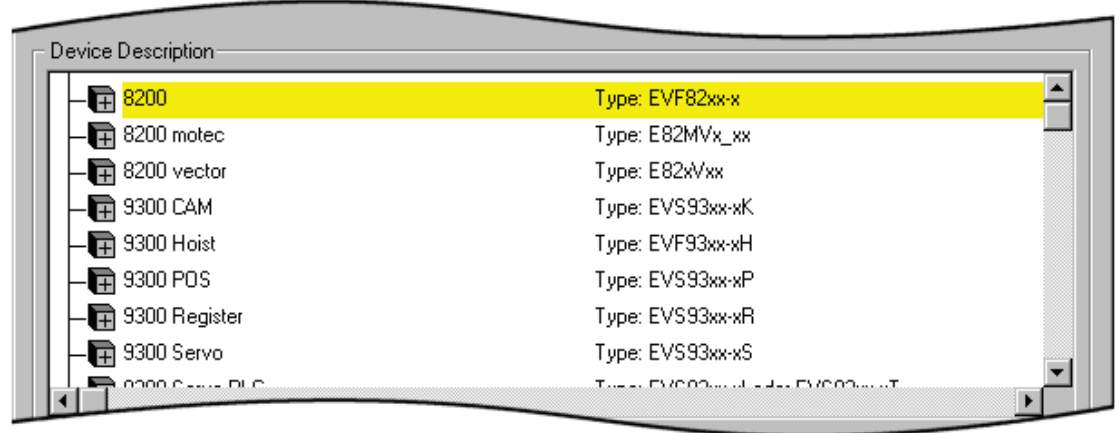






Abb. 9 List field *Device description* in the dialog box *Assign device description to the basic controller*

Dialog box icons and their meanings	
	Marks a non-selected entry. <ul style="list-style-type: none"> • Click the icon to select this entry.
	Marks a selected entry <ul style="list-style-type: none"> • The box at the bottom display more information on this entry.
	Marks an entry which contains further (hidden) entries. <ul style="list-style-type: none"> • Click the icon to show the subordinated entries.
	Marks an entry which contains further (shown) entries. <ul style="list-style-type: none"> • Click the icon to hide the subordinated entries.

Dialog box buttons and their meanings	
Next	Go on to the dialog box <i>Assign AIF module to the basic controller</i> .
Cancel	Cancel allocation, closes dialog box without accepting changes.
Find (path)	Loading a controller description file (*.pdb) via the PC file system. <ul style="list-style-type: none"> • Open the dialog box <i>Open</i> the controller description file which you want to load into GDC.
Help	Calling the online help



Global Drive Control

4.5 Assign AIF module to the basic controller

If an AIF module is connected to the basic controller and the PC ↔ target system communication is via this AIF module you can load the controller description assigned to the AIF module. This allows you to parameterize the AIF module with GDC as well.

Automatic assignment in online mode

In the online mode, an available AIF module is identified automatically and listed in the window "Drives connected to bus". (📖 55)

- By clicking with the right mousebutton on the AIF module entry the command **Manipulate AIF** is available which you can call via the dialog box *Assign AIF module to the basic controller* (see next paragraph "Manual assignment in offline mode").

Manual assignment in offline mode

In offline mode, you can assign the AIF module via the dialog box *Assign AIF module to the basic controller* which you call with the button **Next** in the dialog box *Assign device description to the basic controller*. (📖 45)

- Select the AIF module from the list field *AIF module for ...* from the list:

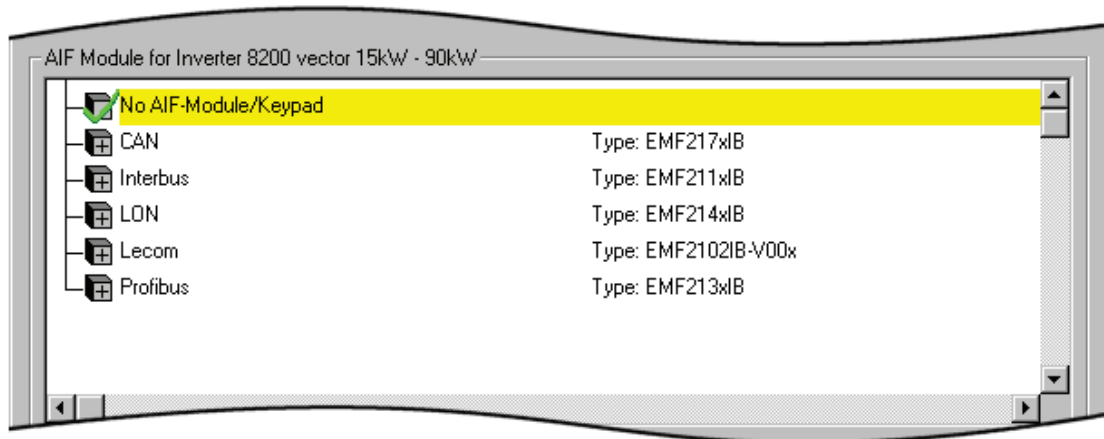


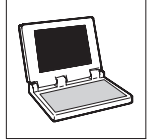
Abb. 10 list field *AIF module for ...* in the dialog box *Assign AIF module to the basic controller*







Tip!

If the PC is **not** connected to the basic controller via the AIF module interface
- or -

no AIF module is connected to the basic controller, select the entry "No AIF module/keypad".



Dialog box icons and their meanings	
	Marks a non-selected entry. <ul style="list-style-type: none"> Click the icon to select this entry.
	Marks a selected entry <ul style="list-style-type: none"> The box at the bottom display more information on this entry.
	Marks an entry which contains further (hidden) entries. <ul style="list-style-type: none"> Click the icon to show the subordinated entries.
	Marks an entry which contains further (shown) entries. <ul style="list-style-type: none"> Click the icon to hide the subordinated entries.

Dialog box buttons and their meanings	
Back	Return to dialog box <i>Assign device description to the basic controller</i> .
Complete	Complete selected assignment. <ul style="list-style-type: none"> This button will appear only if the basic controller has no FIF interface otherwise the button Next will be displayed.
Next	Go on to the dialog box <i>Assign FIF module to the basic controller</i> . <ul style="list-style-type: none"> This button will appear only if the basic controller has an FIF interface otherwise the button Complete will be displayed.
Cancel	Cancel allocation, closes dialog box without accepting changes.
Help	Calling the online help



Global Drive Control

4.6 Assign FIF module to the basic controller

If one or more FIF modules are connected to the basic controller you can load the corresponding controller descriptions so that you can parameterize the FIF modules with GDC as well.

