DRIVEMANAGER

Handbuch
Manual

PC-Benutzeroberfläche für
die Antriebsregler
der c-line DRIVES

PC User Interface for
the drive controllers
of the c-line DRIVES

Zur Inbetriebnahme, Bedienung und
Diagnose von Antriebsgeräten

For commissioning, operation and
diagnosis of drive units
sind Warenzeichen der Microsoft® Corporation. Alle ansonsten im Text
genannten und abgebildeten Warenzeichen sind Warenzeichen der
jeweiligen Inhaber und werden als geschützt anerkannt.

are registered trademarks of the Microsoft Corporation. All other
trademarks cited and entered in the text are registered to the respective
holders, and are acknowledged as being protected.

Dieses Handbuch beschreibt die Grundfunktionen der PC-Oberfläche
DRIVEMANAGER. Die Inbetriebnahme der Antriebsregler und Funktionen
der Parameter werden in der Betriebsanleitung der jeweiligen Gerätебau-
reihe beschrieben.

This manual describes the basic functions of the DRIVEMANAGER PC user
interface. Commissioning of the units and the functions of the parameters
are described in the Operation Manual to the relevant unit series.

Handbuch DRIVEMANAGER
DRIVEMANAGER Manual

Version: DRIVEMANAGER V3.x
ID No.: 0842.01B.4-00
Stand/Date: 11/2005

Technische Änderungen vorbehalten.
We reserve the right to make technical changes.
1 Introduction
  1.1 Application ....................................................... 1-1
  1.2 Supply package ................................................. 1-1
  1.3 System requirements .......................................... 1-1
  1.4 Licence conditions ............................................ 1-2

2 Installation
  2.1 Installing the DriveManager .................................. 2-1
  2.2 Installing the motor database ................................ 2-3
  2.3 Connecting a unit to a PC ..................................... 2-3

3 The DriveManager
  3.1 Starting the DriveManager ..................................... 3-1
    3.1.1 With unit connected - online mode .................... 3-1
    3.1.2 Without unit connected - offline mode .............. 3-2
  3.2 Program window ............................................... 3-3
    3.2.1 Function screen ........................................... 3-3
    3.2.2 Quick-access toolbar ................................... 3-4
    3.2.3 Status and actual value indicator .................... 3-4
  3.3 Functions ....................................................... 3-5
    3.3.1 Connecting and disconnecting ......................... 3-5
    3.3.2 Selecting user level ..................................... 3-6
    3.3.3 Setting up the drive controller ...................... 3-7
    3.3.4 Data set .................................................. 3-9
    3.3.5 Controlling the drive controller .................... 3-11
    3.3.6 Scope function ........................................... 3-12

4 Installing unit software
  4.1 Downloading firmware from the website ............... 4-1
  4.2 Installing firmware in the drive controller .......... 4-2
1 Introduction

1.1 Application
DRIVEMANAGER V3.x is suitable for all c-line DRIVES from Lust Antriebstechnik. This PC program offers you a user-friendly way of setting parameters for the Lust drives, commissioning them into operation, controlling them directly, or scanning status values from the connected unit. The PC adapts automatically to all c-line DRIVES units.

Note: The MC6000, MC7000 and VF1000 units can only be operated with DRIVEMANAGER version V2.35. This is the version supplied on the DRIVEMANAGER CD.

1.2 Supply package
The DRIVEMANAGER 3.x package includes a CD-ROM and the licence key. The CD-ROM holds all the program files, the motor databases for the Lust servomotor series and the latest manuals to the Lust unit series in PDF format.

1.3 System-requirements
Hardware requirements:
- PC with Intel® Pentium® or AMD processor
- min. 80 MB available memory capacity
- min. 32 MB RAM
- CD-ROM drive
- RS232 serial port or USB - RS232 converter*

Operating system:
Microsoft Windows 95/98/ME or Windows NT 4.0/2000/XP

* Requirements: Baud rate < 115 200 Baud, USB2.0 full-speed compatible, drivers for Windows 98/ME/2000/XP
Recommended: US232B from FTDI (functionality dependent on unit)
1.4 Licence conditions

Note: The DRIVEMANAGER may be installed in a PC network. However, an installed version can only be opened once at any one time.
2 Installation

Note: To install the DRIVEMANAGER 3.x you will need at least 80 MB of available memory capacity on your hard disk.

