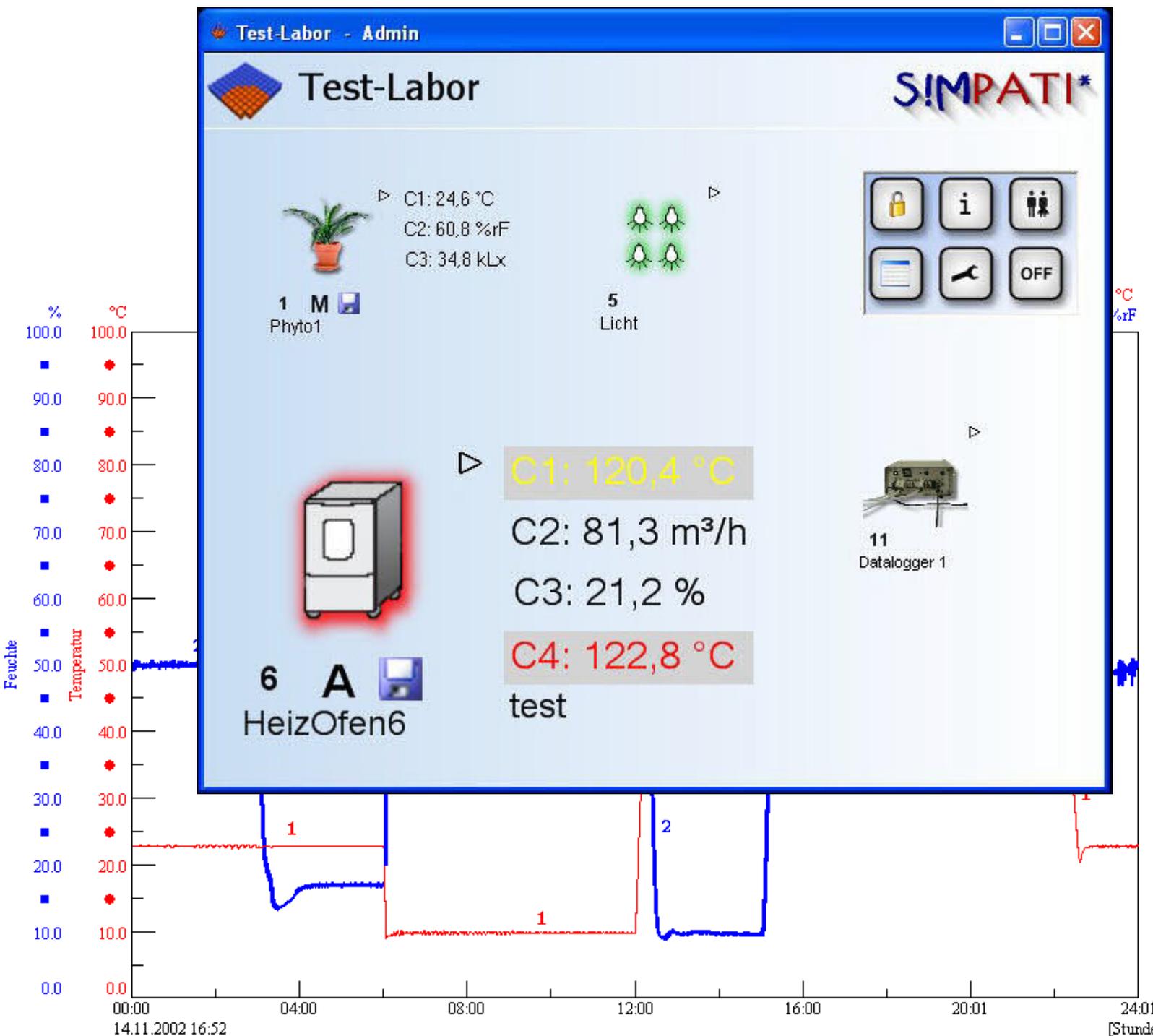


# SOFTWARE SIMPATI

*Simulation pack for test system integration*

## Installation and Operation Manual





## UPGRADE NEWS 4.04 → 4.06

- The different program parts have been adapted for application in the pharmaceutical sector.
- SIMPATI-Admin rights are required for operation of the mailer.
- Backup copies with a time stamp are stored in directory Simpati\System\XML\_Backup in case configuration settings of SimMailer are saved.
- The surface of the status menu is now more user-friendly.
- When starting simmenu\_net it is possible to preset the preferred language via an argument (example given in simpati.str\_EXAMPLE)
- Modification of driver
- In case of CTC, Mops etc. it is once again possible to start programs with a lead time.



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# 1 Introduction and general information

- Before installing the SIMPATI software, please read all of the instructions in this operating manual, the operating manual for the chamber and its controller.

The operator must compile appropriate operating guidelines from the current operating manuals, taking into account the relevant local and operating conditions, together with the language used by the operating personnel.

## 1.1 Finding your way around

Explanation of the pictograms used in this operating manual:

### 1.1.1 Symbols

- Items in a list are indicated by a dash.
  - Instructions for the user and operating company are indicated by a dot.
- Cross-references are indicated by an arrow.

### 1.1.2 Danger warnings and symbols

Warnings in this operating manual are explained by means of text and adjacent symbols.



#### **DANGER**

*Failure to comply with these instructions could endanger people, other living creatures or the environment.*



#### **CAUTION**

*Non-compliance with these instructions could cause damage to the chamber or test specimen.*



#### **NOTE**

*This is used to indicate additional helpful information.*

## 1.2 Warranty

Any warranty services are dependent on the immediate return of the completed warranty reply form and on full compliance with the specified requirements. The warranty is limited to the replacement of the software package, all other claims are herewith excluded.

### 1.3 License rights

The software is issued with a license for a single workplace.

Corresponding additional licenses are required if multiple chambers are in operation.

Additional licenses are available from our service organisation.

### 1.4 Application and usage

This software can be used to control a maximum of 99 chambers with various control methods.

### 1.5 Safety instructions



#### DANGER

- Follow the instructions in the operating instructions for the chamber and its controller.

### 1.6 Preconditions

Computer system	IBM-compatible PC
Central processing unit	≥Pentium 4, ≥2.4 GHz
Operating system	Windows 7 (32 bit/64 bit) Windows Server 2008 (32 bit/64 bit) Windows XP Professional Windows 2003 Server Windows Vista
Available hard disk capacity for SIMPATI	≥200 MB
Graphics	≥800 x 600 pixels, 65536 colours with appropriate monitor
Supported interfaces	RS 232, RS422, RS 485, IEEE 488.2 with external converter, 10/100 Mbit LAN
Printer	All printers supported by the operating system
Software	NET Framework 2.0 and 3.5 SP1 PDF reader
Operating memory	≥2GByte



#### CAUTION

- Only use the supplied connecting cables as this will help minimise susceptibility to interference and faults.
- Please note that special applications may have different requirements. Observe the descriptions for these applications in the Appendix.

## 1.7 Online help and operating manual

The operating manual and the online help complement each other.

Registration code <i>(Page 5)</i>	Hotline - Tel. No.
10000 to 19999 45000 to 59999	07433 / 303-4172
20000 to 44999 60000 to 69999	06408 / 84-6435

### Documentation in the following format: \*.pdf

The operating manual can be read using any common PDF reader. You can find the operating manual in the directory ..\simpati\reader\ and on the enclosed CD.



## 2 Installation



**NOTE**

You must have administrator rights for the PC to carry out the installation. When you use the program name »SIMPATI« in directories, you have to spell it as follows: *Simpat*.

Please have your serial number and registration code ready. The serial number and the registration code can be found on the CD and the license.

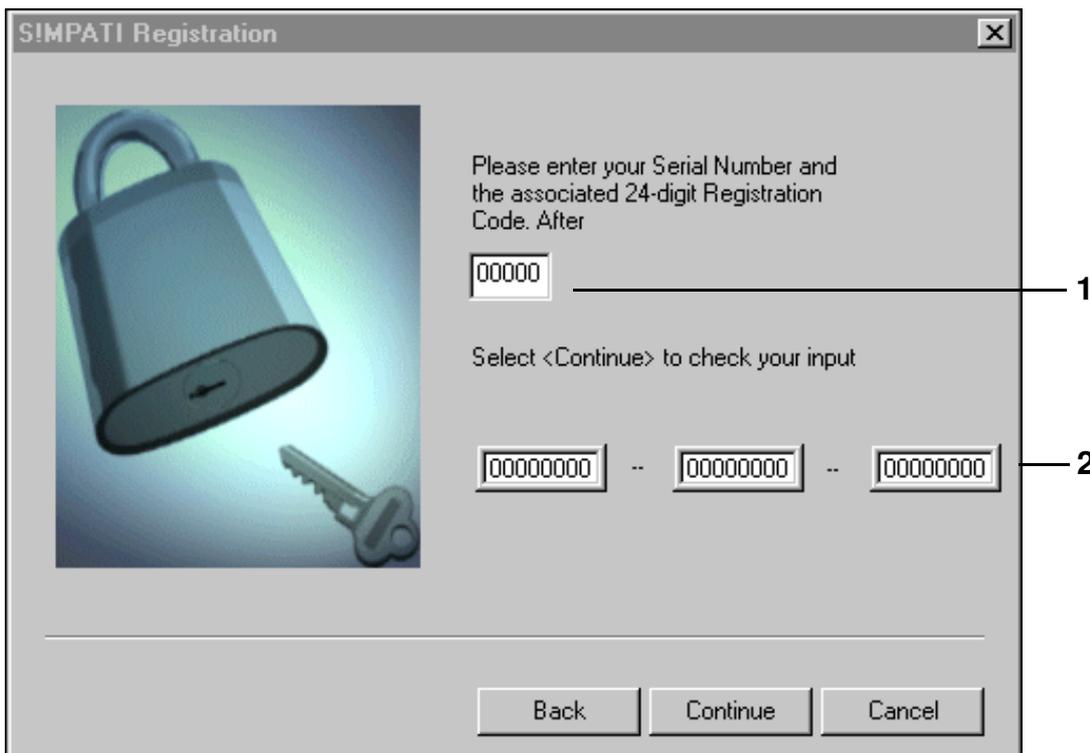
- Insert the CD into the drive and start "setup.exe".

If you would like to output a file which documents the installation sequence and records the copied files, for example, then enter the following command:

D:\setup.exe /verbose"C:\xyz.log

C:\xyz stands for your data medium and the file name that this file is supposed to receive.

You will be guided through the installation process.



- 1 You must enter the serial number to continue the installation.
- 2 The registration code does not have to be entered here, it can be input and modified (new license) in the configuration program »Simsetup« → 3.1 (Page 9).

---

We always indicate by default the directory C:\simpati\.. for installation. This can be changed if required. This directory is also specified for the installation of the demo version. This will overwrite the demo version.

**NOTE**

*Under Windows Vista, Windows Server 2008 and Windows 7 S!MPATI must not be installed under C:\Programme or C:\Program files. In this case changes in the S!MPATI-configuration are only saved under the logged-in Windows user and are not visible for other Windows user.*

Once installation has been successfully completed, the configuration program opens automatically (»Simsetup«). Before beginning configuration, we recommend that you first close the program and restart the computer.

When S!MPATI is started, the configuration program opens again automatically  
→ [3 Configuring S!MPATI and the chamber \(Simsetup\) \(Page 7\)](#). Operation is only possible once the chamber configuration has been implemented.

### 3 Configuring S!MPATI and the chamber (Simsetup)

The program is adapted to the PC and chamber settings with the aid of the configuration program (Simsetup). Basic settings (e.g. for file storage) are entered in the configuration program.

Make sure that the following requirements for configuration have been met:

- Plug connections to the chambers must be made.
- The chamber must be configured → [Appendix: Chamber controller settings](#) (The chamber address and chamber interface protocols must be set up.)



#### NOTE

*There should not be gaps between the chamber numbers when assigning them in S!MPATI!*

Before you begin to upload the chambers, we recommend that you check the settings of the chamber controllers → [Appendix: Chamber controller settings](#), especially the assignment of the address:

If you upload chambers with Mincon, Simcon, MOPS/CTC/TC or ISAR controllers, a chamber number (address) must be assigned twice to assure that there are no gaps between the numbers in S!MPATI. This does not result in conflicts, as another interface is used for chambers with a Mincon/Simcon controller than for chambers with a MOPS/CTC/TC or ISAR controller.

- Serial number and registration code are required (shipped with the program). If just one chamber is added, only the registration code is required.
- The control type of the chamber must be known (→ operating instructions for the chamber/control unit).

#### Has the correct configuration program (»simsetup« or »simsetup3K.exe«) been chosen?

After the startup of Simpati, the configuration program »simsetup3K.exe« is automatically opened for chambers with a Mincon, Simcon or Simpac controller.

The configuration program »simsetup.exe« has been installed for configuration of the remaining controllers. Launch this program from the S!MPATI program directory (.../simpati/system).



#### NOTE

*Chambers with a Mincon or Simcon controller can be configured using both configuration programs.*



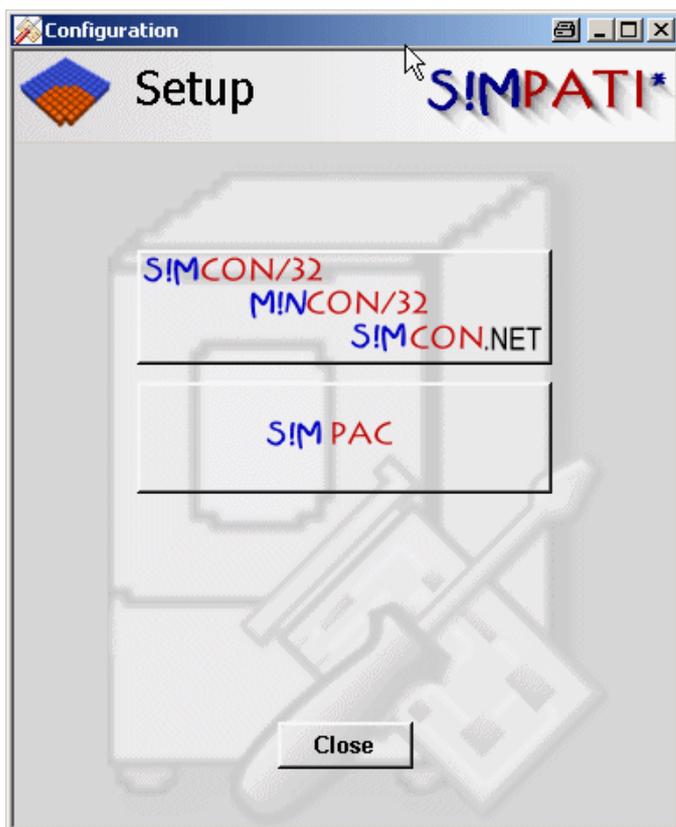
#### NOTE

*The serial number and the registration code can only be entered via the configuration program »simsetup.exe«. → [System configuration \(Page 9\)](#)*



#### NOTE

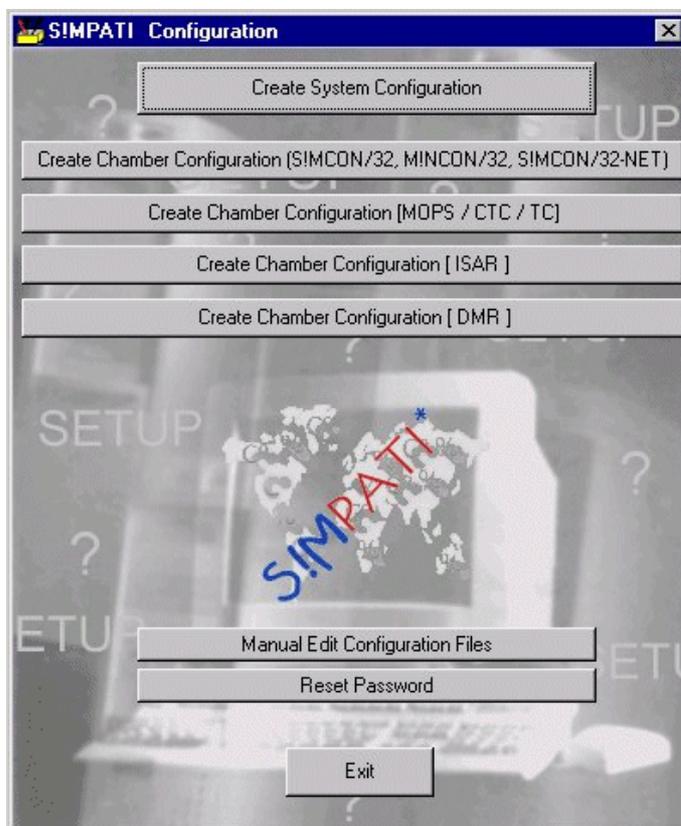
*A Simpac controller (if connected in series) must be uploaded via the Simcon/Mincon menu.*



→ Fig., Page 10

→ Fig., Page 12

Configuration program »Simsetup3K«



→ Fig., Page 9

→ Fig., Page 10

→ Fig., Page 13

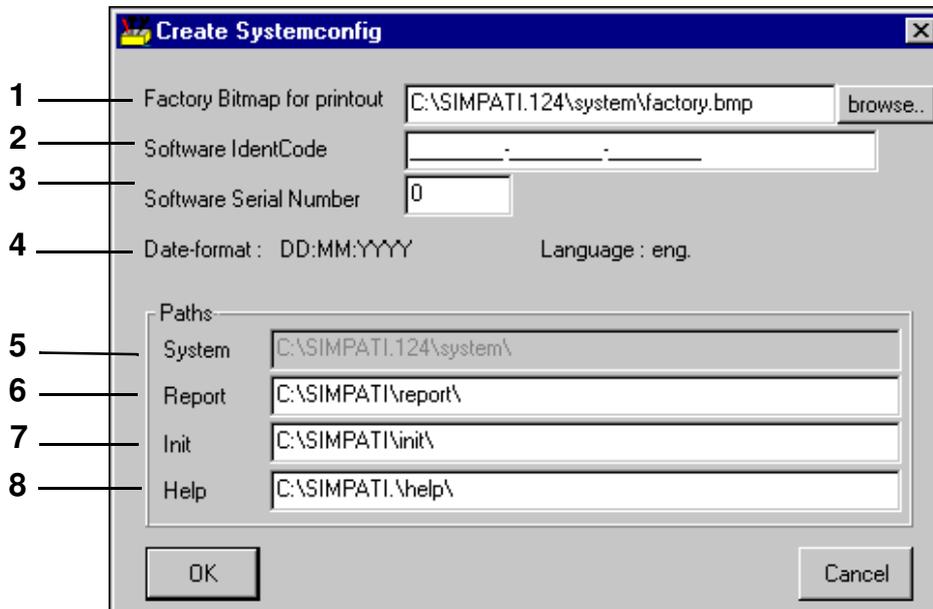
→ Fig., Page 15

→ Fig., Page 16

→ 3.7 (Page 16)

Configuration Simsetup

### 3.1 System configuration and registration



*System configuration*

#### 1 Graphics file for printout

The bitmap specified here (\*.bmp) appears on the top left edge of every printout. Enter the designation for the data medium and the complete directory.