Automatic assignment in online mode

In the online mode, an available FIF module is identified automatically and appears in the dialog box *Assign FIF module to the basic controller* as "selected".

- If a FIF module other than the automatically selected one should be connected to the basic controller, you can assign the module manually.
(see next paragraph "Manual assignment in offline mode").
- By clicking the button **Complete** or **Next** you accept the selection.

Manual assignment in offline mode

In the offline mode, you can assign the FIF module via the dialog box *Assign FIF module(s) to the basic controller* which you call with the button **Next** in the dialog box *Assign AIF module to the basic controller*. (46)

- Select the FIF module from the list field *FIF module for ...* from the list:

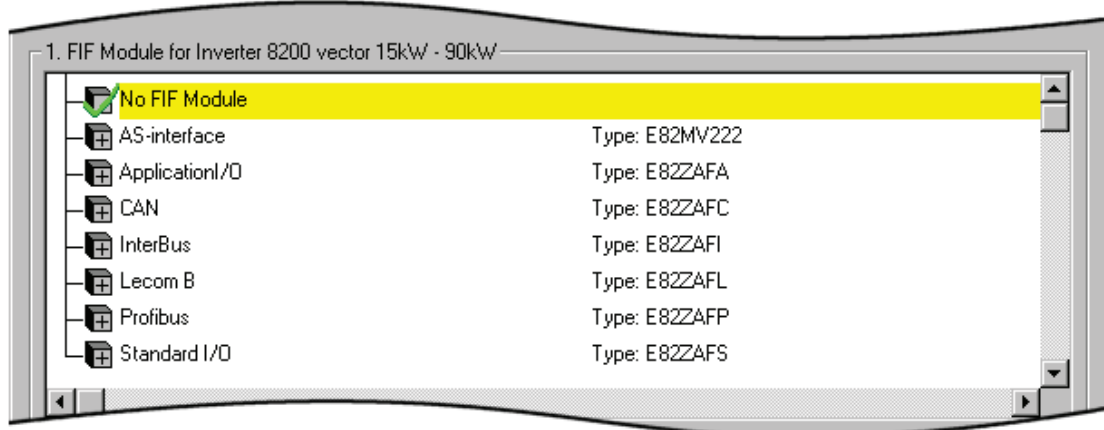
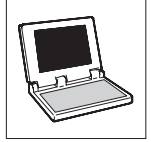






Abb. 11 List field *FIF module for ...* in the dialog box *Assign FIF module to the basic controller*



Tip!

- If **no** FIF module is connected to the basic controller, select the entry "No FIF module".
- If the basic controller has several FIF interfaces click the button **Next** to proceed with the assignment of the other FIF modules.



Dialog box icons and their meanings	
	Marks a non-selected entry. <ul style="list-style-type: none"> Click the icon to select this entry.
	Marks a selected entry <ul style="list-style-type: none"> The box at the bottom display more information on this entry.
	Marks an entry which contains further (hidden) entries. <ul style="list-style-type: none"> Click the icon to show the subordinated entries.
	Marks an entry which contains further (shown) entries. <ul style="list-style-type: none"> Click the icon to hide the subordinated entries.

Dialog box buttons and their meanings	
Back	Return to the previous dialog box.
Complete	Complete selected assignment.
Next	Go on to the dialog box <i>Assign second FIF module to the basic controller</i> . <ul style="list-style-type: none"> This button will appear only if the basic controller has several FIF interfaces otherwise the button Complete will be displayed.
Cancel	Cancels allocation, closes dialog box without accepting changes.
Help	Calling the online help

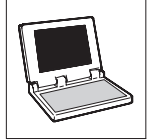



4.7 Short commissioning

After the controller description of the selected/found target system has been loaded into GDC the GDC dialog *Short commissioning* automatically opens in the GDC presetting.

4.7.1 Examples of a short commissioning dialog

The functions in the GDC dialog *Short commissioning* are dependent on the target system and are explained here using examples.



Field	Button	Function/Notes
①		Changes of the selected configuration settings
②	Help	<p>Online help display</p> <ul style="list-style-type: none"> • With the button Help you can call the online help with deliberate information on the corresponding dialog box from any dialog box. • General information on the use of the Windows help can be found in your Windows documentation.
③	Start	<ul style="list-style-type: none"> • Starts the target system – in online mode only
④	Stop	<ul style="list-style-type: none"> • Stops the target system – in online mode only
⑤	Diagnostics	<p>Change to GDC dialog <i>Diagnostics</i></p> <ul style="list-style-type: none"> • Display of monitoring configuration, operating time, error messages, etc.
⑥	Parameter menu	<p>Closing the GDC dialog <i>Short commissioning</i> and display of the parameter menu</p> <ul style="list-style-type: none"> • For the use of the parameter menu see section 4.8, "The user interface of Global Drive Control". ( 52)
⑦	Control	<p>Change to GDC dialog <i>Control</i></p> <ul style="list-style-type: none"> • This GDC dialog is used to commission the target system. – in online mode only

For more information on the commissioning dialog refer to the online help of the target system.

