

Microlab-Script for Windows Version 1.2

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Introduction

The software package „Microlab-Script“ is to create user-defined script files for controlling Hamilton Microlab dilutors and dispenser series 500. Use the „Script-Generator“ to create device commands in a visual way. The „Script-Interpreter“ sends these commands to the device. In download mode it is not necessary to have a computer connected.

Setup

The software runs under MS-Windows 95/98/ME/NT/2000 and XP. For installation insert the CD and wait for the auto-running program „Script-Installer“ (see Figure 1).



Figure 1: Script-Installer

If auto-run feature does not work, just double-click file "Script-Installer" in CD's root directory.

To start installation process, click the button „Install“ and follow the instructions on the screen (see figure 2).. It's not necessary to restart the computer after the setup.

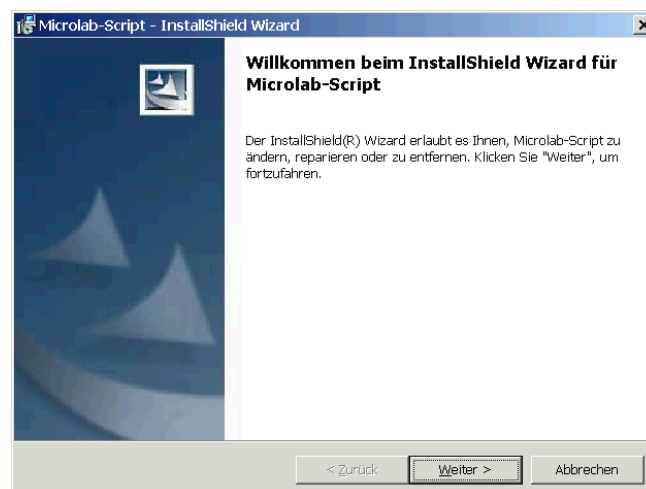


Figure 2: InstallShield-Wizard

Tutorials

To learn more about the software you can play some screen capture videos. Click on button „Tutorials“ and select an video. You do not have to install any software to view the videos because the player directly runs from CD.

Licence

After installation you must unlock the software. Click on button „Licence“ and note the displayed number (see figure 3). To receive an unlock key you have to mail this number to DURATEC Analysentechnik GmbH. Please see file „LicenceKey.TXT“ for further information. You will find an request form on the last page of this manual, too.

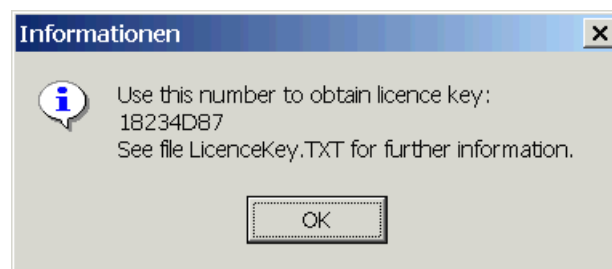


Figure 3: Licence key

First run

When you start the „Script-Generator“ via Start/Programs/Duratec/Microlab-Script, you will be prompted to type in your licence key (see Figure 4).

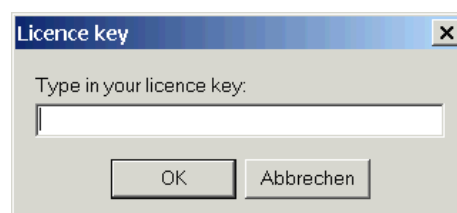


Figure 4: Type in your licence key

Device-Setup

While running the „Script-Generator“ for the first time, device setup dialog will popup (see figure 5). You have to define the syringe mode (1000 or 2000 steps for Microlab 500 series, and additional 15000 and 30000 steps for PSD/3 devices) which kind of syringe(s) and valve(s) you have. Furthermore select the COM-Port the Microlab is connected with and the port for the hand/foot switch (side port or with a adapter the TTL-port). Click on button “Test” to see if settings are OK.

Tip: Normally it is not necessary to change the default syringe resolution.

Attention: Please check „PSD/3 device“ only for PSD/3 devices and not for Microlab 500 series.