#### 2 The registration code is taken from the installation and can be changed here.

When purchasing additional licences you will need to enter the new registration code here.

#### 3 The serial number is taken from the installation and can be changed here.

#### 4 The language for Simpati was selected during installation.

#### 5 SIMPATI program directory

#### 6 This shows the directory in which the daily reports are saved.

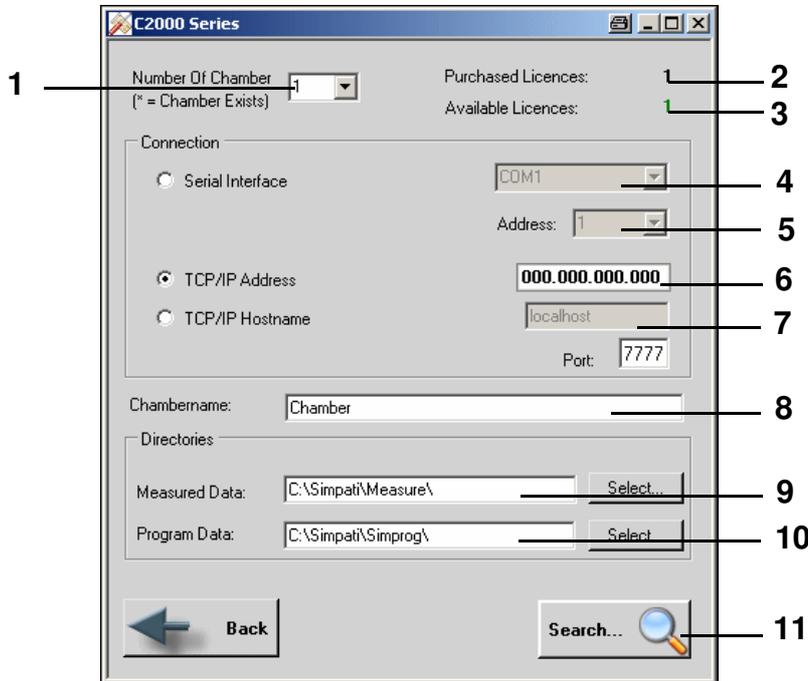
#### 7 This shows the directory in which the configuration files of the chamber are saved.

#### 8 This directory is intended for the help files but is not used at present.

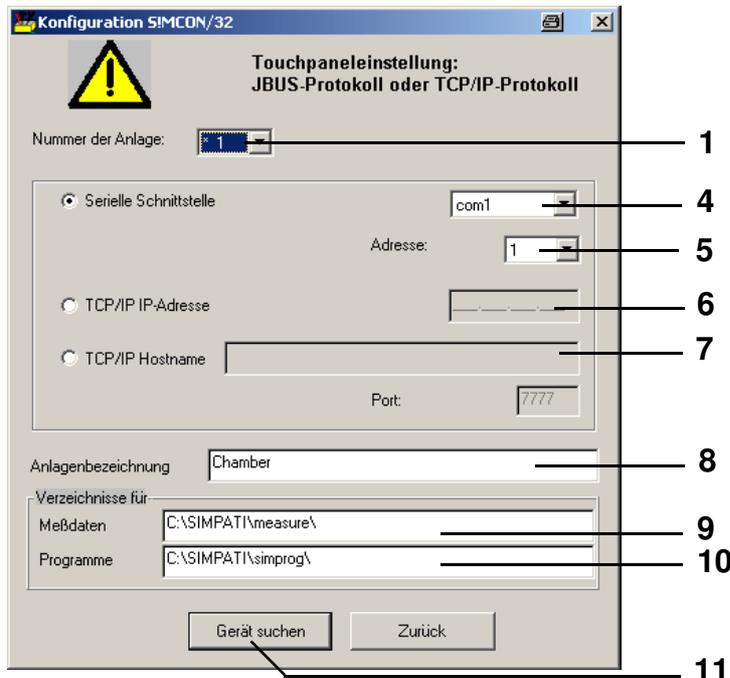
Configuring chambers with a Mincon/Simcon controller

3.2 Configuring chambers with a Mincon/Simcon controller

Make the following settings for the chambers with a Mincon/Simcon controller in the following menus of the corresponding Simsetup → (Page 7).



Mincon/Simcon configuration (»Simsetup3K«)



Mincon/Simcon configuration (Simsetup)

SimSetup.fm  
en 08.2011 / Version 4.06

**1 Chamber selection**

All previously configured chambers are marked with an asterisk.

2 Total number of purchased licences

3 Number of available licences which have not yet been assigned to a chamber

4 All available ports are shown automatically. Note: It may take a while to search for ports. Do not use the same port as for the chambers with other controllers.

5 Address in the chamber controller → [Appendix: Chamber controller settings](#)

6 IP address of the chamber

7 Host name of the chamber

**8 Chamber designation**

Define the name of the chamber here (max. 20 characters); it appears in the main menu → [Fig., Page 25](#). The name can be changed again later on → [Fig. Defining general chamber specifications, Page 37](#).

9 This shows the directory in which the measured data for this chamber are saved.

10 This shows the directory in which the test programs for this chamber are saved.

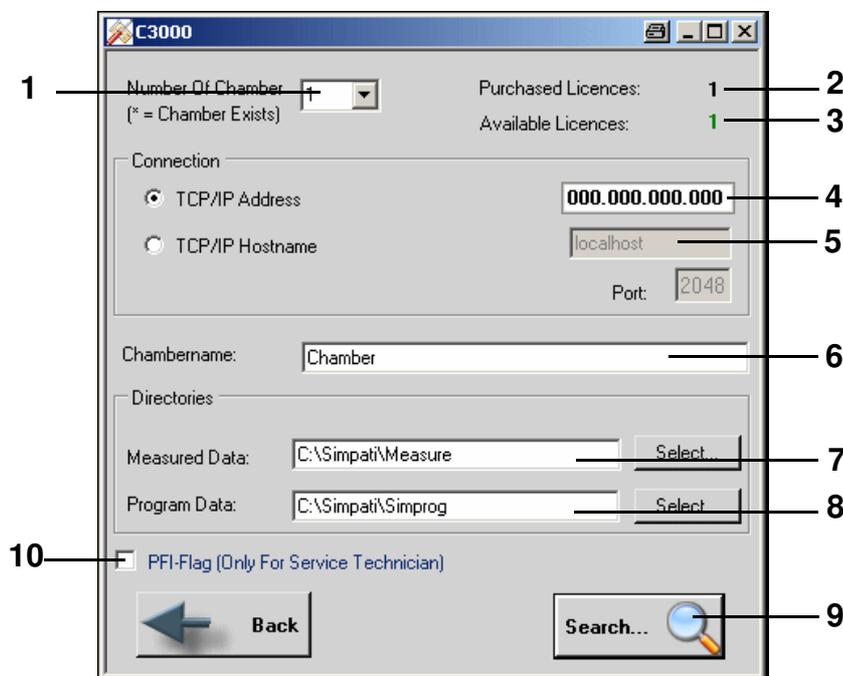
11 The system searches for connected chambers via the interface.

Saving the configuration → [Fig. System configuration Pos. 7 Page 9](#)

## Configuring chambers with a Simpac controller

### 3.3 Configuring chambers with a Simpac controller

Make the settings for the chambers with a Simpac controller in the following menu of the configuration program »Simsetup3K« → (Page 7).



Simpac configuration (»Simsetup3K«)

#### 1 Chamber selection

All previously configured chambers are marked with an asterisk.

#### 2 Total number of purchased licences

#### 3 Number of available licences which have not yet been assigned to a chamber

#### 4 IP address of the chamber

#### 5 Host name of the chamber

#### 6 Chamber designation

Define the name of the chamber here (max. 20 characters); it appears in the main menu → Fig., Page 25. The name can be changed again later on → Fig. Defining general chamber specifications, Page 37.

#### 7 This shows the directory in which the test programs for this chamber are saved.

#### 8 This shows the directory in which the test programs for this chamber are saved.

#### 9 The system searches for connected chambers via the interface.

Saving the configuration → Fig. System configuration Pos. 7 Page 9

#### 10 PFI-flag for service personnel only

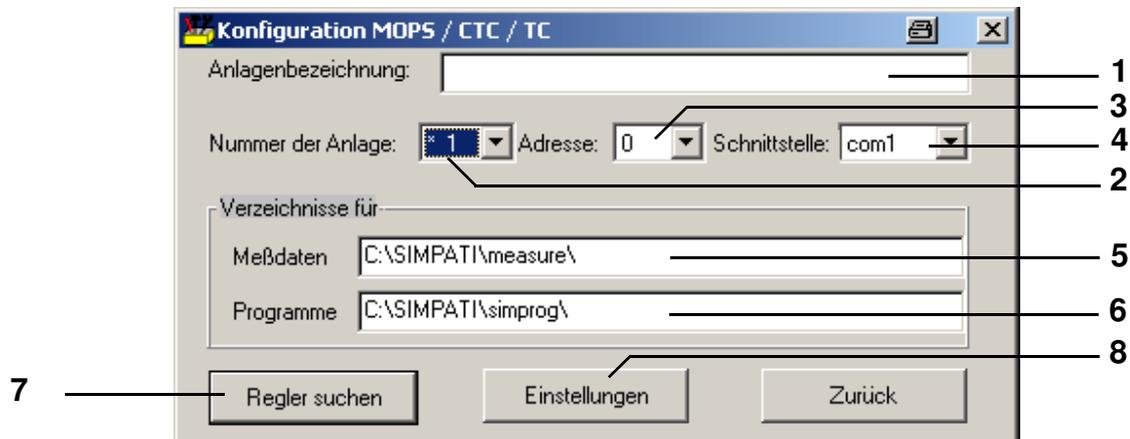


#### NOTE

The serial number and the registration code can only be entered via the configuration program »simsetup.exe«. → System configuration (Page 9)

### 3.4 Configuring chambers with a MOPS/CTC/TC controller

Enter the settings for chambers with a MOPS/CTC or TC controller in this menu. → [Appendix: Chamber controller settings](#)



Configuration MOPS/CTC/TC

#### 1 Chamber designation

Define the name of the chamber here (max. 20 characters); it appears in the main menu → [Fig., Page 25](#). The name can be changed again later on → [Fig. Chamber configuration in SIMPATI, Page 37](#).

#### 2 Chamber selection

All previously configured chambers are marked with an asterisk.

#### 3 Address in the chamber controller → [Appendix: Chamber controller settings](#)

#### 4 Interface

All available ports are shown automatically. Note: It may take a while to search for ports. Do not use the same port as for the chambers with other controllers.

#### 5 This shows the directory in which the measured data for this chamber are saved.

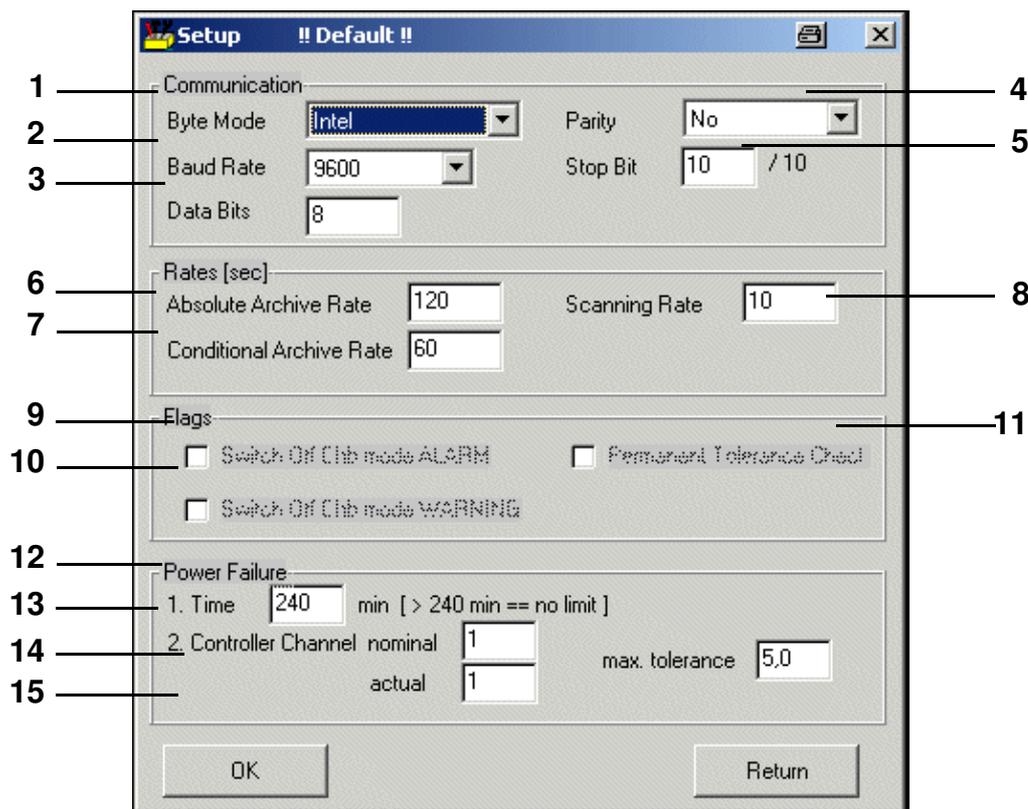
#### 6 This shows the directory in which the test programs for this chamber are saved.

#### 7 The system searches for connected chambers via the interface.

Saving the configuration → [Fig. System configuration Pos. 7 Page 9](#)

#### 8 Specific settings of the chamber → [Fig. Settings, Page 14](#)

Configuring chambers with a MOPS/CTC/TC controller



Settings

- 1 Storage on hard drive; normally: Intel
- 2 Transfer rate; normally: 9600
- 3 Transfer byte size, normally: 8
- 4 Transmission check, standard:
- 5 Transmission stop recognition

If these data differ from the normal standard values given here, this must be noted in the appropriate documentation.

- 6 Time between two archiving cycles → *Pos. 7*

**7 Conditional archiving cycle**

If the warning limits are exceeded, the absolute archive rate (6) is switched to the conditional archive rate, with which recording then continues.

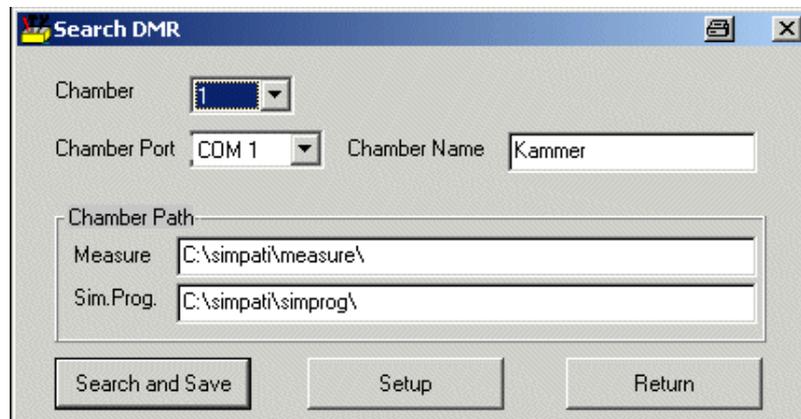
→ *Entering setpoints and limits (Page 50) Pos. 7.*

- 8 Refresh rate for the chamber information
- 9 Check is stopped if an alarm message is issued
- 10 Check is stopped if a warning is issued

- 11 Continuous interrogation of the tolerance
- 12 Maximum tolerated power failure time (0-240 min)  
If 240 min is entered an infinite power failure time is tolerated. The test continues after the power failure. The computer will need to be restarted to continue archiving.
- 13 Control variable whose setpoint is used for the tolerance calculation, here 1=Temperature.
- 14 Control variable whose actual value is used for the tolerance calculation, here 1=Temperature.
- 15 Maximum tolerated difference between setpoints and actual values. If the difference between the setpoint and the actual value is higher, the test is not restarted.

### 3.5 Configuring chambers with a DMR controller

Enter the settings for chambers with a DMR controller in this menu.



Configuration DMR

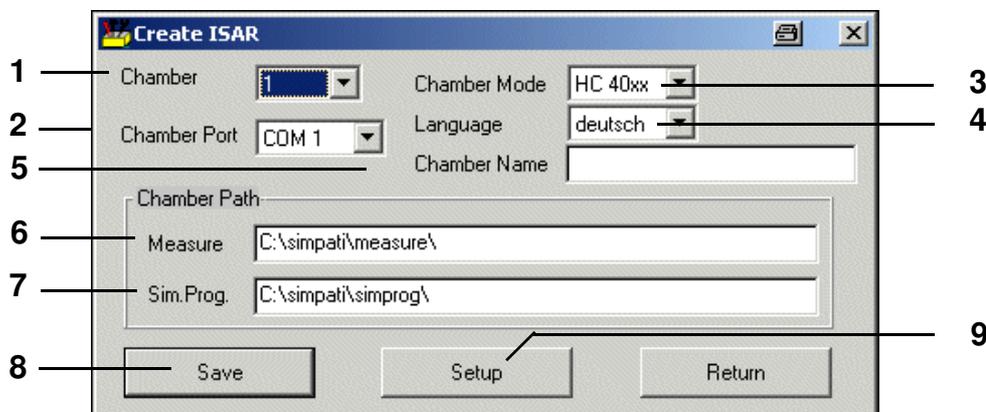
The description of this menu corresponds to the descriptions in Chapter → [3.4 Configuring chambers with a MOPS/CTC/TC controller \(Page 13\)](#)

Specific settings of the chamber → [Fig. Settings, Page 14](#)

## Configuring chambers with an ISAR controller

### 3.6 Configuring chambers with an ISAR controller

Enter the settings for chambers with an ISAR controller in this menu.