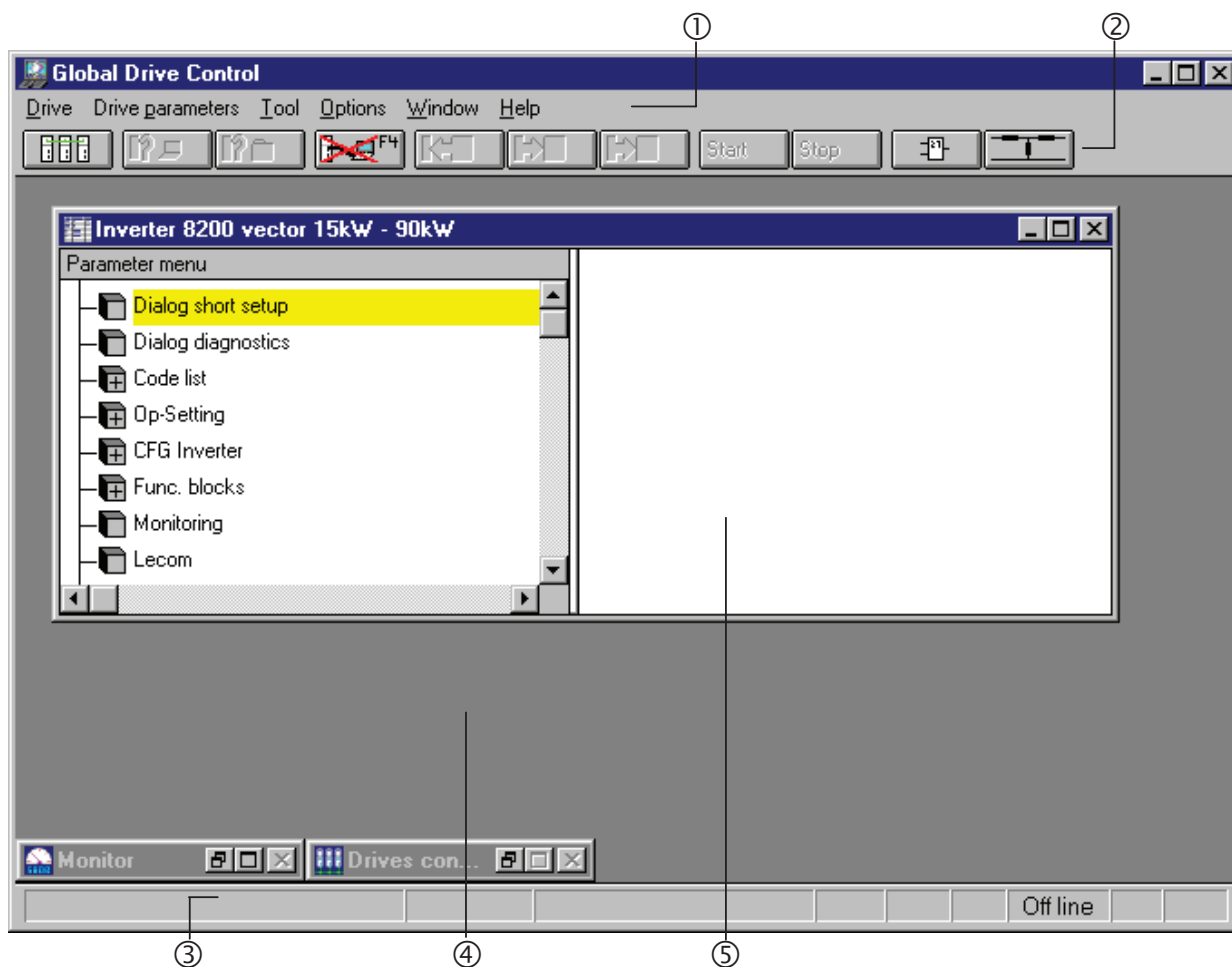


4.8 User interface of Global Drive Control

4.8.1 Main window

The main window is the actual GDC user window.

- All other windows are document windows which can only be displayed within this user window.
- Functions on the arrangement of the user windows can be found in the menu **Window**.



The GDC main window contains

- the main menu ①, (📖 53)
- the toolbar ②, (📖 54)
- the status bar ③, (📖 55)
- and the GDC working area ④,
in which more GDC windows are displayed:
 - the window "Drives connected to bus", (📖 55)
 - the parameter window ⑤, (📖 56)
 - the monitor window, (📖 59)



4.8.2 Main menu

Apart from frequently used functions which are accessible through the toolbar or the function keys, for instance, the GDC main menu contains numerous special functions which are arranged in submenus according to their functionality.

Depending on the selected target system and the selected mode (online/offline) a submenu may be hidden or functions in this submenu appear grey. Grey functions cannot be called.






















Submenu	Functions	Notes	
Drive	<ul style="list-style-type: none"> • Find/Select/Start/Stop • Communication parameters • Stop GDC 		📖 43, 45
Drive parameters	<ul style="list-style-type: none"> • Parameter set transfer PC ↔ drive • Load/Save/Print parameters 	<ul style="list-style-type: none"> • Submenu is displayed in online mode only. 	📖 Online help
Function block editor	<ul style="list-style-type: none"> • Special function block editor functions 	<ul style="list-style-type: none"> • Submenu is displayed only when the function block editor is activated. • only 93xx controllers 	📖 60
Oscilloscope	<ul style="list-style-type: none"> • Special oscilloscope functions 	<ul style="list-style-type: none"> • Submenu is displayed only when the oscilloscope is activated. • only 93xx controllers as from software version 2.x 	📖 61
Tool	<ul style="list-style-type: none"> • Call from user-defined tool from GDC • Call from optional GDC components (function block editor, oscilloscope) 	<ul style="list-style-type: none"> • In this submenu, you can implement external programs which can be called directly from GDC. 	📖 Online help
Options	<ul style="list-style-type: none"> • Program presettings 		📖 Online help
Window	<ul style="list-style-type: none"> • Window arrangement 		
Help	<ul style="list-style-type: none"> • Online help display • Program information 		



Global Drive Control

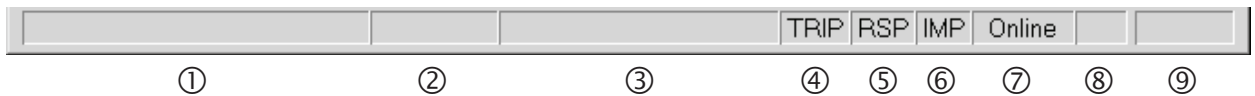
4.8.3 Toolbar

The toolbar allows easy access to frequently used functions. As an alternative you can use the function keys of your PC keyboard for many functions.

Button activated	Button deactivated	Function key/Function	
		F1	Display of context-sensitive help
			Close drive window.
 F2		F2	Search target system (online mode). 📖 43
 F3		F3	Select target system (offline mode). 📖 45
 F4	 F4	F4	Toggle between online and offline mode 📖 43 📖 45
 F5		F5	Transmit parameter set from PC to target system. • in online mode only
 F6		F6	Transmit marked parameter from target system to PC. • in online mode only
 F7		F7	Transmit parameter from target system to PC. • in online mode only
 Start F8		F8	Start target system. • in online mode only
 Stop F9		F9	Stop target system. • in online mode only
			Start function block editor. • only 93xx controllers 📖 60
			Start oscilloscope function. • only for 93xx servo controllers as from software version 2.0 and 93xx vector as from software version 1.0 📖 61
			Start input assistent for motor data. 📖 62



4.8.4 Status bar



Displayed information in the status bar			
①	Information on controller-specific parameter menus	⑥	IMP: Pulse inhibit set in target system
②/ ③	Status information of drive-specific dialogs	⑦	Current mode (online/offline)
④	TRIP: Error in target system	⑧	Online address (CAN or LECOM-A/B)
⑤	RSP: Controller inhibit set in target system	⑨	Active parameter set (in online mode for 8200 vector/motec only)

4.8.5 Window "Drives connected to bus"

The window *Drives connected to bus* lists all available target systems including AIF/FIF modules.

- Doubleclick the target system which you want to parameterize in this window.