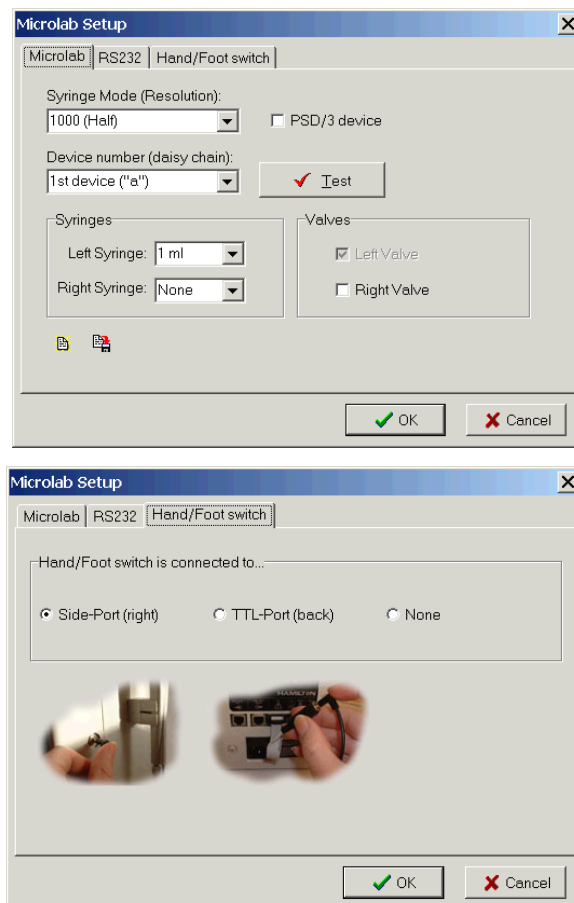


Abb.5: Geräte-Setup

De-Installation

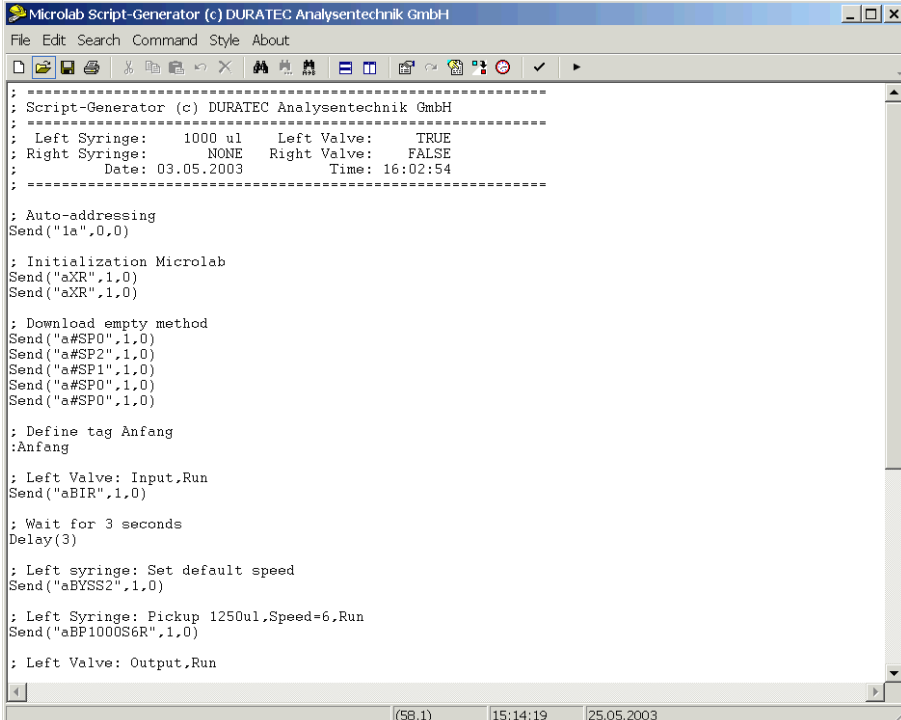
To remove the software select it from the list shown under Start/Settings/Device manager/Software and click on „Remove“. The sub-directory will not be removed while user scripts files are saved in this path.