Configuration ISAR

- 1 Chamber selection
- 2 All available ports are shown automatically. Note: It may take a while to search for ports. Do not use the same port as for the chambers with other controllers.
- 3 Factory type designation of the chamber
- 4 Language of the chamber controller (the channel names are displayed in this language)
- 5 Define the name of the chamber here (max. 20 characters); it appears in the main menu → [Fig., Page 25](#). The name can be changed at a later time → [Chamber configuration in SIMPATI \(Page 37\)](#)
- 6 This shows the directory in which the measured data for this chamber are saved.
- 7 This shows the directory in which the test programs for this chamber are saved.
- 8 Saves the settings
- 9 Specific settings of the chamber → [Fig. Settings, Page 14](#)

### 3.7 Manual editing of the configuration data

After the password has been entered, changes can be made manually to the configuration files.



#### CAUTION

The changes must only be implemented by trained service personnel or by arrangement with our Hotline → [1.7 Online help and operating manual \(Page 3\)](#).

#### 3.7.1 Initialising the password

No function defined.

## 3.8 Other controllers, third party devices and their special features

The controllers and third party devices listed in the next chapters cannot be configured in Simsetup. You can find the pin assignment for the interface cable in the Appendix → [Appendix: Connecting cable pin assignment](#).

An additional diskette containing the appropriate configuration files and an installation manual is supplied with the S!MPATI software for this purpose. Please ensure that you follow the instructions in the manual carefully. The following points should also be taken into account:

The download and upload functions (transfer of test programs from chamber → PC or PC → chamber) are not supported, in other words, online operation is all that is possible. The PC must be permanently connected to the chamber.

With the exception of Prodicon Plus and Stange controllers, any error messages from the chamber are not displayed in S!MPATI.

### 3.8.1 MOPS/CTC/TC controller

- The software test sample protection can only be manually adjusted from EPROM Version 1.73 or higher.

### 3.8.2 Gateway with CTC controller

- Automatic test programs cannot be uploaded
- No background programs possible
- No fast program advance possible
- The software test sample protection cannot be manually adjusted

### 3.8.3 ISAR controller

- Simsetup reads the chamber configuration via the Init file; i.e. if a chamber is found, this does not mean that communication between chamber and software is functioning.
- Certain digital channels (noxious gas, radiation, moisture) cannot be manually adjusted.
- No error acknowledgement possible
- No program advance possible
- No test program upload possible
- No background programs possible
- The software test sample protection cannot be manually adjusted
- The chamber status can become desynchronized as a result of the chamber being operated from S!MPATI and from the chamber control unit. Recommendation: the chamber controller should generally be controlled from the control unit or only via S!MPATI.
- The Wait function can only be allocated to one channel.
- Protocol: transparent

**Other controllers, third party devices and their special features**

---

**3.8.4 Mincon / Simcon controller**

- Test programs can be uploaded with Flash version 00.18 or higher.
- The symbolic editor is to be used exclusively for programming. → 9.2 (Page 62)

**3.8.5 DMR controllerler**

- Test programs can only be uploaded from DMR version »R2-38« or higher  
→ 10 Test program transfer between the chamber and SIMPATI (Page 113).

**3.8.6 Prodicon controller**

Enter the following settings:

- Switch on the »ON« and »EXT« keys (both lamps should light up)
- Set the address 0 to 31 on the 6-pin DIP switch on the rear of the Prodicon (Standard = addr. 1)

**3.8.7 Dicon 50x/100x controller and Imago 500**

Enter the following settings on the controller:

- Protocol: Modbus
- Parity: none
- Stop bit: 1
- Baud rate: 9600
- Address:1-32 (Standard = 1)

**3.8.8 Rotronic Hygroflex 3**

Enter the following settings on the controller:

- Baud rate: 19200
- Data bits: 7
- Even parity bit
- Stop bit: 1
- Address: 0

**3.8.9 Testa FID2000MP**

Enter the following settings on the controller:

- Baud rate: 9600
- Data bits: 8
- Odd parity bit
- Stop bit: 1
- Address: 0

**NOTE**

*You will need the interface cable and a special software version from Testa!*

### 3.8.10 Stange SE-4xx and 5xx

Enter the following settings:

- Baud rate: 19200
- Data bits: 8
- No parity
- Stop bit: 1
- Address: 1



#### NOTE

*The chamber's PLC must be adapted for operation with SIMPATI.*

### 3.8.11 Prodicon Plus controller

Enter the following settings:

- External operation with:
  - Baud rate: 9600
  - Data bits: 8
  - Parity: none
  - Stop bit: 1

The set address corresponds to the address in SIMPATI.

- Press »START«; the graphics screen is turned on

### 3.8.12 2/3 channel process interface

Enter the following settings:

- Left DIP switch: 8 = OFF (RS232 active)
- Right DIP switch: 1, 2, 3 = ON (9600 baud)

### 3.8.13 QNX controller

Enter the following settings:

- Start external operation (display = External OFF)

### 3.8.14 Anaprog controller

Enter the following settings:

- Set the baud rate to 2400 baud
- Set address 1
- You may have to delete the working program at program location »0«.

**Other controllers, third party devices and their special features**

---

**3.8.15 SBC controller**

Enter the following settings:

- Baud rate: 9600
- Data bits: 8
- Parity: none
- Stop bit: 1
- Address: any desired address
- After switching on the main switch, you must press the »EXT« key on the controller.

**3.8.16 Eurotherm 900 EPC**

Enter the following settings:

- Baud rate: 9600
- Data bits: 7
- Parity: odd
- Stop bit: 1
- Address:

**3.8.17 Datalogger 8590-9C, 8990-6C and 8390-1, 8990-1**

→ [Appendix: Support for the 8990-6C Data Logger with Checksum \(Page 1\)](#)

## 4 SIMPATI program start

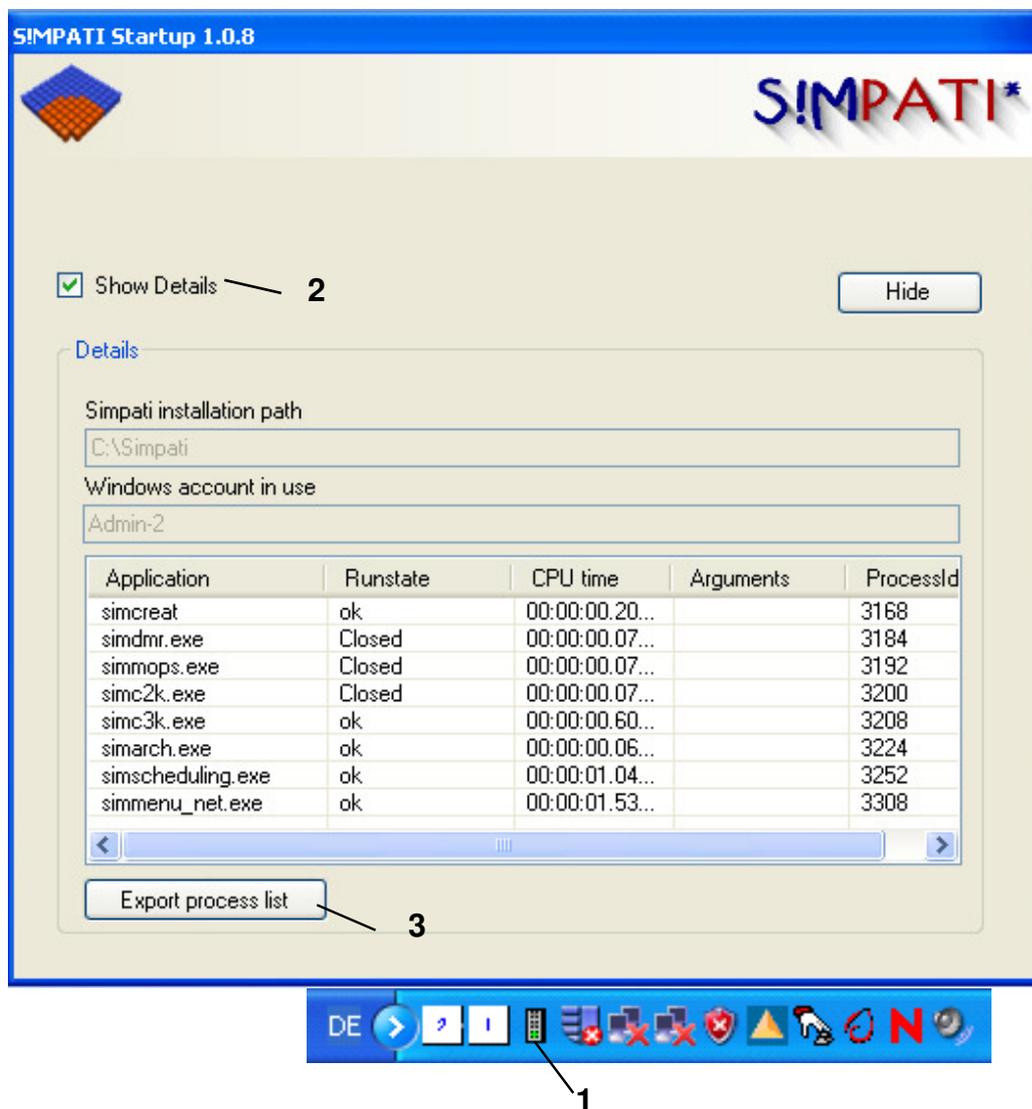


### NOTE

To use the SIMPATIWeb software<sup>1)</sup>, please note that certain requirements → [Appendix: SIMPATIWeb software1\) \(Page 1\)](#) must be met Make sure you log on as a »Simpati User«!

After you have started the program, the start menu appears. After a successful start, the program is automatically displayed as an icon in the task bar in the lower part of the screen. This makes it possible to run a status enquiry for the SIMPATI processes at any time.

- 1 Menu right-clicking the mouse – show display
- 2 Browse list of SIMPATI activities
- 3 Export process list to a .txt file

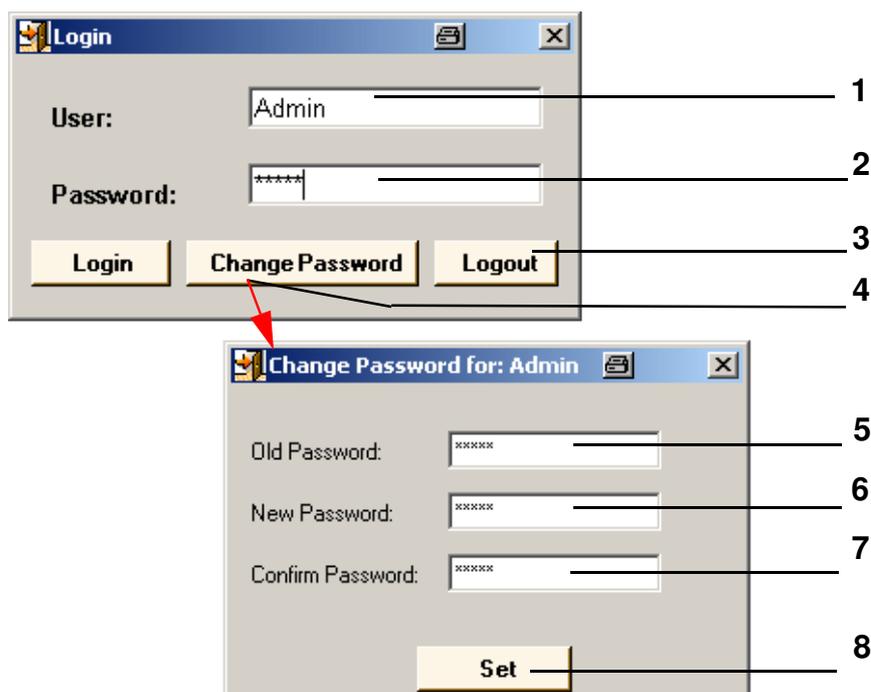


## 4.1 S!MPATI password and user name

Access not possible without password.

The following levels are used for password management:

Level	User group	Factory user name → Fig. Password , Pos. 1 User name Page 23	Factory password → Fig. Password , Pos. 2 Password Page 23
		<b>Please note that user names and passwords are case-sensitive.</b>	
Level 0	Administrator	Admin	admin
Level 1	User	Simpati user	user
Level 2	Guest	Simpati guest	guest
Level 3 to level X	Other user	XXXXXXXX	user



Password

- 1 User name
- 2 Password
- 3 Cancel process
- 4 Menu for changing the password
- 5 Old password
- 6 New password
- 7 Confirmation of the new password
- 8 Save new password

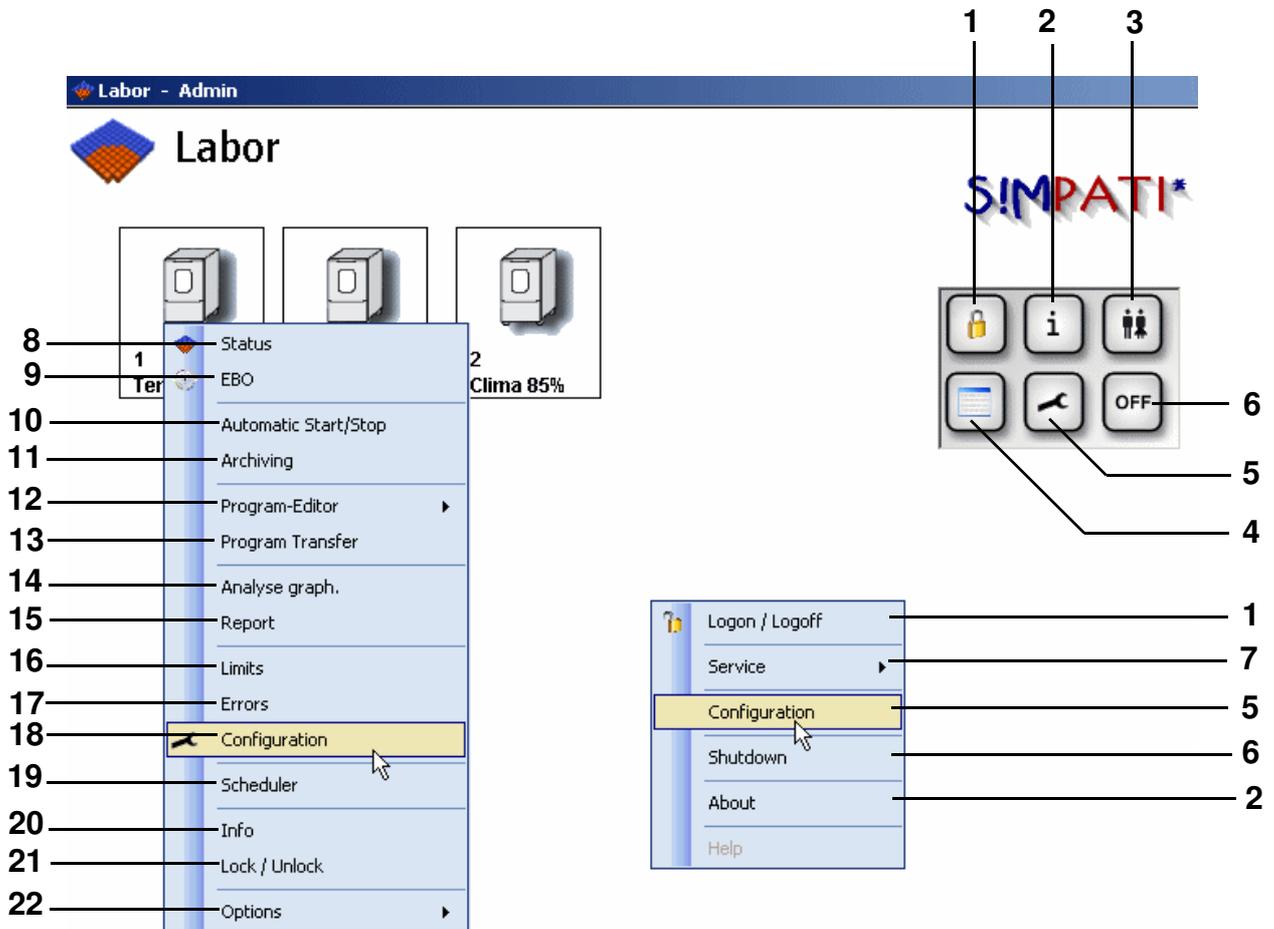
Detailed description of the password function → [5.5 User administration \(Page 31\)](#)

**NOTE**

*If you would like to continue logging on as "superuser", you can create a user called "superuser" → [5.5 \(Page 31\)](#) and assign an empty password. This does not apply to the application according to 21 CFR Part 11 → [Appendix: Advanced installation for operation in the pharmaceutical field](#); blank passwords are not accepted here.*



## 5 The main menu and the toolbox



SIMPATI main menu

### Functions of the toolbox and the main context menu

With the aid of the toolbox you can access all menus with the functions required for general settings and administration for SIMPATI.