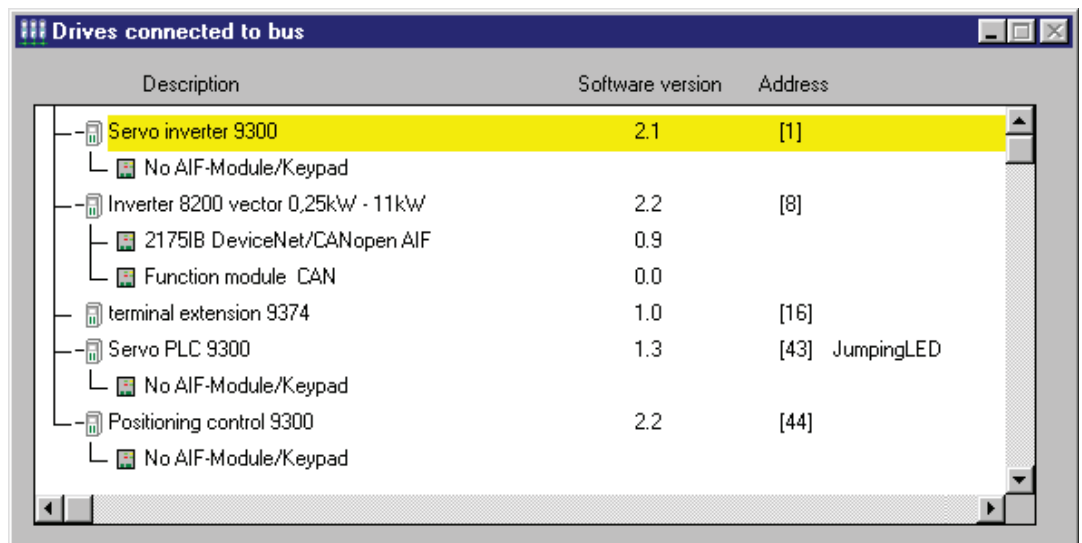


Abb. 12 Window *Drives connected to bus*

- For information on manual target system assignment refer to page 44ff. (📖 44)

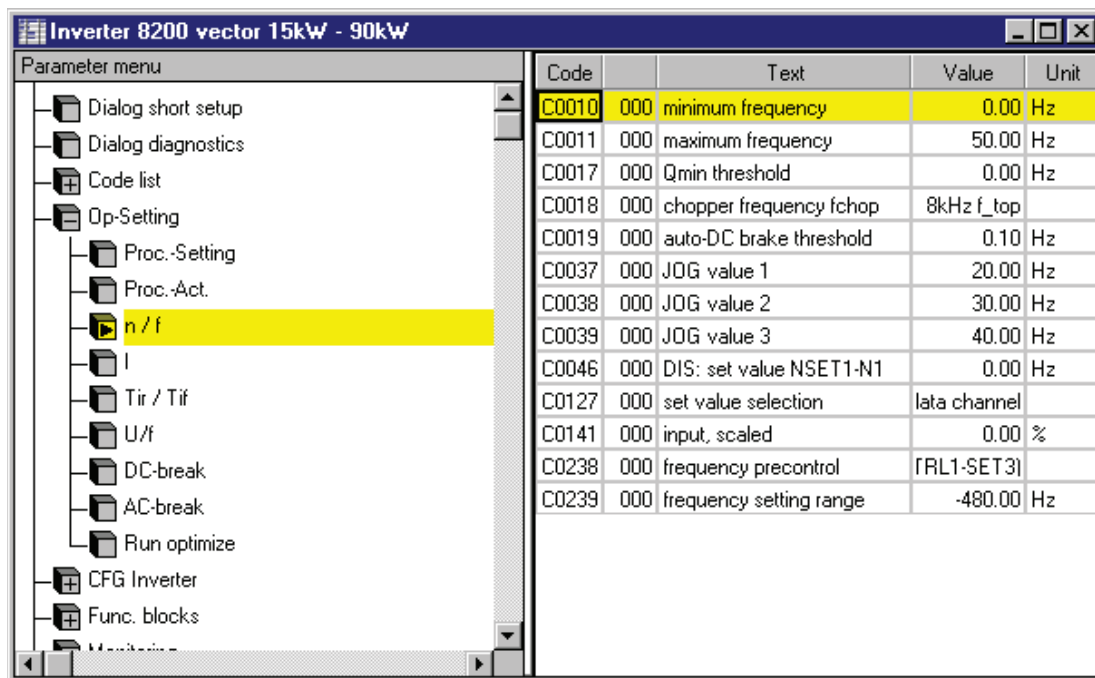


Global Drive Control

4.8.6 Parameter window

After the corresponding device description for a target system has been loaded into GDC the parameter window is available.

- In this window you can easily enter all drive system-specific settings of the target system.



The parameter window is divided into two areas:

- The parameter menu is on the left-hand side where you select the menu item which you want to parameterize.
- The right-hand side shows the parameters of the menu item activated in the parameter menu. In the above example, these are the parameters for speed operation.

Icons in the parameter menu and their meanings	
	Parameter menu item, not selected. <ul style="list-style-type: none"> • Doubleclick the icon to call the menu item.
	Parameter menu item containing more submenu items. The submenu items are hidden. <ul style="list-style-type: none"> • Doubleclick the icon to show the submenu item.
	Parameter menu item containing more submenu items. The submenu items are shown. <ul style="list-style-type: none"> • Doubleclick the icon to hide the submenu item.
	Parameter menu item, selected. <ul style="list-style-type: none"> • The right-hand side of the parameter window shows outputs of this activated menu item. • Menu items starting with "Dialog" a GDC dialog is opened instead. <ul style="list-style-type: none"> – Click the button Back or Parameter menu to close this GDC dialog.

Selecting parameters

You can select a target system parameter shown on the right-hand side in the parameter window using the right mousebutton or the arrow keys.

- The selected parameter is highlighted by a yellow background.
- By pressing the function key **F1** you open the online help with information on the selected parameter.



Changing parameters

You change a selected parameter through an input dialog which you open by pressing the **Enter** key.



Tip!

Use the left mousebutton to simultaneously select a parameter and open the input dialog to change the parameter.

More information on the input dialogs can be found in the following section. (58)

Codes/Objects

Parameters either have codes or objects:

- Codes are marked by a "C" in the column "Code" and represent the known Lenze codes.

Code	
C0001	000
C0002	000
C0003	000
C0004	000

- Objects are marked by a preceding "I" in the column "Code" and represent parameters with a hexadecimal address.