Script-Generator

Usage

Use the „Script-Generator“ (see figure 6) for the visual creation of command series (called script or method) to control syringes and valves. These commands will be saved in ASCII-files. The „Script-Interpreter“ (see below) sends these commands to instrument. Standard procedure is like that:

- Create a method using the Script-Generator
- Run and test the method with „Script-Interpreter“
- Make some corrections if necessary
- (Optional) Download the method into the device



```
Microlab Script-Generator (c) DURATEC Analysentechnik GmbH
File Edit Search Command Style About
-----
; Script-Generator (c) DURATEC Analysentechnik GmbH
; -----
; Left Syringe: 1000 ul Left Valve: TRUE
; Right Syringe: NONE Right Valve: FALSE
; Date: 03.05.2003 Time: 16:02:54
; -----

; Auto-addressing
Send("1a".0,0)

; Initialization Microlab
Send("aXR",1,0)
Send("aXR",1,0)

; Download empty method
Send("#SP0",1,0)
Send("#SP2",1,0)
Send("#SP1",1,0)
Send("#SP0",1,0)
Send("#SP0",1,0)

; Define tag Anfang
:Anfang

; Left Valve: Input,Run
Send("aBIR",1,0)

; Wait for 3 seconds
Delay(3)

; Left syringe: Set default speed
Send("aBYSS2",1,0)

; Left Syringe: Pickup 1250ul,Speed=6,Run
Send("aBP1000S6R",1,0)

; Left Valve: Output,Run
```

Figure 6: Script-Generator

Create scripts

Select File/New. Check your device settings (Command/Setup). Now you can insert valve, syringe and special commands.

To insert a valve command select Command/Valve (see figure 7):

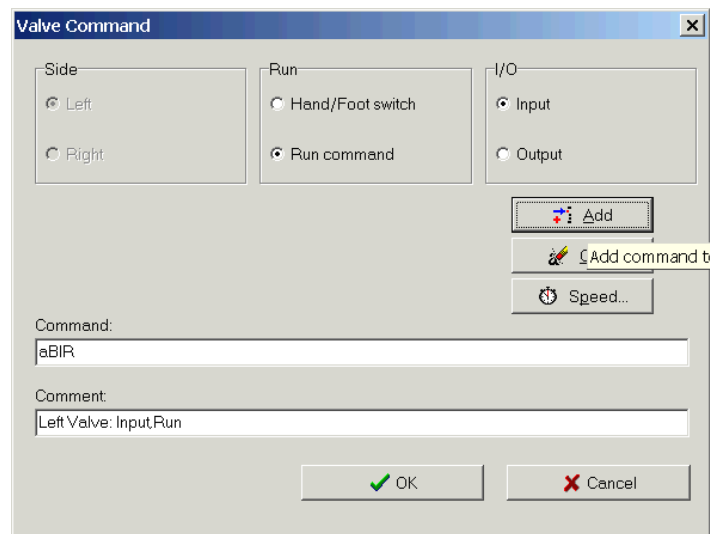


Figure 7: Valve command

You have to specify

- the valve side (left or right ride)
- the run mode (run immediately or watch for foot or hand switch)
- the valve position (input or output position)

Click button „Add“ to add the command and comment to the input fields. Click „Clear“ if you want to remove the previous command. Click „OK“ to insert command at the current cursor position in the script.

If this was the first command in the script some header and initialization lines will be inserted, too.

Select Command/Syringe (see figure 8) to insert a syringe command into the script. You have to specify

- the syringe side (left or right side)
- the run mode (run immediately or watch for foot or hand switch)
- the syringe mode (Pickup or Dispense)
- the quantity

Check field „Advanced“ to include syringe speed and return steps in the syringe command.

Figure 8: Syringe command

Click button „Add“ to add the command and comment to the input fields. Click „Clear“ if you want to remove the previous command. Click „OK“ to insert command at the current cursor position in the script.

If this was the first command in the script some header and initialization lines will be inserted, too.

Special commands

There are some special commands which can be used if Microlab is controlled by the computer (will not work for downloaded methods):

- Tag and Goto Tag for loops
- Message-Box for displaying text
- Setting and getting TTL contacts
- Delay

Click Command/Special/Tag (see Figure 9) to insert a tag into script. With Command/Special/Goto Tag (see Figure 10) the next command to proceed will be the command after the tag. This could be used for creating loops.

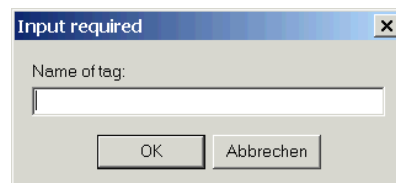


Figure 9: Define a tag

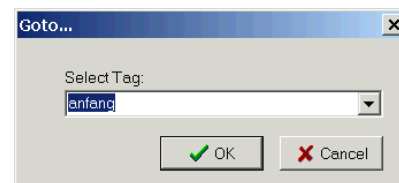


Figure 10: Goto Tag

The Message-Box (see figure 11) command shows a message on the screen. The text, icon and buttons could be chosen. When using a Message-Box the script will pause until there's an user interaction. If you enable the „Cancel“ button the user is able to interrupt the script while displaying the Message-Box.