- 1 The user is logged off in SIMPATI. Clicking this button again opens up the login menu → [Password \(Page 22\)](#).
- 2 Information about the SIMPATI version and licences → [5.6 Version information \(Page 36\)](#)
- 3 For user administration → [5.5 User administration \(Page 31\)](#)
- 4 Chamber representation in table form → [5.3 Chamber representation in table form in the main menu \(Page 30\)](#)
- 5 Configuration of the main menu → [5.2 Configuration of the main menu \(Page 28\)](#)
- 6 SIMPATI is closed.
- 7 Startup of the service tools »MTP« and »CTC«

**Chamber context menu for chamber configuration**

- 8 → *Status display for the chamber status, Page 41*
- 9 → *Tests in manual mode via the Single user interfaces, Page 45*
- 10 → *Starting/stopping a test program, Page 115*
- 11 → *Archiving, recording and evaluation of a test, Page 133*
- 12 Compiling a test program
  - *Creating a test program with the symbolic editor, Page 62*
  - *Creating a test program with the graphical editor, Page 85*
  - *Creating a test program for a shock chamber, Page 101*
- 13 → *Test program transfer between the chamber and SIMPATI, Page 113*
- 14 → *Graphical evaluation, Page 135*
- 15 → *Chamber reports (Simreport), Page 155*
- 16 → *Setting warning/alarm limits and setpoints for the manual mode, Page 50*
- 17 → *Displaying a list of warning messages/alarm messages/fault messages, Page 165*
- 18 → *Defining general chamber specifications, Page 37*
- 19 → *The Planner (Scheduler), Page 117*
- 20 → *Displaying chamber information, Page 40*
- 21 Disable/enable operation of the chamber in SIMPATI
- 22 Select the size of the chamber symbol, show actual values next to the chamber symbol

## 5.1 Chamber symbols – function and representation

The main menu displays the number of licensed chambers.

The form of the chamber symbol can be selected via the chamber configuration menu »Chamber configuration in SIMPATI« Pos. 2 Page 37.

The size of a chamber symbol can be changed via the context menu of the chamber. → Fig. SIMPATI main menu, Page 25 Pos. 22. You can use this menu or the arrow next to the chamber symbol at the top right to show the actual values.

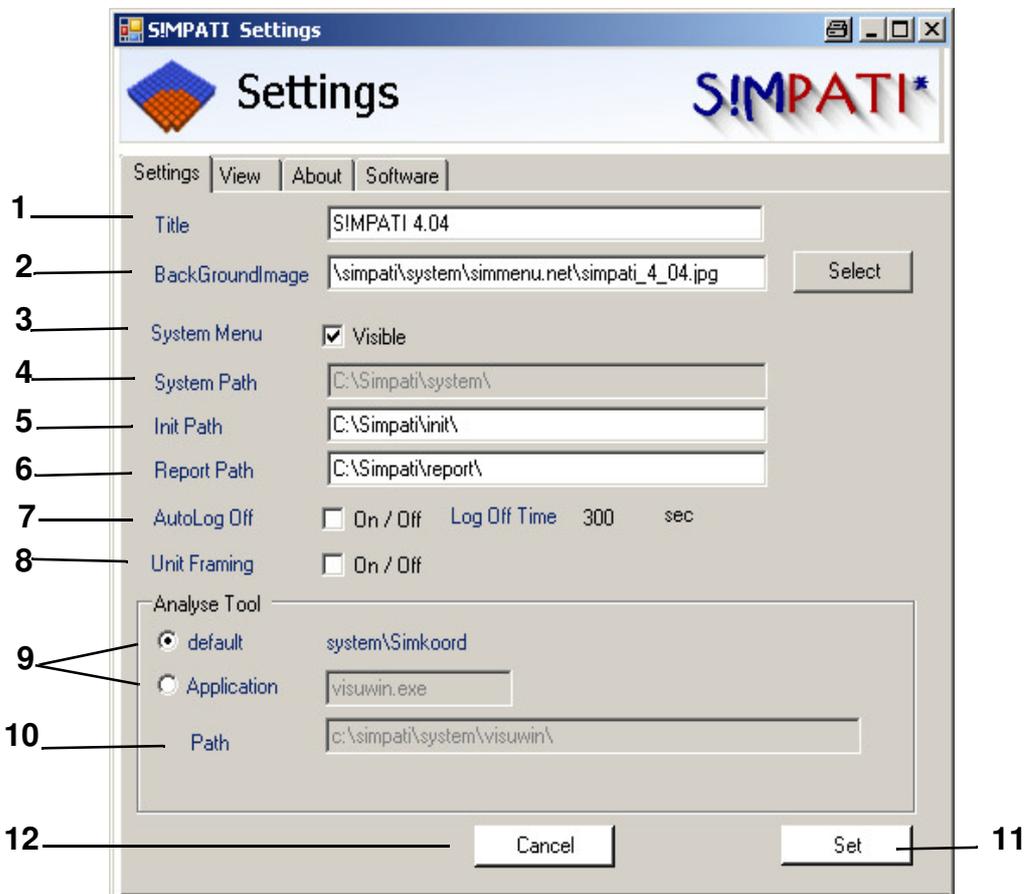
You can move the chamber symbols either manually or position them via the menu »Configuration main menu« (Page 28). A description for this can be found under Pos. 1 to Pos. 4 Page 29.

Chamber symbol	Meaning
Light grey	Chamber is not configured / no communication / no licence
Grey	Chamber is ready for operation
Green	Normal operation, no problems
Yellow	Warning signal
Red	Alarm signal
<b>M</b>	Test running in manual mode
<b>A</b>	Test running in automatic / program mode
<b>P</b>	Test program paused
<b>B</b>	Busy (status display), e.g. download or upload
<b>D</b>	SIMPATI is used only for data acquisition purposes
<b>W</b>	WAIT for Start mode
 or *	Archiving is activated
	Disable symbol Chamber operation has been disabled in SIMPATI by the logged-in user.
	Remote disable symbol Chamber operation has been disabled by a client (via Web software) <sup>1)</sup> . Positioning the mouse over the symbol displays the user name and IP address of the PC from which the chamber was disabled
	Locally disabled Tool tip and chamber information display name of the disabler
	Chamber disabled by Scheduler (chamber cannot be operated in this period of time) Tool tip and chamber information display name of the disabler
	The chamber is in internal operation mode.

## 5.2 Configuration of the main menu

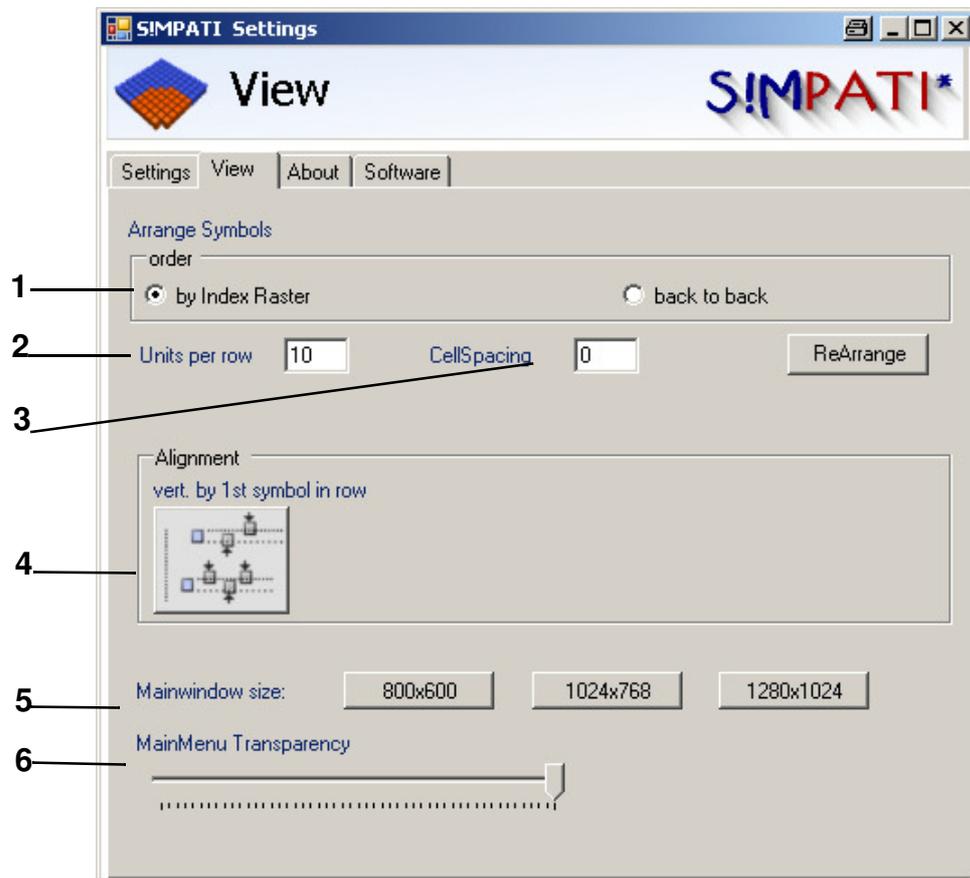


With the aid of this symbol in the toolbox/context menu you can implement the following settings for the main menu → Fig. SIMPATI main menu Pos. 5 Page 25.



Configuration main menu

- 1 This is displayed as the title in the main menu
- 2 Here you can select a background image for the main menu
- 3 This displays or hides the toolbox
- 4 Here you can select a background image for the main menu
- 5 This shows the directory in which the configuration files of the chamber are saved
- 6 This shows the directory in which the daily reports are saved
- 7 The user will be logged off automatically after this time if no input is received.
- 8 The chamber symbols are framed.
- 9 The graphical evaluation can be opened in standard mode or with Visuwin.exe
- 10 Path with Visuwin
- 11 Save the settings
- 12 The menu is closed.



*Configuration of main menu "View"*

- 1 The number of chamber symbols *Pos. 1* are arranged in the grid stored at the factory.
- 2 The number of chamber symbols to be displayed in a row.
- 3 The distance between the rows of chamber symbols



**NOTE**

Look at the preview and do not exit this menu until all of the chamber symbols have been rearranged.

- 4 Preview of the chamber symbol arrangement
- 5 The size of the main menu is configurable
- 6 The transparency in the main menu is configurable

### 5.3 Chamber representation in table form in the main menu



Use this symbol in the toolbox/in the context menu to reach the tabular chamber representation.

 S!MPATI 4.04

Idx	Unit	V...	Program	Archive	▼ State	T...	Device
01	Klimaschrank	0.00			01	33333	com1 /
02	Schockschrank	0.00			01	33333	com1 /
03	Ofen	0.00			01	33333	com1 /

1                      2

- 1 The table can be configured to be larger with the "+" key and smaller with the "-" key.
- 2 The table can be sorted according to any desired table sheet and the table sheet can be adjusted to be larger or smaller depending on the contents

### 5.4 Logging S!MPATI users on or off



The S!MPATI user is logged off via this symbol in the toolbox/in the context menu.  
→ [Fig. S!MPATI main menu Pos. 1 Page 25](#).

S!MPATI continues to run.

The user will have to log back on again. → [Password \(Page 22\)](#)

This function offers protection against unauthorised access.

## 5.5 User administration



This symbol in the toolbox can be used to access the user administration.

→ [Fig. SIMPATI main menu Pos. 3 Page 25](#)

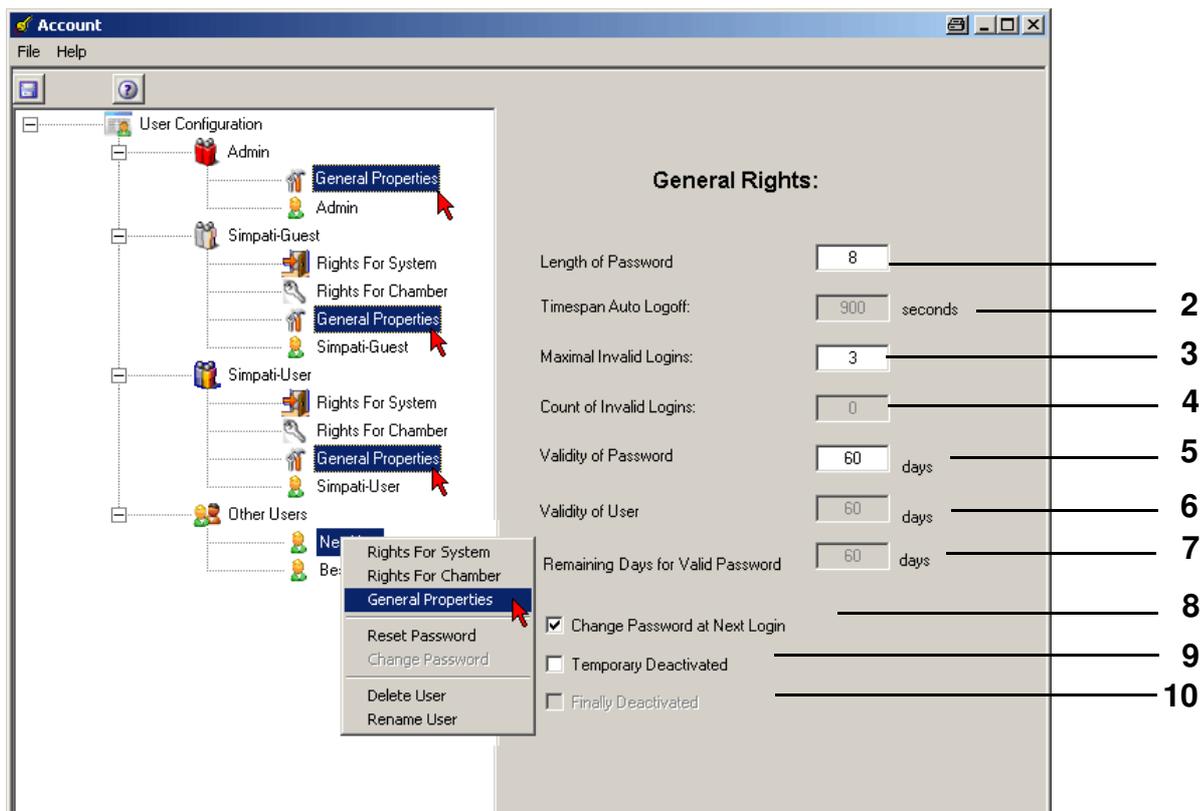


### NOTE

*The passwords in SIMPATI are administered independently from the access rights on the PC, i.e. the SIMPATI administrator does not automatically have the rights of a PC administrator.*

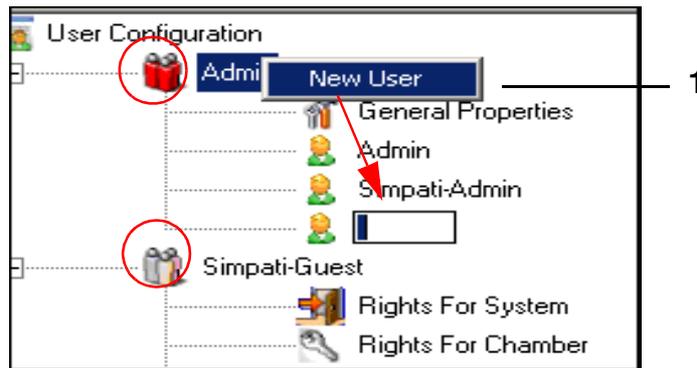
### General remarks

- The administrator does not see passwords; he is allowed to reset passwords or assign new ones but cannot change existing passwords.
- The administrator is allowed to disable/enable users.
- The password and the user name must be different.
- The logged-on user can be seen in the header of the SIMPATI main menu.
- Logins/logouts are documented in the report file.
- Only one user at a time can be logged on.
- To start with, the system needs to be configured. This is done by running the application MakeXML.exe once. This program can be found in the directory ..\simpati\system. This will ensure that the user administration (created users and passwords) is only valid on this PC, as a direct connection to the registry is created. A file called "XMLDefaultCrypt.xml" is created. If the function »21 CFR Part 11« is active, a file called "NonValidPasswordsCrypt.xml" is also created. We recommend asking the system administrator to make backup copies of these files, as they can be used to restore the user administration to its original status.
- The administrator assigns system and chamber-specific rights to the individual users; the administrator can change these rights at any time.
- Individual users can be managed and grouped in various user groups (administrators, users and guests). It is also possible to define users independently of groups.
- Passwords expire after 60 days (40 days for guests, but this can be increased to up to 999 days by the administrator) and must be renewed. You will be prompted to do this automatically when you log on. Once a password has been used it cannot be reused. Used passwords are stored in an encrypted file which cannot be viewed.
- Please refer to the description → [SIMPATI program start \(Page 22\)](#)

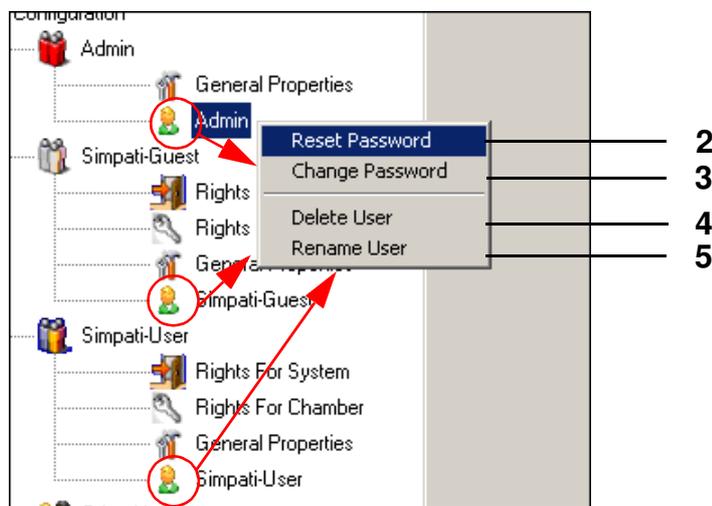


*User management – general rights*

- 1 This function is only active if the function »21 CFR Part 11« is active: Restriction of password length; passwords can be 8 to 15 characters long.
- 2 Automatic logout if there is no access during this time; the time can be set between 30 and 999 seconds. When the »21 CFR Part 11« function is active, the time will have been set at the factory to 5 minutes and cannot be changed.
- 3 Max. acceptable number of logon attempts, max. entry 10
- 4 Counter for unsuccessful logon attempts
- 5 Total validity period of the password; maximum input: 999 days  
After this time has elapsed, the user is prompted to enter a new password.
- 6 Function temporarily deactivated (max. length of validity of the user)
- 7 Counter for the remaining validity of the password
- 8 The user will be prompted to change the password the next time he logs on
- 8 Temporary deactivation of the user
- 9 Permanent deactivation of the user