2.1 Installing the DRIVEMANAGER

When the CD-ROM is inserted the installation starts automatically. If it does not, double-click on the SETUP.EXE file on the CD-ROM menu to launch the installation process.

A pop-up from which you can select the DRIVEMANAGER browser language appears. Select the language you want. The DRIVEMANAGER browser launches.

Click "Install" and then select the relevant DRIVEMANAGER version.
2 Installation

Uninstalling an old DriveManager version

If an old version of the DriveManager is already installed, a dialog box opens up in which you can uninstall it. Run the InstallShield Wizard to uninstall the old version.

Note: Make sure all windows of the version you are uninstalling are fully closed.

Installing the new DriveManager

A dialog box automatically opens up in which you can select the DriveManager language. The InstallShield Wizard guides you through the installation.

During installation you can choose whether all the users of your PC are able to access the DriveManager, or only you yourself.

You can also choose between three setup types:

- Install the application for:
  - Anyone who uses this computer
  - Only for me

Then click on the “Next” button.

In the next window of the InstallShield Wizard you specify how the DriveManager is displayed on the Windows Start menu. Click on “Next” to start the installation (this may take a few minutes).

Next enter the number of the serial port on your PC via which you want to connect to the Lust drive unit. This usually means choosing a port from COM1 to COM4.

If your computer does not have an RS232 port, the Lust drive unit can be connected by way of a USB - RS232 adapter (See section 1.3).

Note: You can change your port selection after installation from the “Communication\Bus configuration” menu or by clicking...
2 Installation

2.2 Installing the motor database

Confirm your input to finish the installation process.

All Lust servomotors, with their electrical properties, are entered in the motor databases. You will find them in the DRIVEMANAGER browser on the “Motor data” menu. From that folder you can launch the setup program directly to install the database.

Note: By doing so, the data of all the Lust servomotors are available directly to the DRIVEMANAGER for use in commissioning.

2.3 Connecting a unit to a PC

Connect the Lust-drive controller by way of a standard commercially available PC cable (D-Sub 9-pin) to the RS232 port on your PC. Use a USB - RS232 adapter as necessary, if your PC does not have an RS232 port (See section 1.3).

Note: If you want to connect multiple units to your PC and control them with the DriveManager (via LUSTBus), please contact us for further details:
Tel: +49 6441/966-180
3 The DriveManager

Note: The function descriptions set out in the following detail operation of the DriveManager by way of the menu bar. The associated quick-access toolbar buttons in the left margin are additionally inserted.

3.1 Starting the DriveManager

3.1.1 With unit connected - online mode

Connect the Lust drive controller as detailed in section 2.3 to the PC and switch the drive controller on. Start the DriveManager from the Windows Start button or via the desktop icon.

In the factory default setting the DriveManager automatically searches for a connected unit. If it does not find one, you can make the connection to the drive controller manually:

Note: If no connection to the drive unit is made, refer to section 3.3.1 “Connecting and disconnecting”.

For precise details of the commissioning procedure for the respective drive controllers refer to the relevant operation manuals.
3.1.2 Without unit connected - offline mode

If the DRIVE MANAGER is started with no unit connected to it, the following window appears in the basic setup:

Click “OK” and use one of the existing data sets. Action:

The “samples” folder contains data sets for various sample units. Select the folder for the series you want. Double-click on a data set to open a function screen in which the sample unit settings can be changed.
3 The DriveManager

**Note:** In offline mode not all functions of the unit can be set. If the DriveManager has already connected to a linked unit, you can still open and edit a data set at the same time.

### 3.2 Program window

The DriveManager program window in online mode consists of the function screen, the menu bar and quick-access toolbar, and the status and actual value indicators.

### 3.2.1 Function screen

From this screen you can make all the settings for the active unit or for a data set. Access rights to the various functions depend on your user access level (See section 3.3.2).

For more information on the individual setting options refer to the relevant operation manuals to the c-line DRIVES units.
3.2.2 Quick-access toolbar

The quick-access toolbar shown below corresponds to the basic setup of the DriveManager. It enables all the key functions to be launched by a single mouse-click.