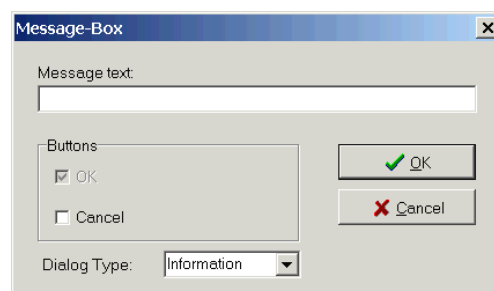


Figure 11: Message Box

Clicking Command/Special/Set/Get TTL will show the „TTL-I/O“ dialog (see figure 12). Microlab 500 series devices have 4 TTL contacts represented by Bit #0 to Bit #3.

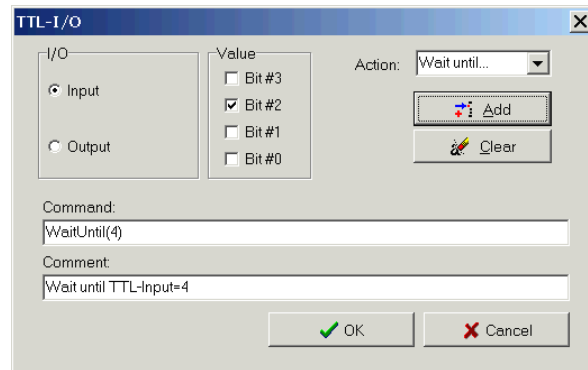


Figure 12: TTL-I/O dialog

You can connect the input command with one of these actions

- Abort if
- Continue if
- Wait until

You can use this i.e. to wait for another device to receive an start signal. Or you can interrupt the script by external setting of an TTL contact.

Command/Special/Delay (see figure 13) pause the execution of the script for the defined time. Just type in the number of seconds to wait.

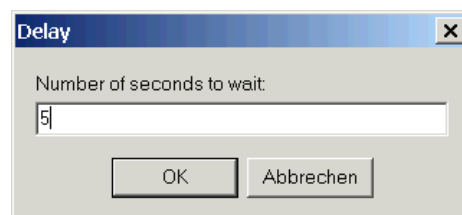


Figure 13: Delay dialog

Menu

File/New	Create new and empty script.
File/Open...	Open existing script.
File/Save as...	Save Script under a specific name.
File/Printer Setup...	Select Printer.
File/Print	Print Script.
File/Run	Start Script-Interpreter with current script.
File/Exit	Exit application.
Edit/Cut	Cut selected section.
Edit/Copy	Copy selected section into the clipboard.
Edit/Paste	Insert clipboard.
Edit/Delete	Delete selected section.
Edit/Select all	Select the whole script file.
Edit/Undo	Undo last change.
Search/Find..	Search for a text.
Search/Find next	Search for next occurrence.
Search/Replace	Search and replace text.
Search/Find first...	Search for first occurrence.
Command/Valve	Insert valve command.
Command/Syringe	Insert syringe command.
Command/Special	Insert special command.
Command/Setup	Device Setup
Style/Standard	Select Standard-Style.
Style/XP Style	Select XP-Style.
Style/Font	Select Font.
About	Show Info-Dialog.

Script-Interpreter

Usage

Use the „Script-Interpreter“ (see figure 14) to run created script files (*.msf) or a set of script files (*.mss). If script runs well you can download this method into the device. For running a download method it is not necessary to have a computer connected. Microlab 500 series supports 8 downloaded methods.