1 You can create a new user via the context menu for the user group.



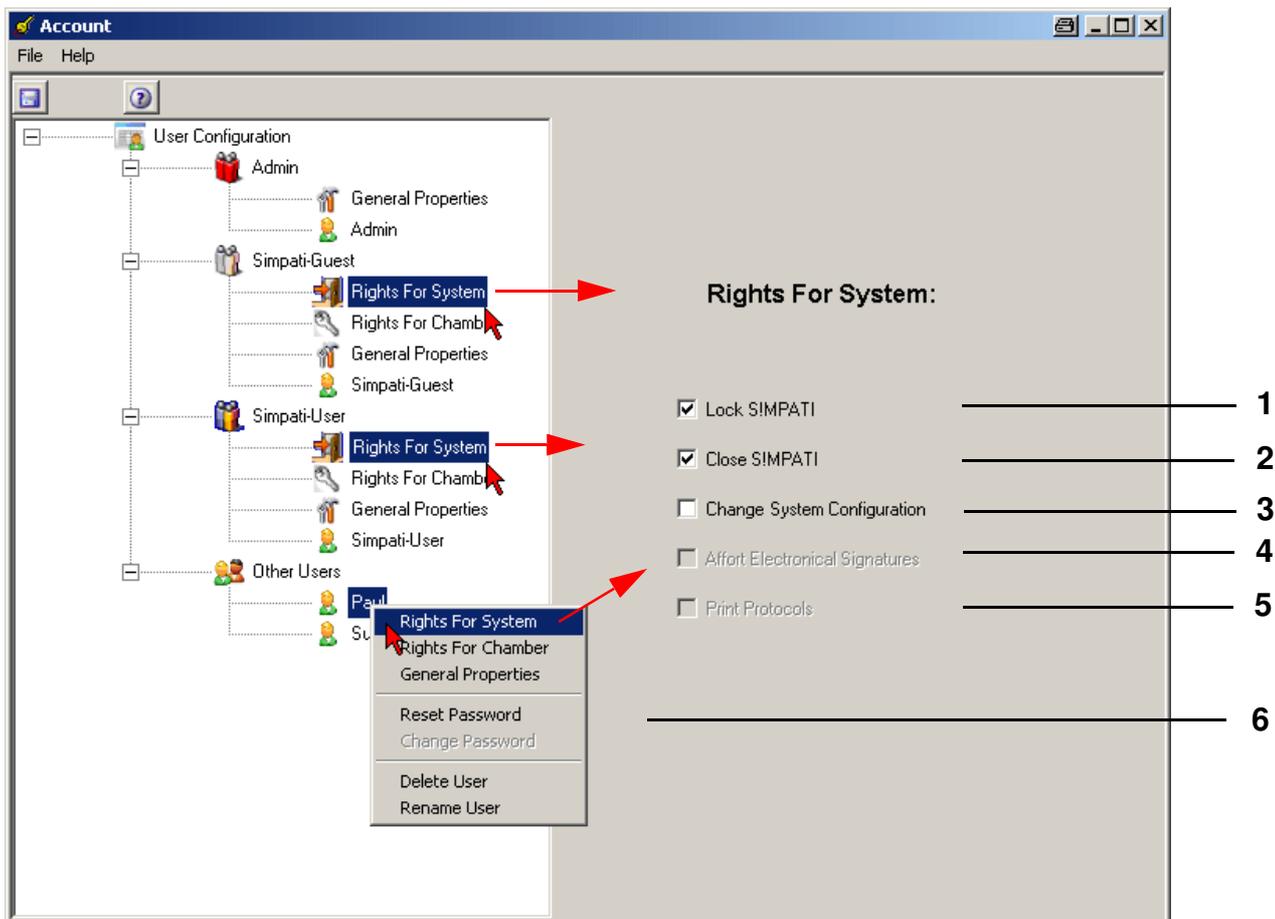
The context menu takes you to the following functions:

- 2 Reset password to factory setting; after this function has been used, you must confirm the new password at the next start-up.
- 3 Change password → [Fig. Password, Page 22](#) (deactivated)
- 4 Delete user
- 5 Rename user



**NOTE**

*A user name can never be assigned a second time.*



*User management - rights in SIMPATI*

### Authorisations and access rights in SIMPATI

- 1 Locks the SIMPATI interface; password entry is necessary for the next access.
- 2 Closes SIMPATI
- 3 Changes the SIMPATI system configuration → [5.2 \(Page 28\)](#)
- 4 Function temporarily deactivated (electronic signature authorised (optional))
- 5 Function temporarily deactivated (print logs (e.g. programs, messages, data recordings))

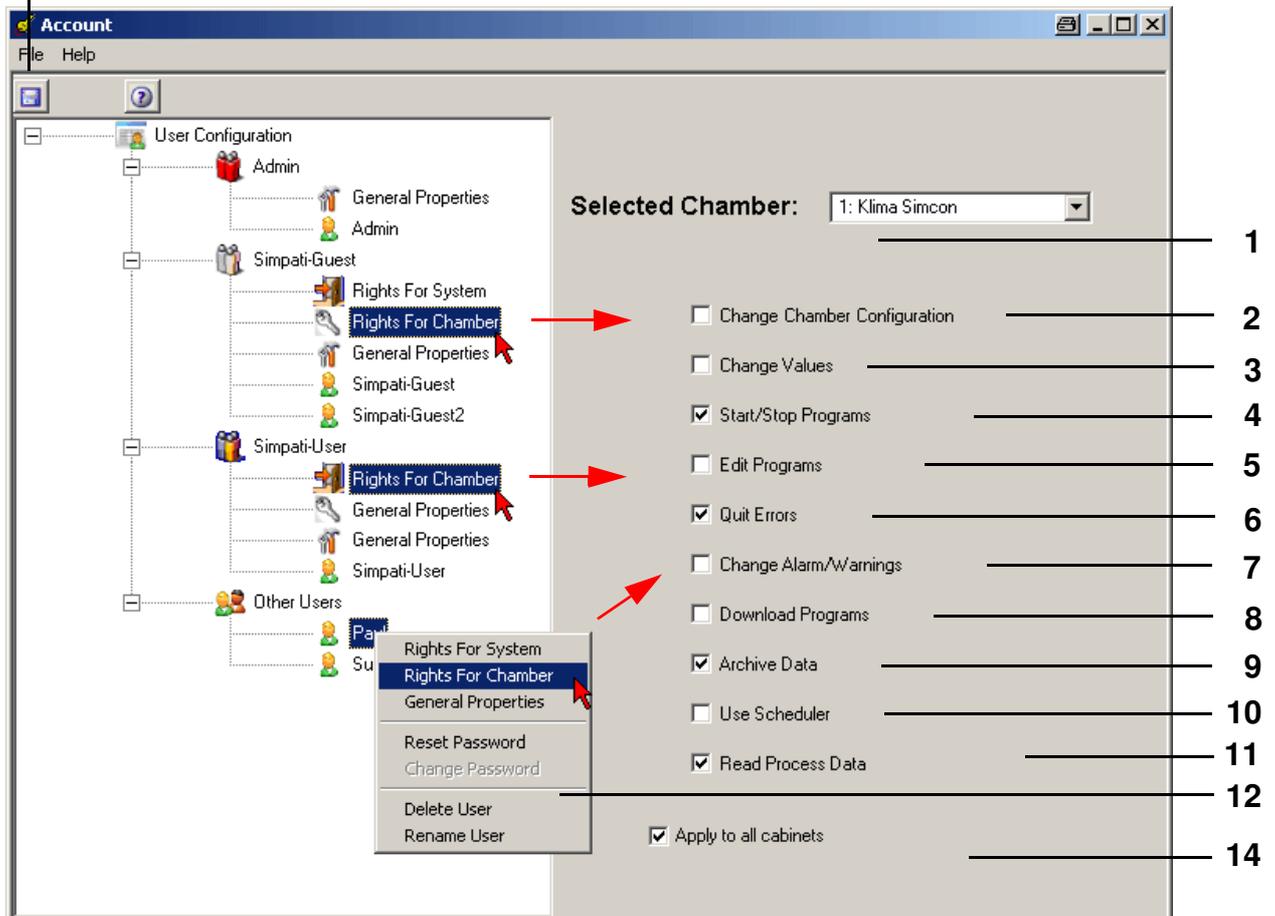


**NOTE**

*These rights for levels 1 and 2 are assigned to the user groups.  
 Specific assignment for a user → [Pos. 6](#)*

- 6 The rights are assigned specifically for this user; the menu is therefore called up via the context menu of the required user.

13



User management – rights for the chamber

- 1 Select chamber
- 2 Change chamber configuration → 6.1 (Page 37)
- 3 Change setpoints, control variables, digital channels
- 4 Start/stop a test program
- 5 Operate program editors
- 6 Confirm fault messages
- 7 Change alarm and warning limits
- 8 Upload test programs from the PC to the chamber controller → 10 (Page 113)
- 9 Activate archiving
- 10 Use planner → 12 (Page 117)
- 11 Read the process data (data recordings)



**NOTE**

These rights for levels 1 and 2 are assigned to the user groups.  
Specific assignment for a user → Pos. 12

- 12 The rights are assigned specifically for this user; the menu is therefore called up via the context menu of the required user.
- 13 This configuration can be saved on this PC. It cannot be transferred to other PCs because it has a PC-specific key.
- 14 You can assign the same rights for all chambers to the user.  
This setting must be reselected for every change (if import of all chambers is desired).

## 5.6 Version information



This symbol in the toolbox will take you to the information window which displays:

→ [Fig. SIMPATI main menu Pos. 2 Page 25](#)

- SIMPATI version number
- Acquired licences of total possible licences
- Serial number
- Registration code

## 5.7 Exit S!mpati



Use this symbol in the toolbox/in the context menu to exit S!MPATI.

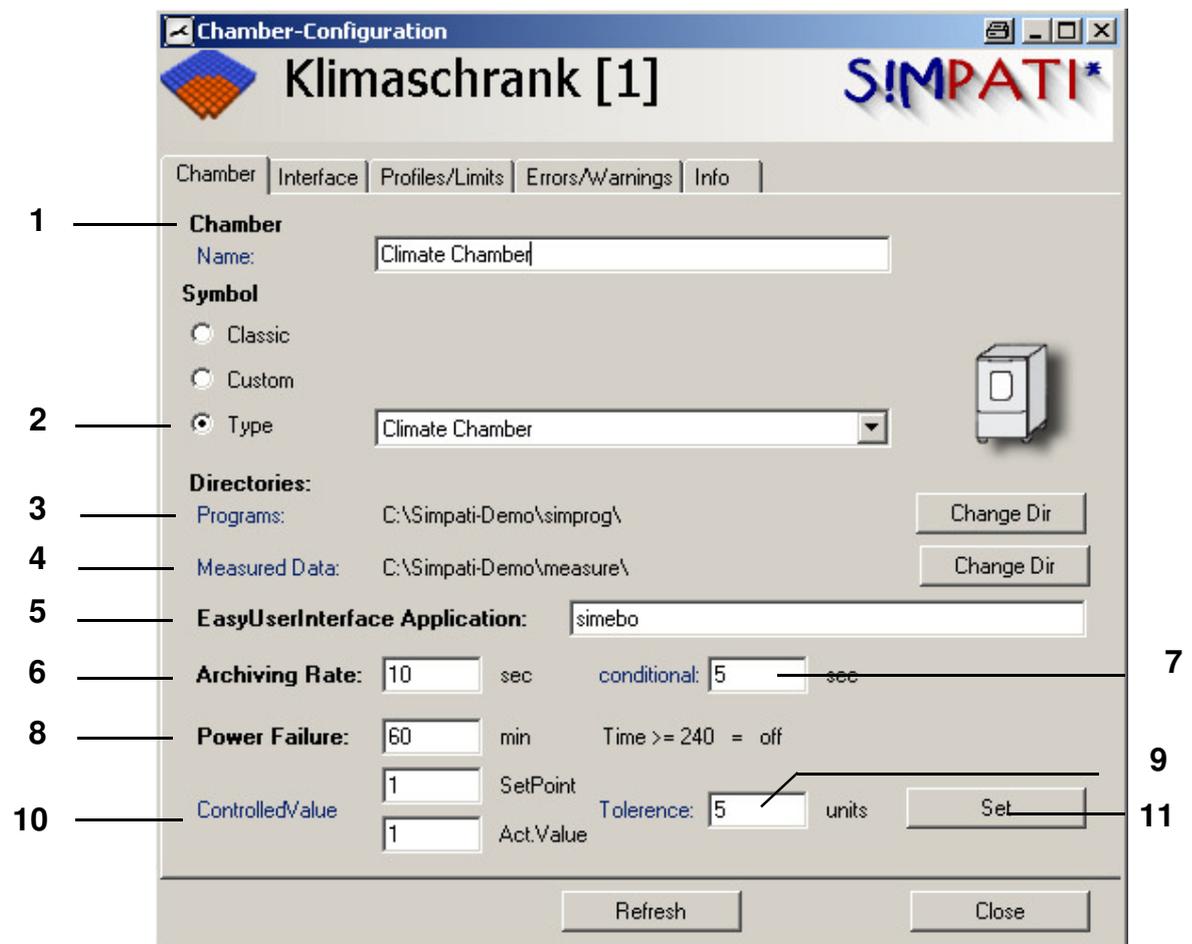
→ [Fig. SIMPATI main menu Pos. 6 Page 25](#)

## 6 Chamber settings in SIMPATI

### 6.1 Defining general chamber specifications

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 18 Page 25



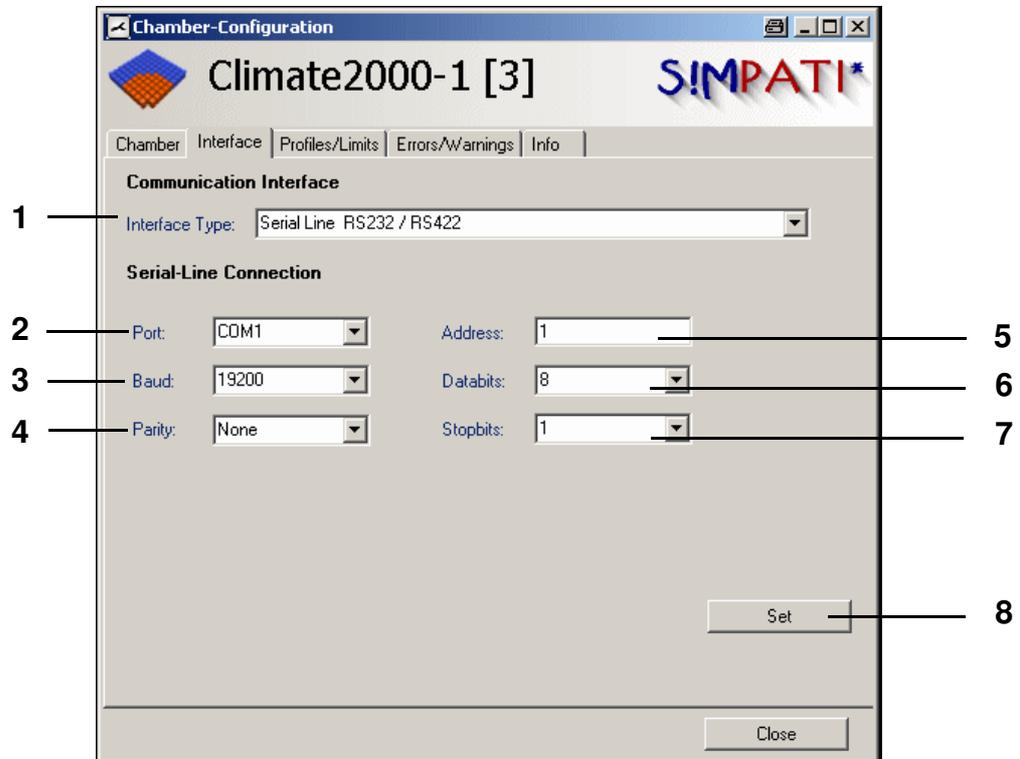
Chamber configuration in SIMPATI

- 1 Chamber name, appears in the main menu
- 2 The chamber is displayed in the main menu with the symbol saved for this chamber type – either the classic symbol or a user-defined symbol. The chamber type should correspond to your chamber in order to ensure that all menus of this chamber can be activated accordingly.
- 3 This shows the directory in which the test programs for this chamber are saved.
- 4 This shows the directory in which the measured data for this chamber are saved.
- 5 If you prefer to work with the single user interface then the application entered here will open. For the new single user interface enter "simebo" in this field, for the existing single user interface enter "simhand1". When making your selection, please take into account the information in Chapter 8 (Page 45). For a description of the single user interfaces refer to → 8.1 The new single user interface (simebo.exe) (Page 46) and → 8.2 The previous user interface (Simhand1.exe) (Page 52).