Code	
I6002h	000
I6003h	000
I6004h	000
I6005h	000



Global Drive Control

4.8.7 Input dialogs

All input dialogs have the following four buttons:

Ok	The selected/entered value is accepted, the input dialog is completed. <ul style="list-style-type: none"> In online mode the value is transferred to the target system.*
Acceptance	The selected/entered value is accepted, the input dialog remains open. <ul style="list-style-type: none"> In online mode the value is transferred to the target system.*
Cancel	The input dialog is completed without accepting changes. <ul style="list-style-type: none"> Exception: The changes were already accepted by clicking the button Acceptance.
Help	The online help with information on the selected parameter is opened.

* Some parameters can only be changed in online mode if the controller has been inhibited in the target system.

The representation of the parameter value depends on the type of parameter:

C40/0 controller enabling

Value	Name
0	ctrl. inhibit
1	ctrl. enabled

Selection (list)

You can select a new setting for the selected parameter from a list.

- The currently set value is selected in the list when the input dialog is opened.

C135/0 main control word

Value
 Dezimal Hexadezimal

	Name	Value
Bit00	0	JOG
Bit01	0	JOG
Bit02	0	NSET1-Cw/CCw
Bit03	0	NSET1-QSP

Bit-coded

The parameter value is bit-coded.

- All bits and their meanings are listed.
- You can toggle between 0 and 1 with the left mousebutton or the space bar.
- Alternatively, you can enter the parameter value either as a decimal or hexadecimal value.

C58/0 Rotor diff

Lower limit: -180
 Upper limit: 180

Decimal

You can enter the parameter value within a displayed range with the keyboard.

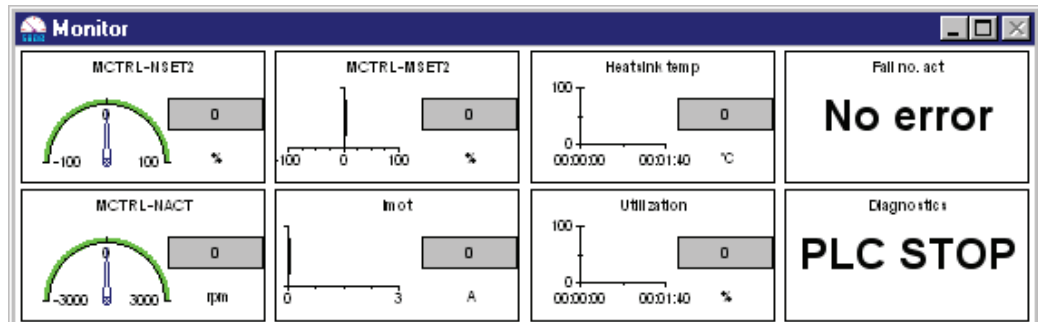
- For some parameters, the input dialog offers additionally the buttons **Up** and **Down** to change the parameter value in fixed increments.



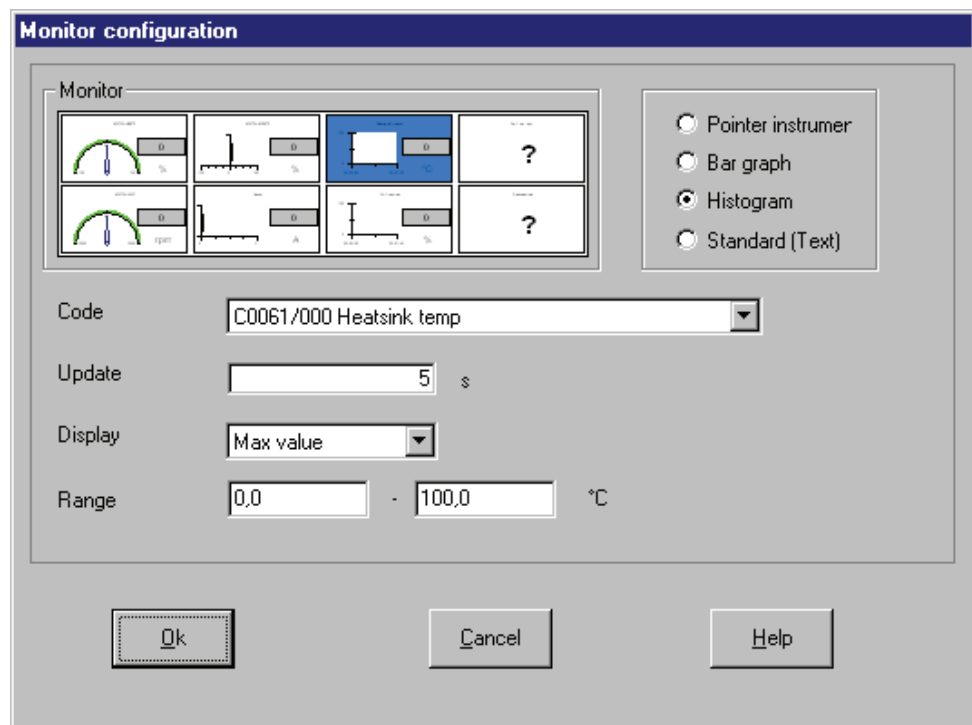
4.8.8 Monitor window

The monitor window displays values which are measured cyclically by the controller.

- The monitor window is active only in online mode.
- In offline mode the monitor window is minimized automatically as an icon.



- Click one of the individual windows with the **left** mousebutton to enlarge this window. A second mouseclick returns to the previous view.
- Click one of the individual windows with the **right** mousebutton to open the dialog box *Monitor configuration* for the configuration of this window:



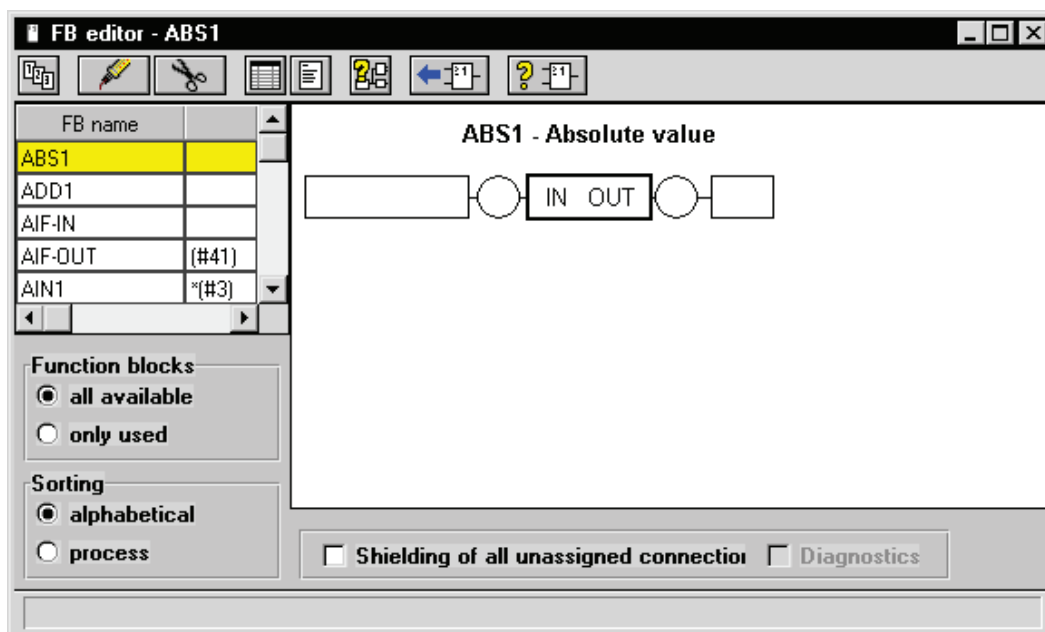
- Now you can perform the settings for the display with the blue background in the **Monitor** box or by clicking another display in the **Monitor** box change to the settings of this display.



4.9 Function block editor

The function block editor is a powerful tool for the generation, diagnostics and analysis of signal configurations in Lenze 93xx controllers.

- In the toolbar, click the button , to open the dialog box *Function block editor*.



Signal configuration generation

Function block links can either be inserted or removed using the cursor. Function block parameters (e.g. acceleration ramp or maximum speed) can be set with the function block editor.

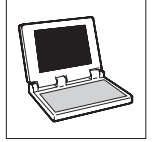
Signal configuration diagnostics

At the function block inputs and outputs, actual values can be shown which are updated cyclically. With a mouseclick these signals can be traced through the function blocks to find errors in the signal flow. The function block editor also supplies information on the processing sequence of the individual function blocks.

Signal configuration analysis

Every function block which is used in the signal configuration can be displayed graphically. Individual signals (e.g. speed setpoint) can be traced throughout the entire signal configuration using the cursor. The function block parameters show their corresponding function.

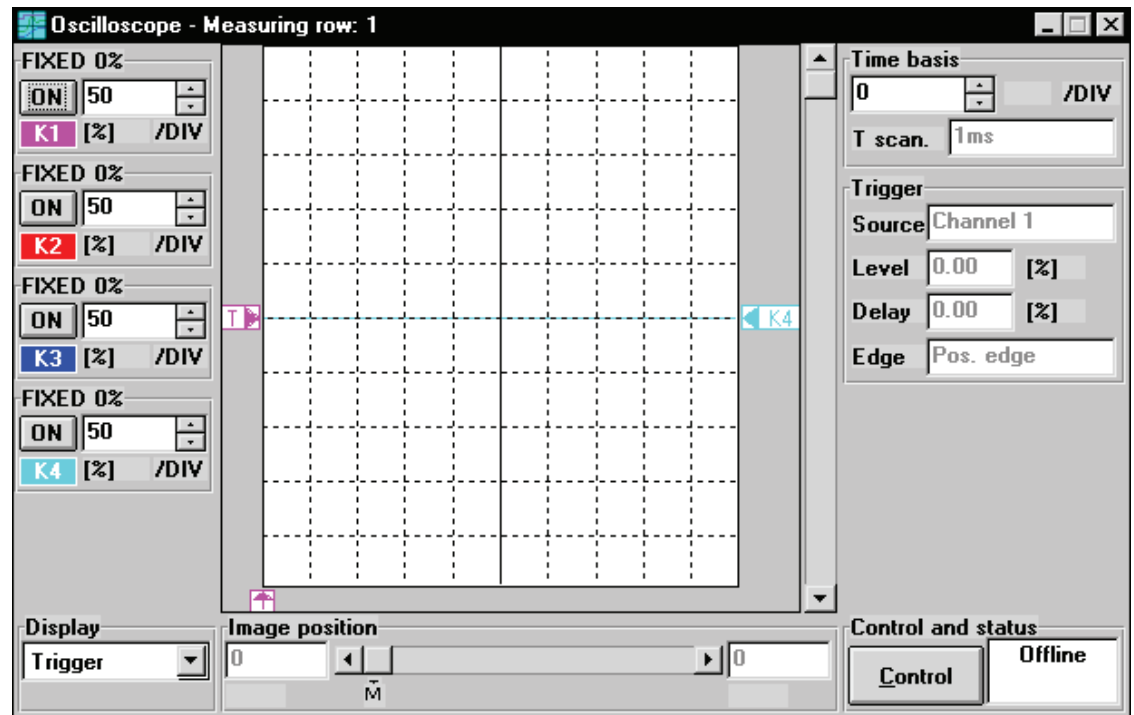
More information on the function block editor can be found in the menu **Help →Function block editor** .



4.10 Oscilloscope function

GDC offers an oscilloscope function for 93xx servo controllers as from software version .20 (93xx vector as from software version 1.0).

- In the toolbar, click the button , to open the dialog box *Oscilloscope*.



The oscilloscope function is used to measure any signals which are processed by the controller. For this purpose the controller includes a function block (OSZ) which works like a memory oscilloscope. This function block can measure and record up to four analog signals simultaneously. It is triggered either via an additional digital input or one of the four analog channels.

The data is saved in the controller. Once a measurement is completed the data is transferred to the PC and displayed using the oscilloscope function in GDC.

Controller and visualization function can communicate only via

- LECOM-A/B
- System bus

More information on the oscilloscope function can be found in the menu **Help → Oscilloscope**.