You can customize the layout of the quick-access toolbar by clicking on the individual icons and dragging them where you want them.

<table>
<thead>
<tr>
<th>Working with files</th>
<th>Actions with active unit</th>
<th>Communication</th>
<th>Data set operations</th>
<th>Unit list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>x x x x</td>
<td>x x x x</td>
<td>x x x x x</td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2.3 Status and actual value indicator

The status and actual value indicator is only visible in online mode. On the left-hand side of the program window the actual value indicator shows the latest speed, position and current of the drive controller, while the status indicator shows the operating status of the unit. On the right-hand side of the program window the input and output assignments are displayed. Click the “IO” or “Fct” button as appropriate to toggle between the input and output assignment view and the input/output names.
3.3 Functions

3.3.1 Connecting and disconnecting

If there is no connection to a linked drive controller, it can be made as follows:

To cut the connection to the linked units, or to a single unit:

When the DRIVE MANAGER is started, in its basic setup it automatically connects to the linked unit. If it does not, check the following settings under „Extras/Options”: 
3 The DriveManager

Also check the connection between your PC and the drive controller. If no connection is made with a USB-RS232 adapter, replace it and re-establish the link.

Then reconnect.

3.3.2 Selecting user level

To set the user level:

At the six levels various access rights to the parameter screens are assigned. At level 1 (viewer) the data can only be viewed. Access rights are progressively increased up to user level 4 (administrator), at which full access privileges are assigned. Levels 5 and 6 are assigned to Lust service and development engineers. Select your appropriate DriveManager user level.
3 The DriveManager

Password for user levels

Passwords can be assigned for user levels 2-4 and for the control function/manual mode. To do so, click “Passwords” in the function screen and assign a number combination to each user level. When you save your settings the password prompt is active.

3.3.3 Setting up the drive controller

Changing settings

From the function screen you can make all the settings for the active unit. Access rights to the various functions depend on your user access level (See section 3.3.2).
For more information on the individual setting options refer to the relevant operation manuals to the c-line DRIVES units.

Saving settings

Any changes you make on the function screen are written directly to the unit when you click “Apply” or “OK”. To save the changes permanently to the unit, click “Save settings in device”.
To save the data of the active unit to a file:
3 The DRIVE MANAGER

Loading settings into the unit

To load an existing data set into the active drive controller:

Comparing settings with data set/factory setting

You can compare the current unit setup with an existing data set or with the factory default setting. Action:
Select the comparison reference file. Under “Options” you can select the parameters and the output method for the comparison data. When you click “OK” the DRVIE MANAGER generates a list of all differences between the two data sets.

**Printing settings**

To print the current unit setup (parameter list):

The print format settings signify:

- **Standard** = All parameters are printed in a plain-text list.
- **Programmer** = All parameters are printed in a list also containing programming information (e.g. hex value, data type, memory type etc.).
- **User defined** = By way of the “Formatting” option specific parameters and subject areas can be specified for printing.

**3.3.4 Data set**

You can open and edit a data set in offline mode or in parallel with a linked drive controller (See section 2.3). The data set can be managed as detailed in section 3.3.3 “Setting up the drive controller”: You can edit it from the function screen and then save your settings.
3 The DriveManager

Compare data sets

You can also compare two data sets.

Printing a data set

To print the data set settings (parameter list):

The print format settings signify:

- Programmer = All parameters are printed in a list also containing programming information (e.g. hex value, data type, memory type etc.).
- User defined = By way of the “Formatting” option specific parameters and subject areas can be specified for printing.
3.3.5 Controlling the drive controller

You can control the linked drive controller directly using the DRIVEMANAGER. For this the hardware enable (ENPO) must have been activated by way of the drive unit’s control terminal (on units with Safe Standstill, first execute Safe Standstill and then activate ENPO). Action:

Important: Before you can launch this function, your drive unit must be commissioned into operation as set out in the relevant operation manual.

When you open the “Control” window the parameter settings in the linked unit are automatically changed. They are restored when you close the window.

Note:
Any software limit switches used are not active!

Also be sure to follow the safety instructions set out in the Operation Manual!