- 6** Time between two entries during recording.  
Since the archiving module in the standard version operates with a 5 second rhythm, only values of 5 sec or a multiple of 5 sec make sense.  
Shorter archiving cycles are only possible with the option "Fast archiving".
- 7** Time between two entries for archiving after a power failure in the standard version is 5 sec or a multiple of 5 sec.
- 8** Maximum tolerated power failure time (if 240 min is entered, then the system will accept any power failure time); if the power failure does not exceed this time then the test is continued, provided the control variable *Pos. 10* is also within the tolerance. The computer will need to be restarted to continue archiving.
- 9** After a power failure, the actual value for the control variable *Pos. 10* must not deviate from the setpoint by more than the number of units indicated here, otherwise the test will be stopped. In order to continue the test, the power failure time *Pos. 8* must also be within the tolerance.
- 10** Control variable (here 1=temperature), the actual value of which must not deviate by more than this value from the setpoint if the test is to be continued after a power failure.
- 11** Save the settings

## 6.2 Setting up the interface between the chamber and SIMPATI

You can access the menu via the context menu of the chamber.  
→ Fig. SIMPATI main menu Pos. 18 Page 25



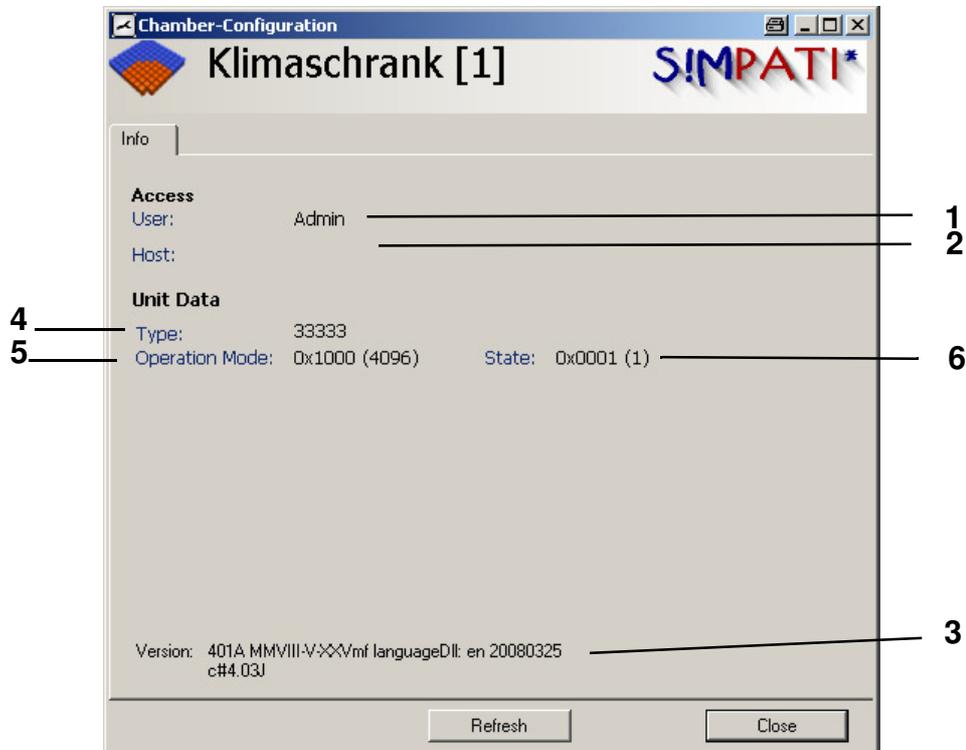
Chamber configuration: interfaces

- 1 Selecting the interface type between chamber/PC
- 2 PC interface
- 3 Transmission rate
- 4 Parity
- 5 Address of the chamber
- 6 Data bits
- 7 Stop bits
- 8 Save the settings

## 6.3 Displaying chamber information

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 20 Page 25



Chamber information

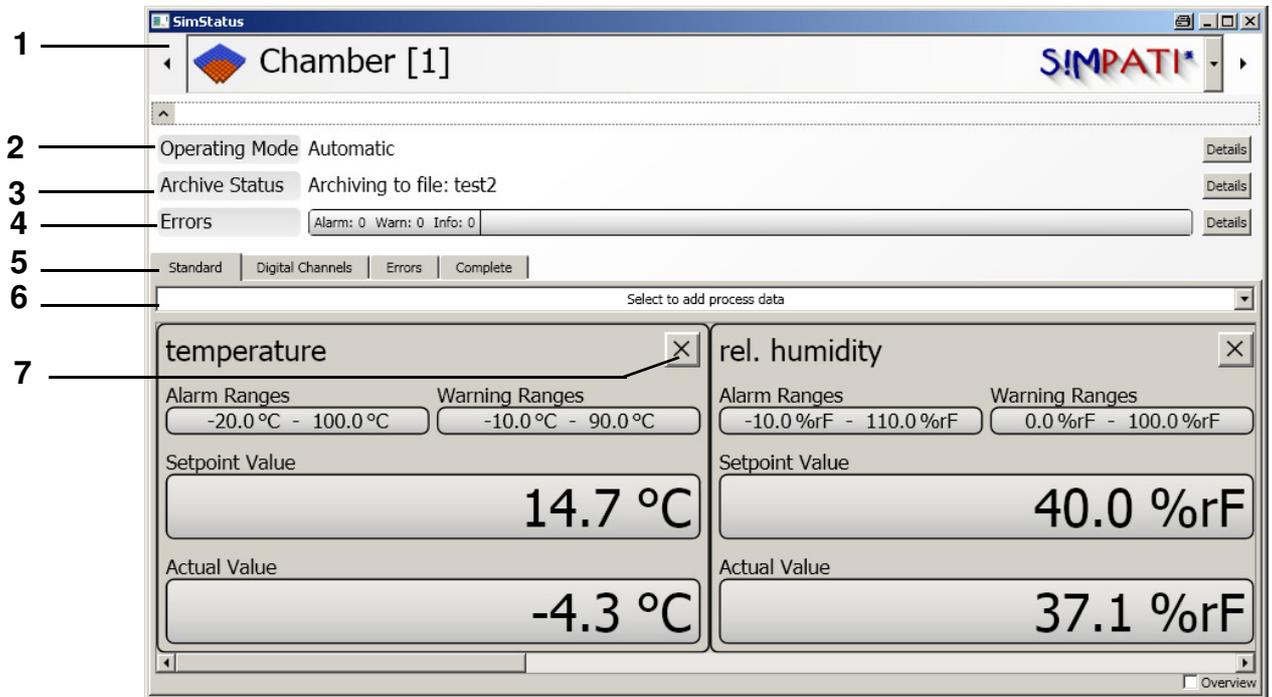
- 1 Logged-on user
- 2 Server from which the chamber is being operated; here, the chamber is being operated from the SIMPATI PC.
- 3 Version number, SIMPATI language setting
- 4 Information for service personnel
- 5 Information for service personnel
- 6 Information for service personnel

## 7 Status display for the chamber status

You can access the menu via the context menu of the chamber.

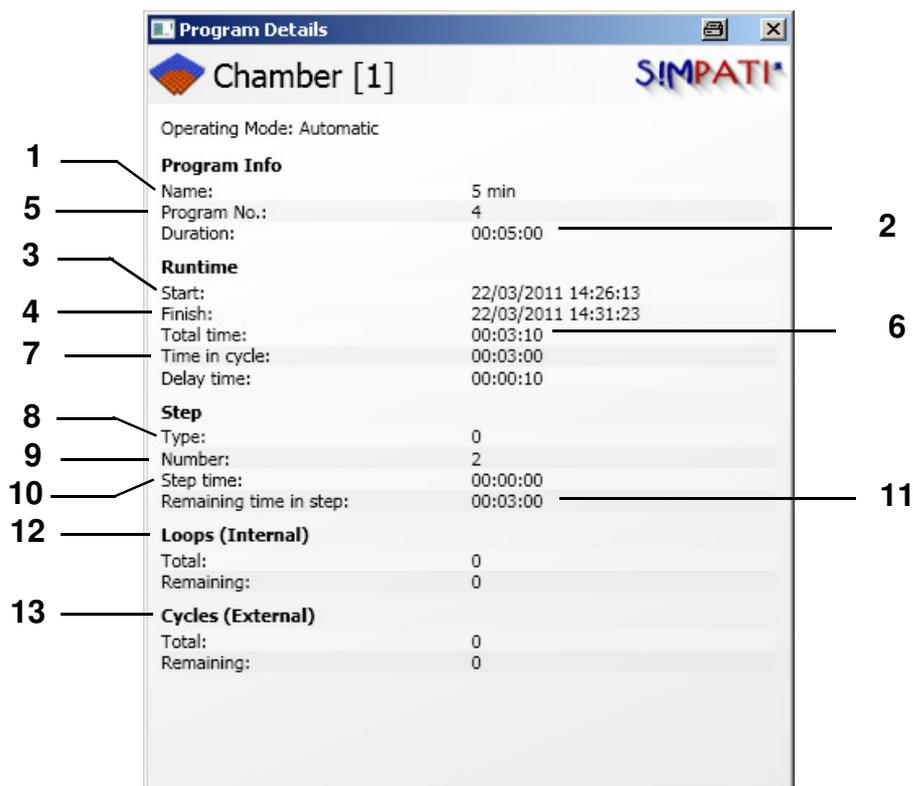
→ Fig. SIMPATI main menu Pos. 8 Page 25

The menu window is used to display the actual condition of the chamber.



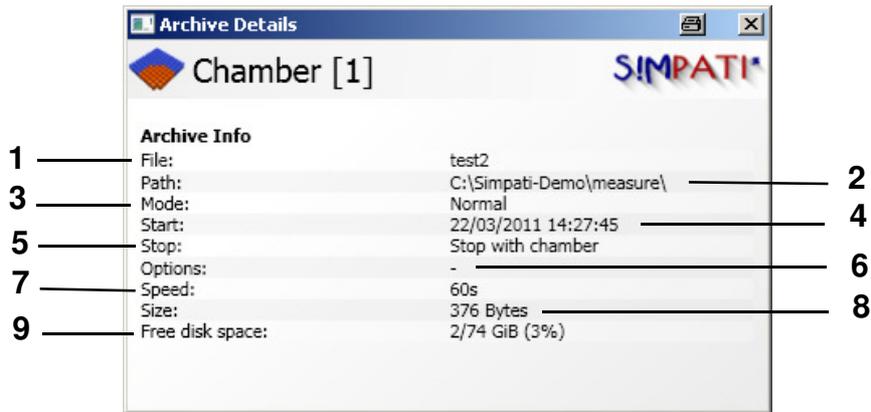
Status display for the chamber status

- 1 Chamber selection
- 2 **Operating mode**  
In automatic/program mode you can access a menu window containing information about the test program → Page 42.
- 3 **Archiving**  
If the test is to be recorded, then a menu window with archiving information will be available → Page 43
- 4 Display warning messages/alarm messages/fault messages
- 5 Select the display for control variables, set values, digital channels and limits
- 6 Select the displayed process data
- 7 Close window



*Information window for automatic/program mode*

- 1 Test program name
- 2 Total runtime of test program
- 3 Start time of test program
- 4 End time of test program
- 5 Test program number in the chamber controller
- 6 Previous runtime
- 7 Runtime of the current cycle
- 8 Program step type
- 9 Current program step (CTC controller)
- 10 Runtime of the current step
- 11 Remaining runtime of the current step
- 12 Display of the loops in the program
- 13 Display of the complete program repetitions (as selected at the start of the program)



*Window with archiving information in automatic/program mode*

- 1 Archive name
- 2 This shows the directory in which the measurement file will be stored
- 3 Recordings will be made at the archiving cycle defined for the event of a malfunction  
→ [Fig. Archiving Pos. 5 Page 133](#)
- 4 Start of recording
- 5 End of recording (coincides here with the end of the test program)
- 6 Options, e.g. daily name change
- 7 Memory cycle
- 8 Size of the archive file
- 9 Free hard drive storage space



## 8 Tests in manual mode via the Single user interfaces

You can access the menu for the single user interface via the context menu of the chamber.

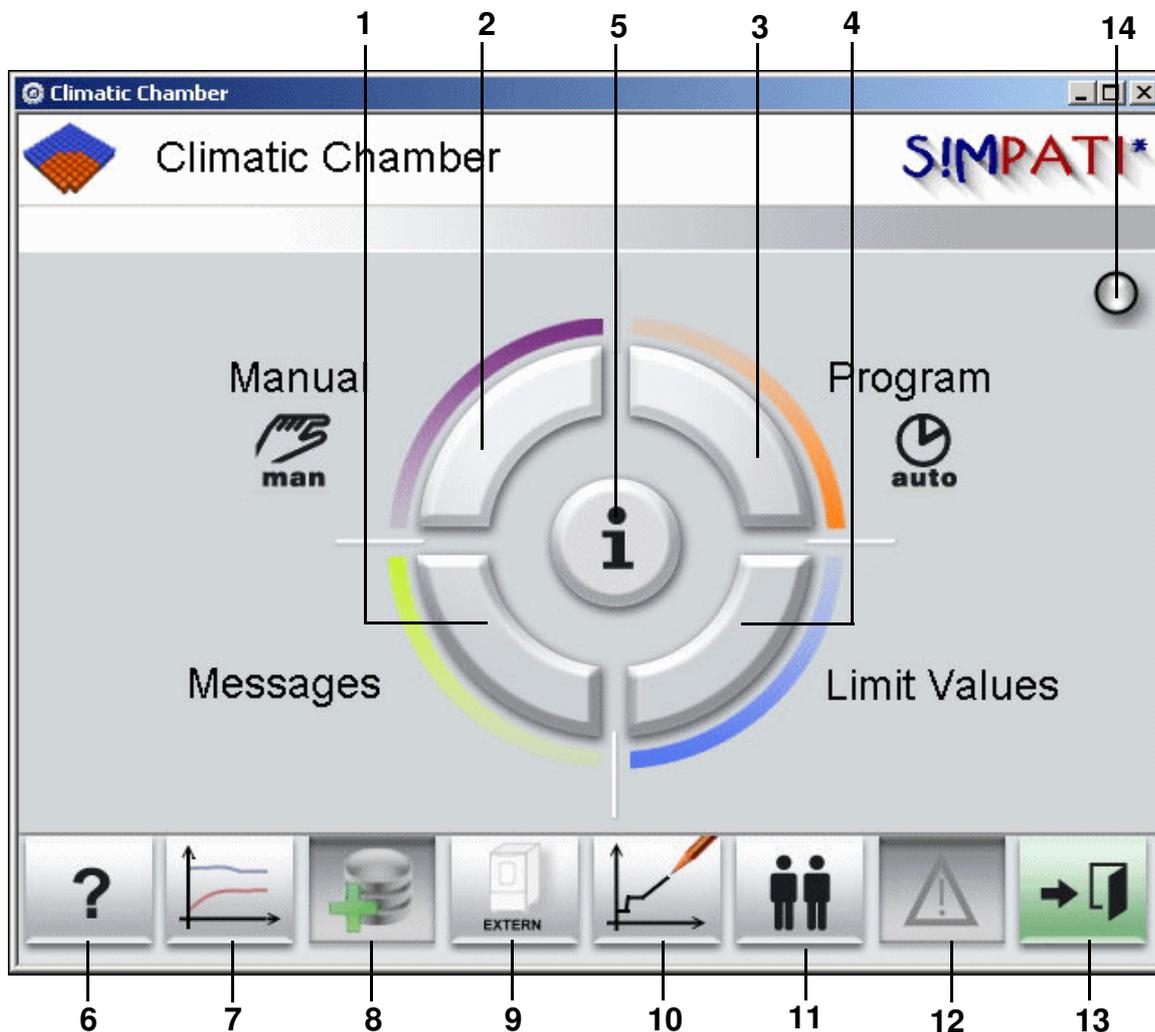
→ *Fig. Chamber configuration in SIMPATI Pos. 5 Page 37*

In addition, you can continue to use the single user interface of the previous SIMPATI version or the new user interface. You can adjust which single user interface should open for each chamber via the menu window 37.

We recommend the single user interface »simhand1« for chambers with more than 2 control variables, shock chambers and the data logger.

## The new single user interface (simebo.exe)

## 8.1 The new single user interface (simebo.exe)



Main menu of the single user interface (simebo.exe)

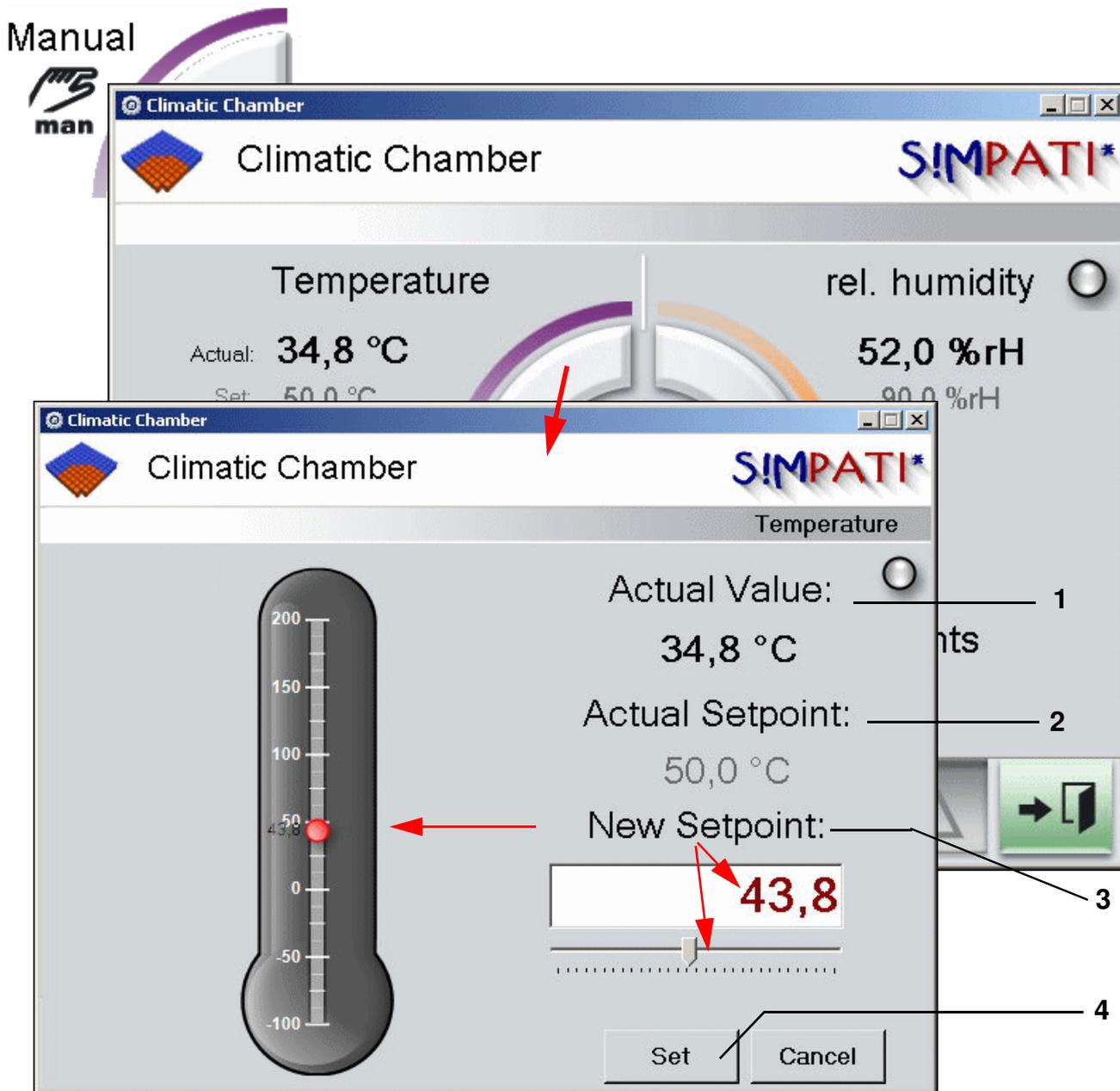
- 1 Report from the chamber, description → [13.1 Chamber reports \(Simreport\) \(page 120\)](#)
- 2 **Menu for manual mode** → [8.1.1 \(page 48\)](#)  
If the chamber has more than 2 control variables, then the menu window for chamber configuration will open automatically; you can also enter setpoints here. Description → [8.1.3 Setting warning/alarm limits and setpoints for the manual mode \(page 50\)](#)
- 3 Start/stop test program in Automatic mode  
→ [11 Start/stop a test program \(page 113\)](#)
- 4 Inputting warn/alarm limits  
→ [8.1.3 Setting warning/alarm limits and setpoints for the manual mode \(page 50\)](#)
- 5 Status display → [7 Status display for the chamber status: information about archiving \(page 41\)](#)
- 6 Link to the help function
- 7 Display graphical recording of a test → [13.2 Graphical evaluation \(page 123\)](#)