You can start the „Script-Interpreter“ by

- clicking File/Run within the „Script-Generator“
- using the start menu Start/Programs/Duratec/Microlab-Script/Script-Interpreter
- using the command line
- using the Windows Task Scheduler

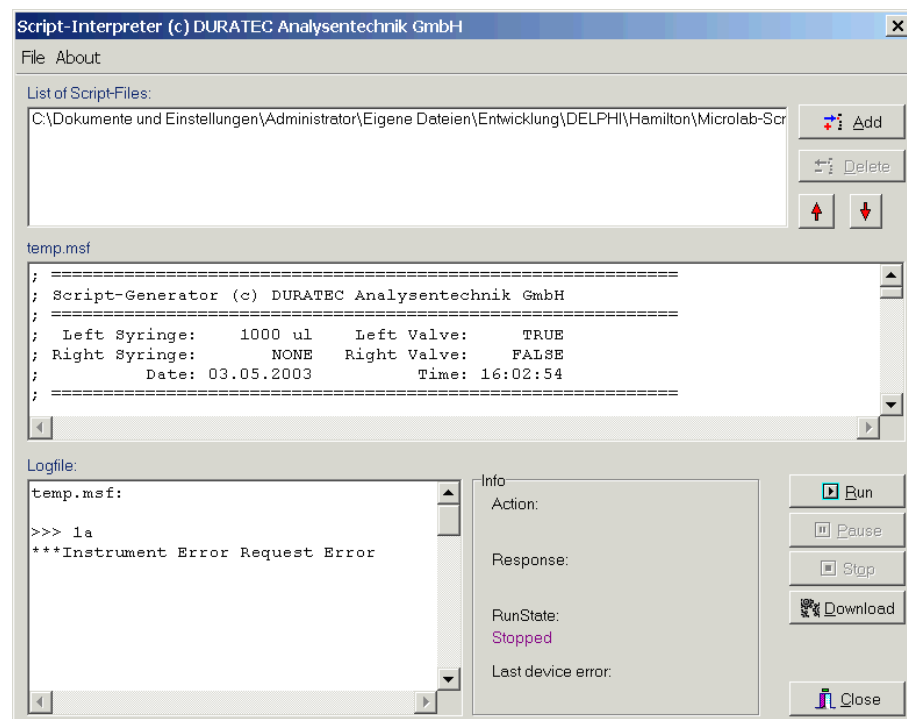


Figure 14: Script-Interpreter

Run a script

Depending on the start method the way to run the script is slightly different.

- If you use File/Run inside the „Script-Generator“ the script will be executed immediately.
- If you use the start menu the program will popup with an empty list to run. You have to add one or several script files by clicking on the button „Add“. If you select File/Open Set... you can add a complete set to the list at once. To start the script(s) click „Run“.
- The command line syntax is like that:

```
Script-Interpreter.EXE [/r=[File.msff|Set.mss] | /d=[File.msff|Set.mss]][/s=cp.cps]
```

Parameters (optional):

```
/r: Run Script (Filename (*.mss or *.msf) required)  
/d: Download Script (Filename (*.mss or *.msf) required)  
/c: Use COM-port settings (Filename (*.cps) required)
```

Filename(s) (optional):

```
*.msf: single Scriptfile  
*.mss: Script-Set  
*.cps: COM-port settings
```

- The Windows Task Scheduler can use the same command line syntax.

Script-Set's

A Script-Set is a list of several single Script-Files. If you run a Script-Set the included Script-Files are executed in the order they appear in the Script-Set.

To create a Script-Set click on button „Add“ to add the single Script-Files to the list. You can change the order execution with the button „Up“ and „Down“. Save the set by selecting File/Save Set as... and give the set an individual name. The file name extension is mss.

Menu

File/Open Set	Open Script-Set
File/Save Set as...	Save list of scripts as Script-Set
File/Download	Download current script into device
File/Exit	Exit application.
About	Show Info dialog

Appendix

Files and directories

\Programs\Duratec\Microlab-Script

Script-Interpreter.EXE	Program Script-Interpreter
Script-Generator.EXE	Program Script-Generator
ComPort.CPS	RS232-Settings
Microlab.MLS	Microlab-Settings
Gui.SET	Size and position of application windows
Licence.SIG	Licence key
LicenceKey.TXT	Readme-File for licence key
Handbuch.PDF	Manual (German)
Manual.PDF	Manual (English)

\Programs\Duratec\Microlab-Script\Scripts

*.msf	Script-File's
*.mss	Script-Set's

\Programs\Duratec\Microlab-Script\Tutorial

*.avi	Tutorial videos
*.doc	Text for videos
CAMPLAYER.EXE	Video player

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Request form (Licence key)

Please do not forget to fill in:

Displayed number is:

Register software for::

E-Mail:

Date

Signature

Please send licence key by:

- Post
- Phone
- e-Mail