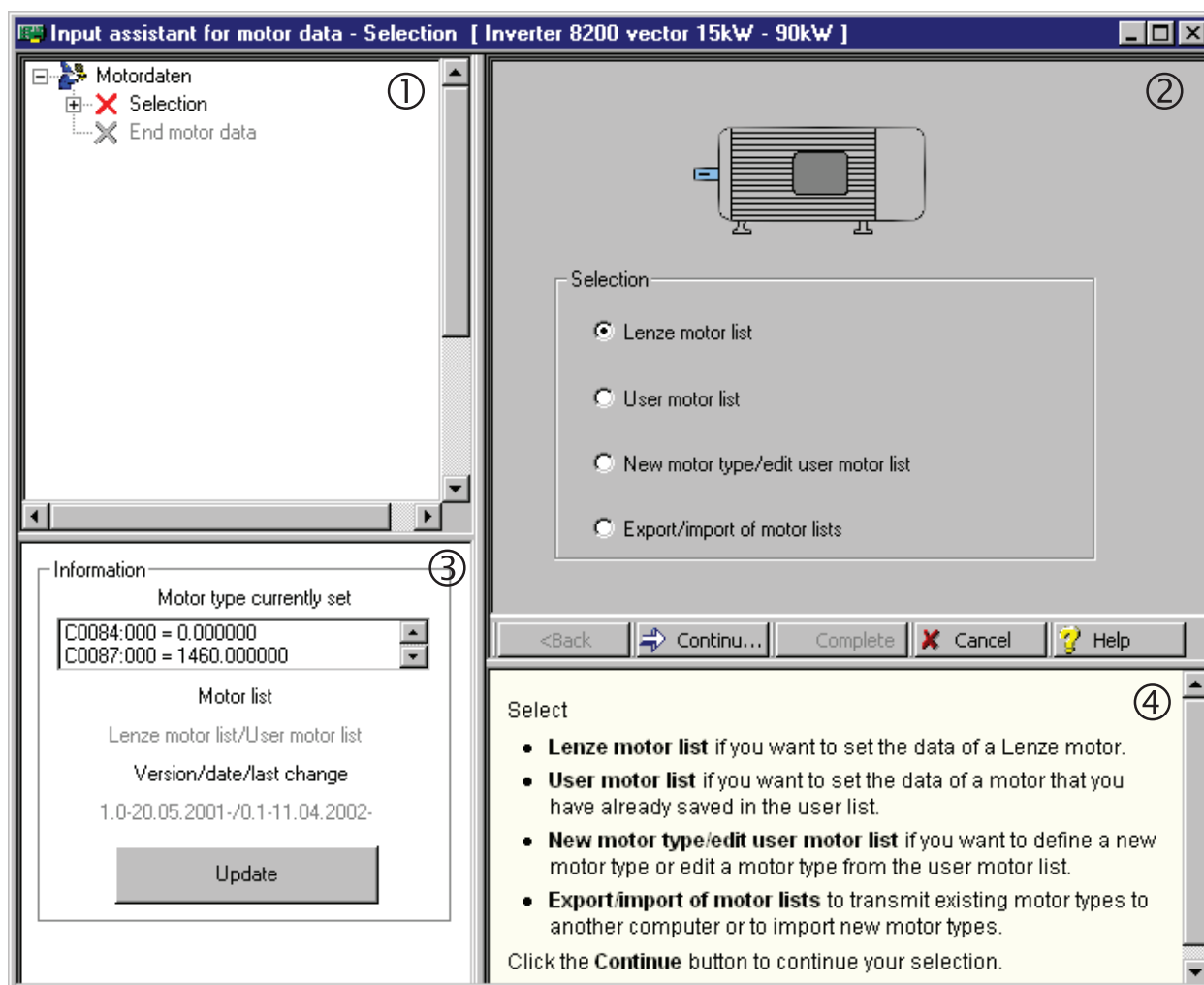


4.11 Input assistant for motor data

The input assistant for motor data is used to select the motor used from a list of Lenze motors or a user-defined list. The motor data is then transmitted to the target system.

You can add more motor types to the user motor list, either by directly entering the data or by loading it from a file using the import function. The motor list can be exported to other computers with GDC using the export function.

- In the toolbar, click the button , to open the dialog box *Input assistant for motor data*.



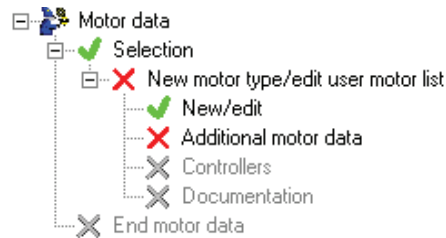
The input assistant is divided into four areas:

- ① Input dialog overview
- ② Input dialog
- ③ Information on the motor type currently set in the target system
- ④ Information on the input dialog



Input dialog overview ①

The input dialog overview shows you in which input step you are, which inputs have already been completed and which inputs remain to be done:



- You can change to the input dialog by clicking an entry.

Input dialog ②

Make the suitable selection or entries in the input dialog.

Click the button

- **Next** to proceed with the next input step or **Back** to return to the previous input step.
- **Complete** to transmit the motor data of the selected motor to the target system.
- **Cancel** to cancel the input assistant for motor data and return to GDC.
- **Help** to call the GDC online help.

Information on the motor type currently set in the target system ③

In online mode, this area displays which motor type is currently selected in the target system and from which motor list it has been taken.

- Click the button **Update** to read the set motor type again from the target system.

Information on the input dialog ④

This area displays additional information on the input dialog.



Tip!

More information on the input assistant for motor data can be found by clicking the button **Help** in the context menu.



5 Appendix

5.1 Using GDC as OPC client

GDC has an integrated interface for OPC (OLE for Process Control) and can thus access - as OPC client - to bus servers supported by Lenze DriveServer.

5.1.1 Bus server configuration

Before configuring GDC as an OPC client, the appropriate bus server must be configured so that it is available for selection in GDC.

- For details about configuring the bus server, please refer to the bus server documentation.



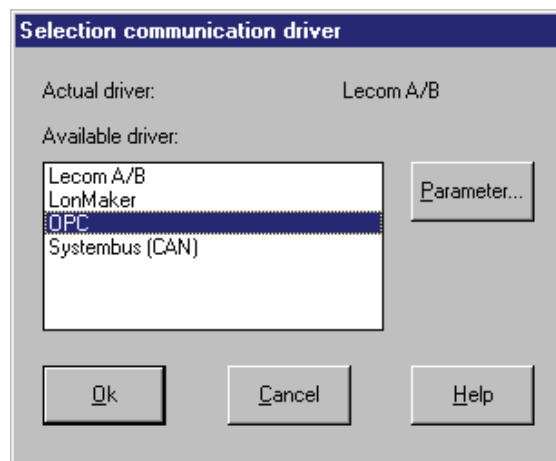
Tip!

- The DriveServer delivery package includes bus servers for the fieldbus systems LECOM and system bus (CAN). A bus server for the MPI bus (bus server S7-MPI) is also available from Lenze. (📖 67)
- For an overview of the bus servers supplied by Lenze and third-party manufacturers, please refer to the “DriveServer – Accessories” documentation.

5.1.2 Configuring GDC communication parameters

To enable GDC to communicate with the DriveServer via the OPC interface, the GDC communication parameters have to be configured accordingly:

1. Go to **Options→Communication...**, to open the dialog box *Select communication driver* :



- All communication drivers available are displayed in the list field.