- 8** Making settings for recording the test sequence  
→ [13 Archiving, recording and evaluating a test \(page 119\)](#)
- 9** EXTERNAL: the chamber can be operated by SIMPATI  
INTERNAL: operation takes place at the chamber, and no interventions are possible from SIMPATI.
- 10** Symbolic editor for program creation  
→ [9.2 Creating a test program with the symbolic editor \(page 62\)](#)
- 11** For user administration → [5.5 User administration \(page 30\)](#)
- 12** Listing of warning/alarm/fault messages  
→ [14.1 Display list of warning/alarm/fault messages \(page 135\)](#)
- 13** Close menu window and return to previous window
- 14** Display: green: test running without problems; red:: fault/alarm message

The new single user interface (simebo.exe)

8.1.1 Entering setpoints for manual mode (with a maximum of 2 control variables)

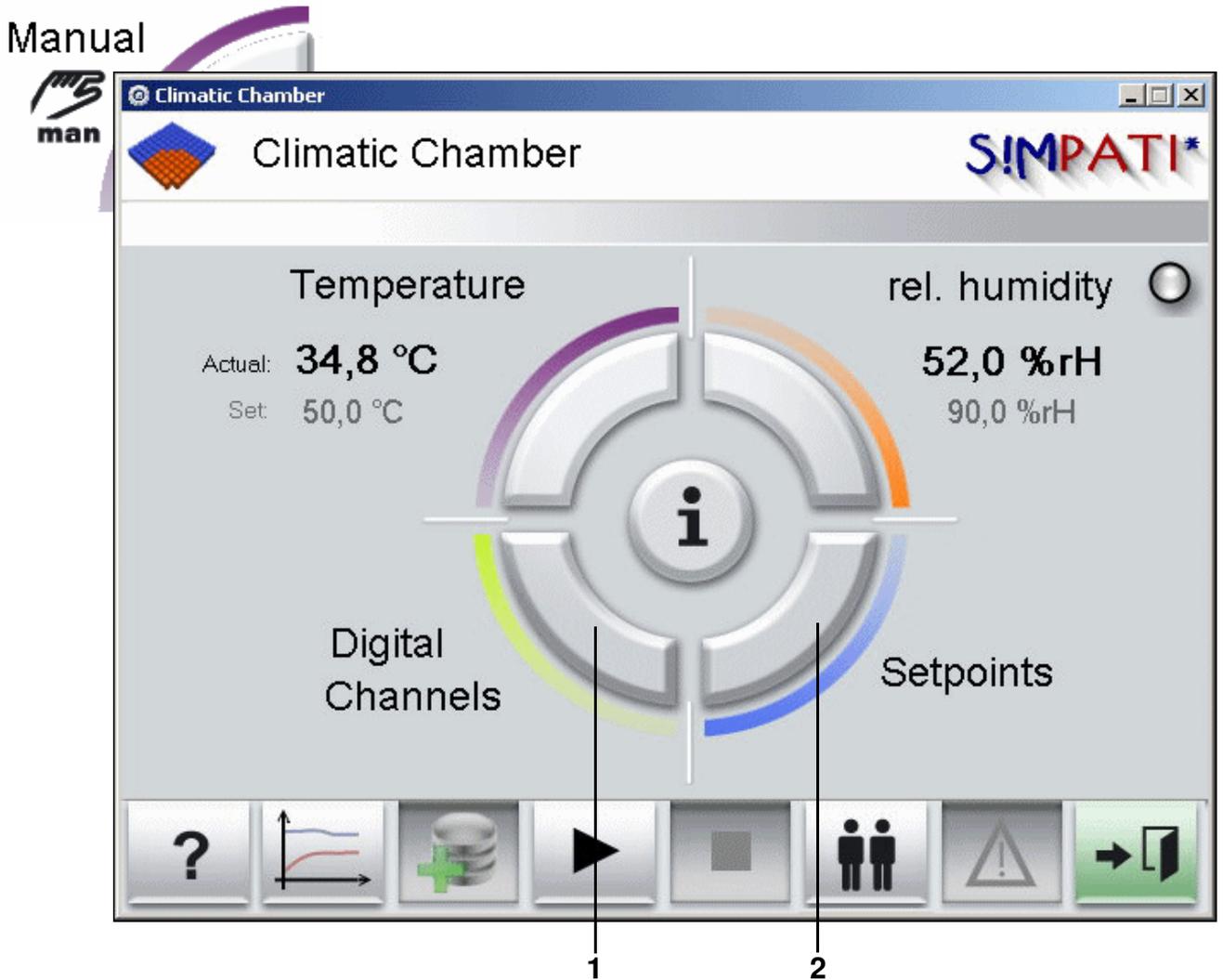
This menu will not open if the chamber has more than 2 control variables. Instead, the menu window for chamber configuration will open automatically; you can also enter setpoints here.  
Description → 8.1.3 (page 50)



Manual mode with 2 control variables here: setpoint input for temperature

- 1 Current value
- 2 Current setpoint
- 3 Enter/select a new setpoint and save:
- 4 Save the settings

8.1.2 Adjusting digital channels and setpoints for manual mode



Manual mode  
Digital channels and setpoints

- 1 Switch digital channels on/off  
The menu for the chamber configuration opens. Description → [8.1.3 \(page 50\)](#)
- 2 Input setpoints  
The menu for the chamber configuration opens. Description → [8.1.3 \(page 50\)](#)

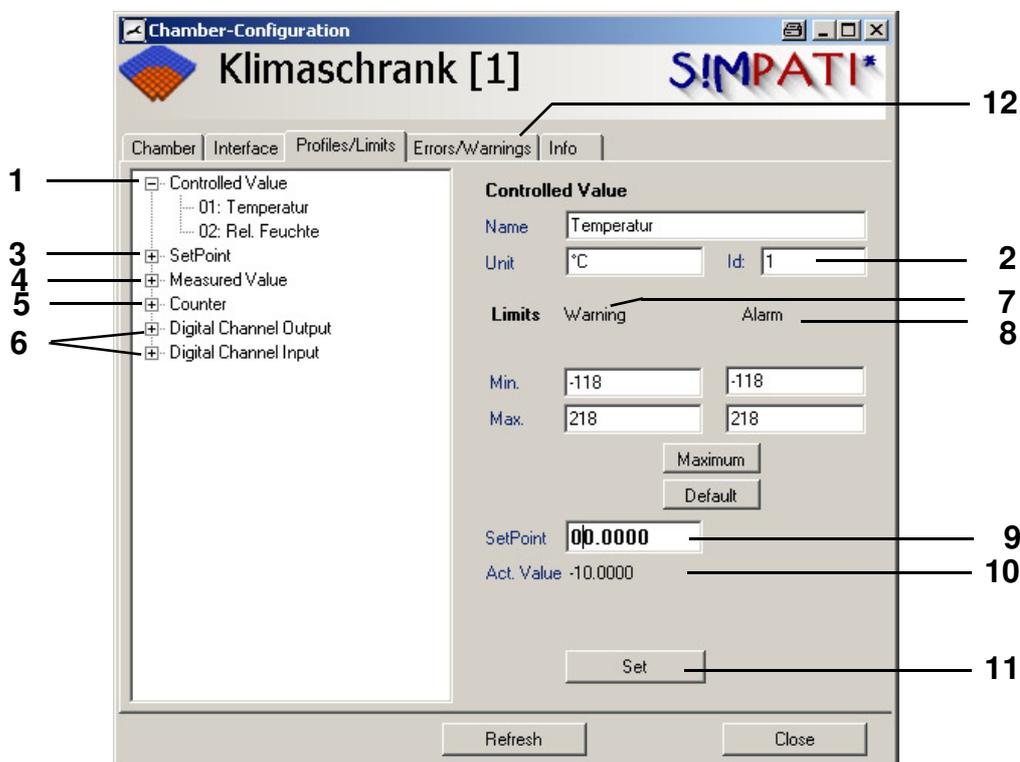
## The new single user interface (simebo.exe)

### 8.1.3 Setting warning/alarm limits and setpoints for the manual mode

You can access the menu via the context menu of the chamber.

→ [Fig. SIMPATI main menu Item. 16 page 25](#)

If the chamber has more than 2 control variables, this menu is automatically made available in order to carry out tests in manual mode. (For 2 control variables the menu opens → [page 48](#))

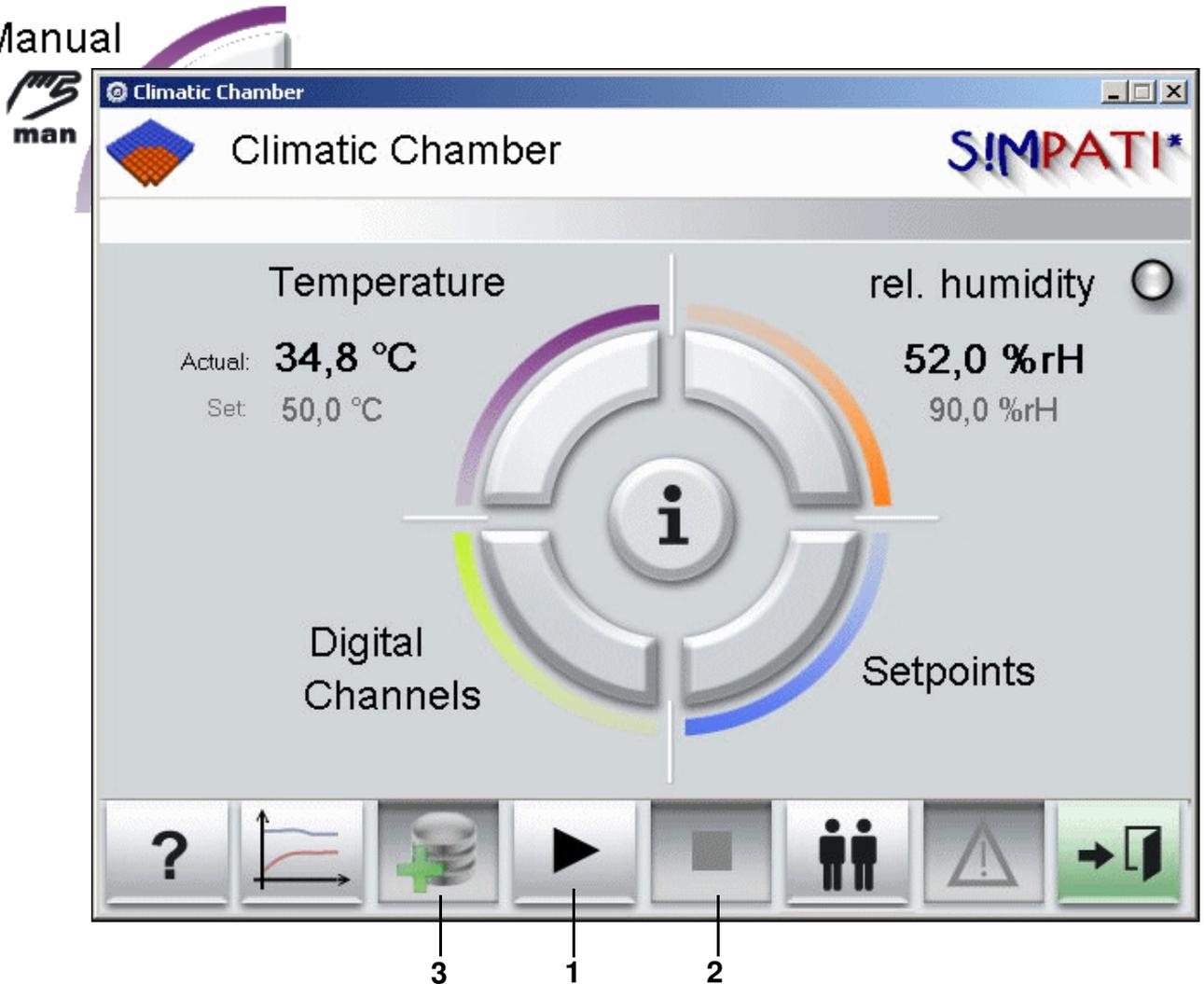


*Entering setpoints and limits*

- 1 Control variables of the chamber
- 2 Control variable number
- 3 Control values of the chamber
- 4 Measurement values
- 5 Counters for this chamber
- 6 Digital outputs (digital inputs - next item)  
To start the test, switch on the digital channel »Start«.
- 7 Enter the warning limits
- 8 Input alarm limits
- 9 Input setpoint
- 10 Current value
- 11 Save the settings
- 12 → [14.1 Displaying a list of warning messages/alarm messages/fault messages \(page 135\)](#)

8.1.4 Starting/stopping a test in manual mode

Manual



Starting/stopping a test in manual mode here: chamber with 2 control variables

- 1 Start the test  
You can recognise that archiving has started from the button [Pos. 3](#)
- 2 Stop the test
- 3 Open archiving dialogue

Archiving settings → [13 \(Page 133\)](#)

Starting the test on a chamber with more than 2 control variables

- Switch on the digital channel »Start« [Pos. 6 Page 50](#)

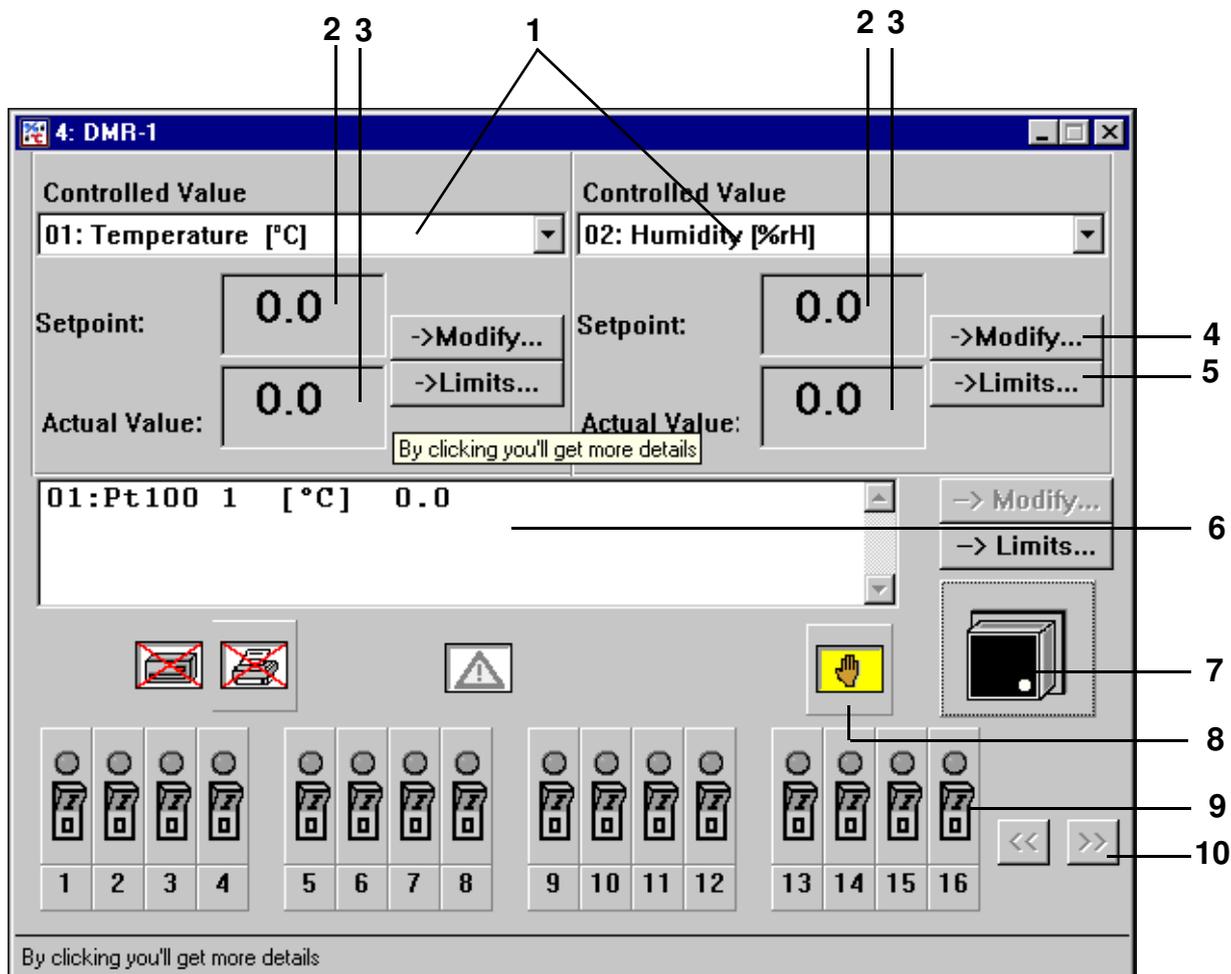


**CAUTION**

Before starting a test, make sure that the adjustable temperature limiter of the chamber is set to a suitable temperature for your test sample.