1. Select the control mode.
2. In the “Reference” field enter the rotating field frequency and revolutions per minute.
3. Click on the “Start” button to start up your drive.
4. From the bar graph “Actual value amount” you can observe this process.
5. Click on the “Stop” button to brake the drive down to speed 0 and disable the power stage.
3 The DriveManager

3.3.6 Scope function

The digital scope records the time characteristics of control variables. This is useful when commissioning controlled systems (step response) or to detect errors.

The digital scope has four channels, to which you can assign the desired measurement variables.

On the “Trigger” tab you specify the event which will trigger recording. The “Pretrigger” function begins recording before the actual trigger point, e.g. 10 % referred to the recording duration. The “Trigger manually” button triggers the recording event.
On the “Time” tab with the

- **Recording window (duration)** function you can specify the desired duration of recording (for events covering a lengthy period of time), or with the

- **Time per sampling period** function you can specify the time cycle in which the variables are to be measured (suitable for very fast signal changes).

**Note:** Initially choose a large recording window of 3 seconds, for example, and then delimit the period or time division in the second recording operation.

On the “Record collection” tab you select whether you want to make a single recording or a series of recordings.

On the “Options” tab you select the mode of representation of the recording:
Internal autoscaling function

The “Internal autoscaling function” generates a plot window. The measured values of a single measurement are plotted on a graph, which can be saved and printed.

External Scope Wizard

The “External Scope Wizard” opens a new window in which you can compare and monitor multiple recordings.

You can reduce and enlarge the graph views as you want using the “Zoom” tools. With the “Measure” tool you can set two measuring points (toggling between them using the Tab key or right click). The Scope Wizard displays the exact values of the measuring points, and calculates the difference between them.

You can assign the axes of the graph as you want by double-clicking on
the relevant coloured box of the channel. The axis scaling adapts automatically to the channel.
You can save the graph view as a reference file ("Customize \Set current file as default file") and call it up later to compare it with other measurements.
You can save and print the Scope Wizard file.

Starting recording
1. Make settings in “Digital Scope” dialog box
2. Click “Aufnahme starten [Start scope]” button
3. Status is indicated at bottom of Digital Scope dialog box

Saving or printing a recording
From the menu choose “File\save” or “File\Save as” to save the result of your recording.
From the menu choose “File\Print” to print the recording result.

Note: Stored digital scope images can be reopened on-screen by way of the “File\Open” menu option.
4 Installing unit software

The unit software (firmware) can be installed into the drive controllers by way of the DRIVEMANAGER. You will find the latest firmware on the Lust website (www.lust-tec.de) under “Service>Downloads”.

**Note:** Installing a new firmware version resets all current unit settings to their factory defaults. So be sure to save your preference settings first!

### 4.1 Downloading firmware from the website

You download the firmware in a zipped file from the Lust website to your PC with installed DRIVEMANAGER. Unzip the file using a standard file compression utility such as WinZip.

Depending on the unit, the zipped package will contain a range of different files. The firmware file has the extension .HEX. The first digit of the file name signifies the unit family, the next three the software version.

<table>
<thead>
<tr>
<th>Unit family</th>
<th>Unit type</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDE3000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CDF3000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CDA3000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CDD3000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CDB3000</td>
<td></td>
</tr>
</tbody>
</table>

The version number is increased by one each time functions and parameters are modified or extended.

Table 4.1 Overview of unit families

Save the HEX file to the relevant unit folder under “userdata\samples”. If an MCW file exists, it must be saved to the “firmdata” folder. Save all the other files, such as .PIT or .TXT files, to the folder “language\001” (001 for English).
4.2 Installing firmware in the drive controller

Note: To install the firmware in the drive controller you must be assigned at least user level 4*.

*Up to DriveManager version V3.45, the firmware can be installed in the drive controller by users assigned any user level.

Connect the drive controller to your PC with installed DriveManager (See section 2.3). To open the required HEX file:

Important: Installing a new firmware version resets all current unit settings to their factory defaults. This may cause a connected motor brake to open! Isolate the brake from the unit beforehand.

The firmware is then installed in the drive controller. This may take a few minutes.
Artikel-Nr./ID No: 0842.01B.4-00 • 11/2005

Technische Änderungen vorbehalten.
We reserve the right to make technical changes.