- In the list field select the entry **OPC** and select the button **Parameter...**, to open the dialog box *OPC*:



- Use the input field **Computer name** to enter the PC name on which the bus server is installed.
 - Click the button **Network** to select the corresponding computer from your network environment.
 - If the bus server is installed on the same computer as GDC, you can simply leave the input field **Computer name** blank.



Tip!

When accessing a bus server via a network, please bear in mind that:

In order to protect a computer from unauthorised access, the default DCOM safety settings do not allow OPC access. Check the DCOM settings for the bus server concerned and change them, if necessary. For details, please refer to the “DriveServer – Getting Started” documentation.

- Click the button **Refresh** to update the list of available OPC servers.



Tip!

The program distinguishes between “normal” OPC servers and OPC bus servers:

- Configuring OPC servers (Data Access 2.0) is usually a difficult and time-consuming process.
- OPC bus servers (DRIVECOM) have been optimised for use with GDC/DriveServer and therefore require only a minimum configuration.

We therefore recommend the use of OPC servers that also display bus server features (presetting OPC options: Bus server (DRIVECOM)).

- Use the list field **Available OPC servers** to select the suitable OPC server and close the dialog box *OPC* with **Ok**.
 - Close the dialog box *Select communication driver* with **Ok**.
- GDC configuration as an OPC client is now complete.

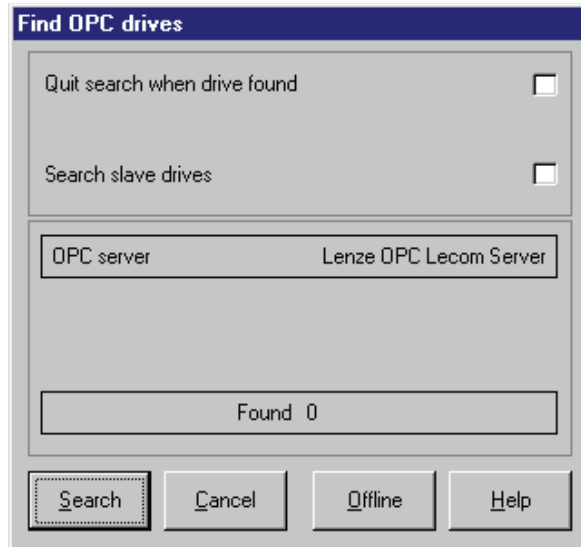


Global Drive Control

5.1.3 Find OPC drives

Once GDC has been configured as an OPC client, you can search online to find the drives connected to the OPC bus server:

1. If GDC is still in offline mode, click **Options→Online** or press function key <F4> to change to online mode.
2. Go to **Controller→Search...** or press function key <F2>, to open the dialog box *Find OPC drives*:

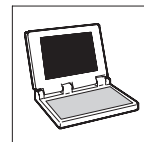


3. Click the button **Search** to start searching or click **Cancel** to abort.
 - Once the search is completed the controllers found are listed in the window "Drives connected to bus".



Note!

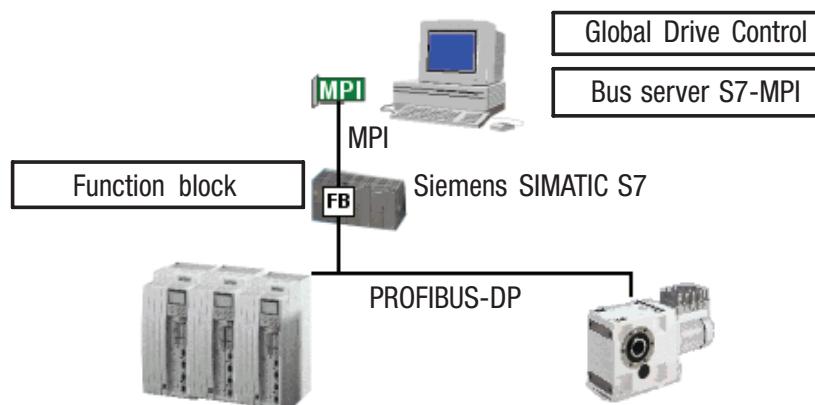
- GDC automatically tries to allocate device descriptions to the drive controllers found.
 - If only one drive was found and a device description could be allocated, the device description is loaded immediately.
 - If automatic allocation of the device description for a drive fails, the device description for the drive can be allocated manually.
Select the corresponding controller in the window "Drives connected to bus" or click **Controller→Select...** to open the dialog for manual allocation.
- Use the command **Controller→Communication parameters...** to display the OPC access path (e.g. "COM1.Device_01") in text field **Access path** of the dialog box *Current drive*.



5.1.4 Using the bus server S7-MPI

When used together with the **Bus server S7-MPI** GDC can also be used to set parameters for target systems networked via PROFIBUS-DP and controlled via a Siemens SIMATIC S7 PLC.

The following figure shows the architecture of such a system:



- The GDC oscilloscope function is the only function that is not available via this communication path.



Global Drive Control

5.2 Interface converter for LECOM-B (RS485)

If the target system is to communicate via LECOM-B (RS485), an intelligent interface converter RS232 ↔RS485 is required which is able to automatically reverse the direction of communication. The Lenze interface converter 2100 does not meet this requirement.

We therefore recommend the following product:

I-7520 isolated RS232 to RS485 converter

Supplier: Spectra Computersysteme GmbH
Humboldtstraße 36
D-70771 Leinfelden/Echterdingen

5.3 Frequently asked questions and answers

Error	Cause	Remedy
Parameter set files cannot be read.	You tried to read parameter set files which were generated with the "Lemoc2" DOS-program.	GDC uses another file format for the saving of drive parameters. Transmit the parameter set from the controller to the PC and save it with GDC.
No communication with the controller.	The PC system cable is wrong.	Check the wiring of the system cable. (For the assignment of the system cable refer to the GDC online help.)
	Controller is switched off or LECOM-A/B module 2102 has no power supply.	Connect power supply to controller and check the connection to the controller. In the case of external voltage supply at the terminals 39 and 59, check the voltage (see operating instructions of the controller).
	Incorrect COM port selected.	Set correct COM port via Options →Communication
	Interface parameters are set incorrectly.	You can change the interface parameters using the Windows Control Panel: <ul style="list-style-type: none"> • COM1: address 03F8, IRQ 4 • COM2: address 02F8, IRQ 3
	The Windows configuration is incorrect. Note: You cannot access the COM ports via the Windows program "Terminal" (Startup/Programs/Accessories), either.	Install Windows again or eliminate configuration errors in the "System.ini" file.

GDC with system bus

Error	Cause	Remedy
GDC or Windows crash	Removing PC system bus module which Windows is running.	Do not remove PC system bus module from the interface or plug into the interface while Windows is running.



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