## The previous user interface (Simhand1.exe)

## 8.2 The previous user interface (Simhand1.exe)

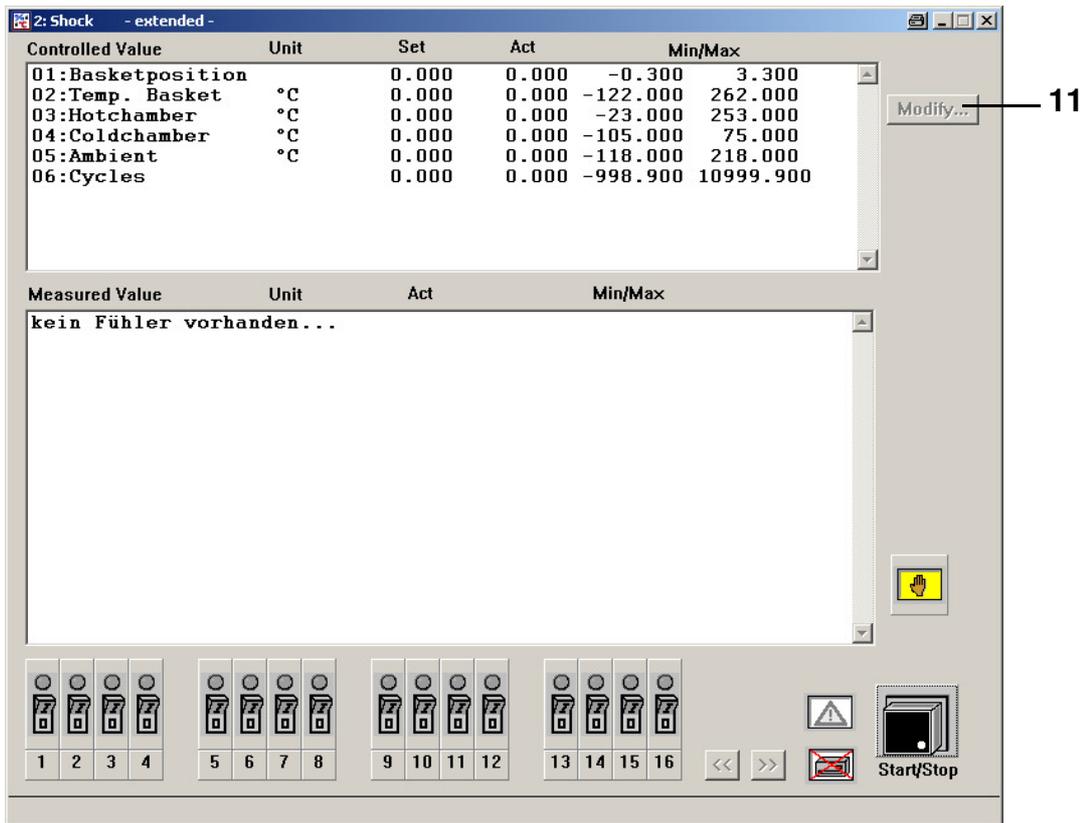


Main menu of the single user interface (simhand1.exe)

- 1 List box of the control variables
- 2 Setpoint display
- 3 Actual value display
- 4 Setpoint input → 54
- 5 Display of limit values for the control variable → *Adjusting limits with Simhand1.exe (Page 55)*
- 6 Measurement values
- 7 On / Off switch

- 8 Status display symbols (manual mode, automatic/program mode etc.)
- 9 Status of the digital channels
- 10 Scrollbar for digital channels

For chambers with more than 2 controller variables, a list box appears in the upper part of the menu window for selecting the control variables. The settings can be made by double-clicking on the desired control variable.

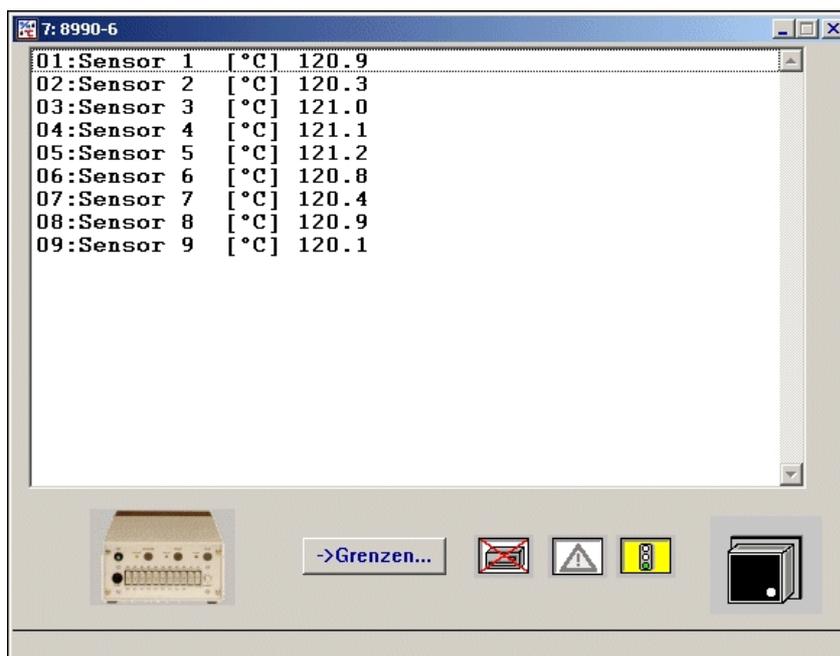


Single user interface for more than two control variables

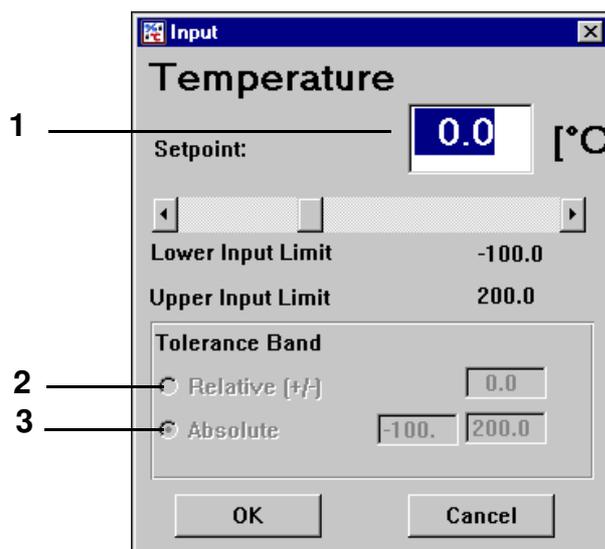
In manual mode, there are two list boxes in which the control variables are displayed. The corresponding target and actual values are displayed in the fields below.

11 Change setpoint

## The previous user interface (Simhand1.exe)

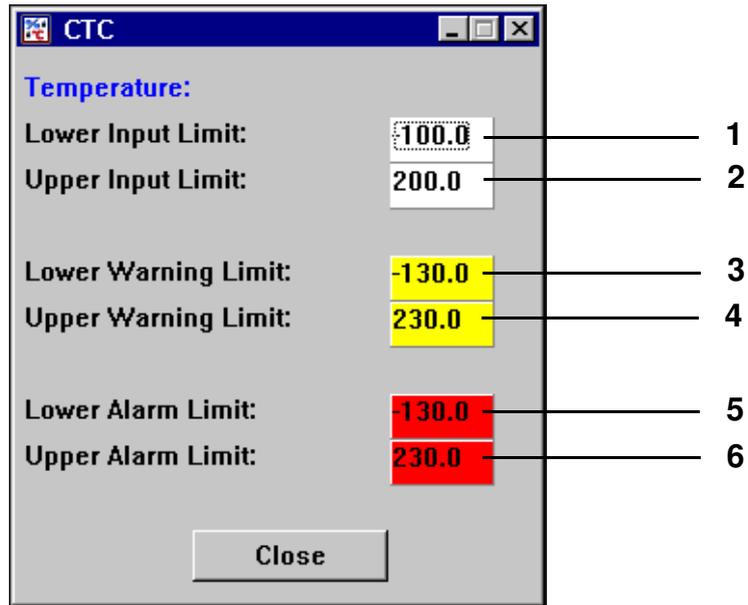


Example: Easy operating interface for a data logger



Setpoint input with Simhand1.exe

- 1 Setpoint input
- 2 Tolerance band relative, temperature change in %
- 3 Absolute tolerance band, fixed limits are set



Adjusting limits with Simhand1.exe

The limits can be taken from this display.

- 1 Lower input limit
- 2 Upper input limit
- 3 Lower warning limit
- 4 Upper warning limit  
If a chamber reaches one of the warning limits, a warning message is output.
- 5 Lower alarm limit
- 6 Upper alarm limit  
If the alarm limit is reached, the chamber is switched off if this functionality is available in the controller. These irregularities are saved in the report file.



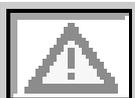
Note

For systems with more than two control variables, the menu opens as explained under item → 8.1.3 (Page 50).

The previous user interface (Simhand1.exe)



Status indicator: Humidity is switched on / off



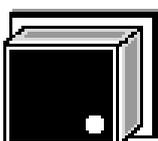
If there is an error, the symbol is displayed in colour.



Status indicator: Archiving is switched on/off



Zustandsanzeige: The operating mode (manual/automatic/program mode) is indicated by the symbol. → [Status indication with Simhand1.exe \(Page 57\)](#)



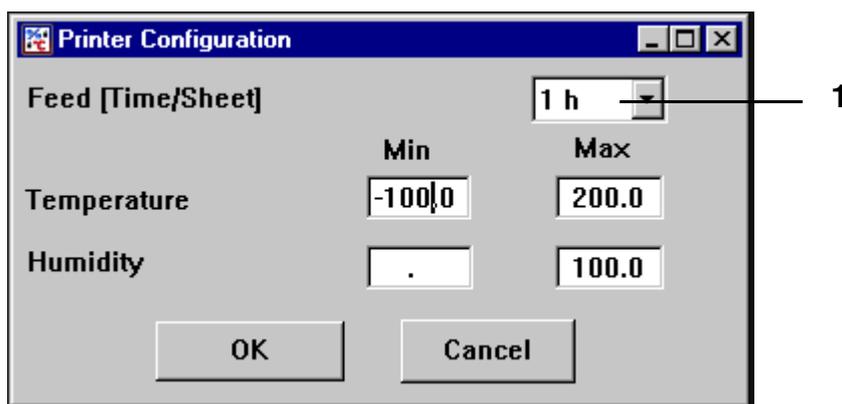
This symbol is used to switch the chamber on or off. The chamber is switched on when the symbol displays a green dot.



Printer on the chamber - switching on/off and configuration. This function is only active with a DMR controller. → [Printer configuration \(Page 56\)](#)

**Printer configuration**

Click once on the symbol to bring up the menu window for configuring the printer.

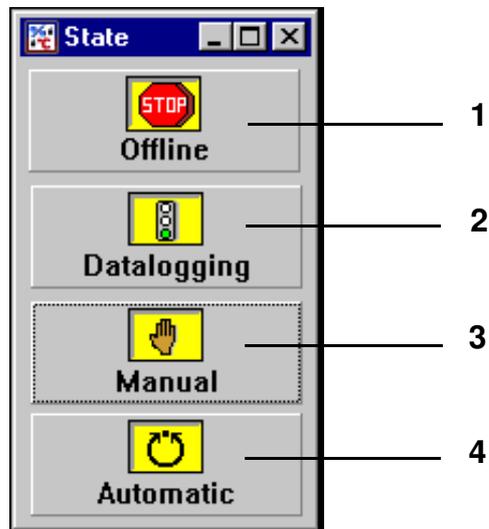


*Printer configuration with Simhand1.exe*

Recording takes place within the specified limits. The recording time window per page is defined in [Pos. 1 Page 56](#).

### Operating status

The operating status can only be changed when the chamber is switched off.



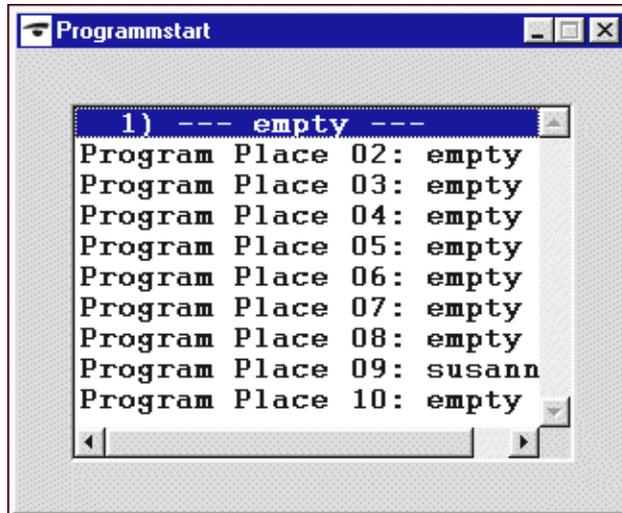
*Status indication with Simhand1.exe*

- 1 Communication with the chamber has been interrupted
- 2 Chamber data is transferred, the actual values are recorded.
- 3 Manual mode
- 4 Automatic/program mode

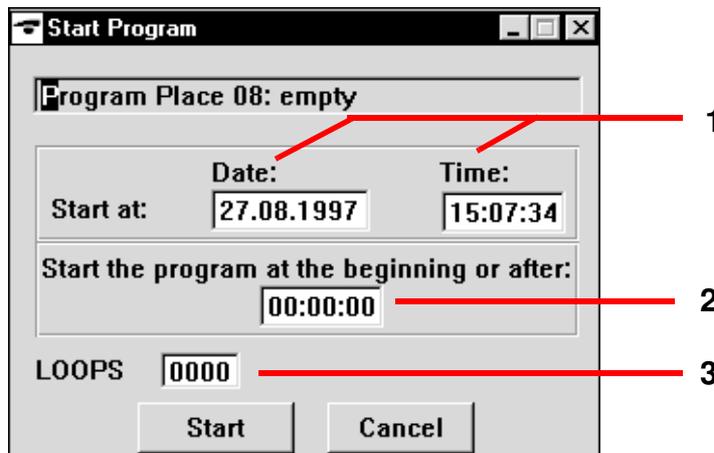
## The previous user interface (Simhand1.exe)

Following selection of automatic/program mode, click once on the on/off switch so that a test program can be selected.

This displays only the test programs which have previously been uploaded from the PC to the chamber controller → [10.1 Loading SIMPATI test programs into the chamber controller \(page 111\)](#).



Double clicking on the test program name opens the menu window in which the start data can be entered.

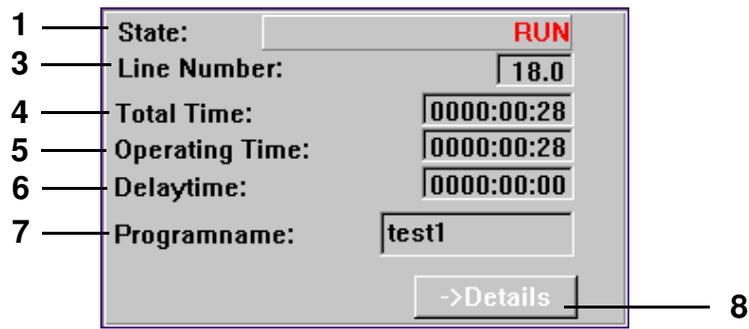


- 1 Start date and start time
- 2 Test program sequence/absolute time, or number of lines
- 3 Number of test program repeats

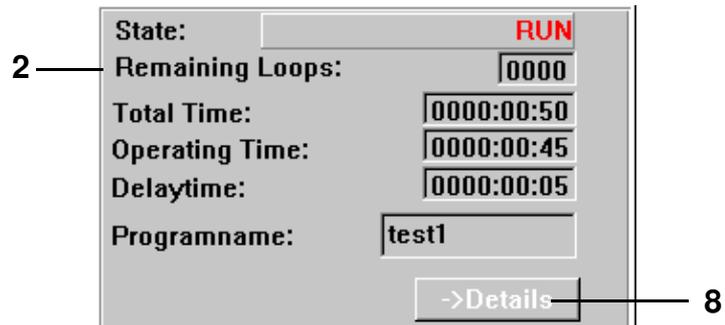
The data for this test program is imported into the menu (right upper corner)

→ [CTC, TC, MOPS controller Simhand1.exe \(page 60\)](#) or

→ [DMR controller Simhand1.exe \(page 60\)](#).



CTC, TC, MOPS controller, Simhand1.exe

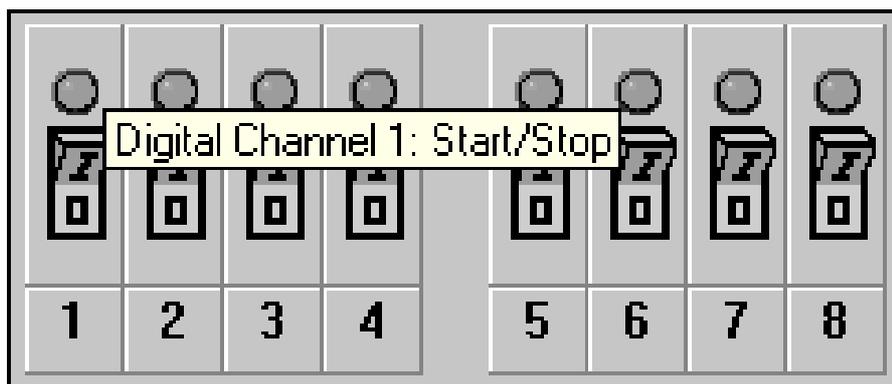


DMR controller, Simhand1.exe

- 1 Chamber status  
 WAIT FOR START: wait for start  
 OFF: chamber is switched off  
 ON: chamber is switched on  
 RUN: program is running
- 2 Remaining cycle count: (DMR controller), remaining test program repeats
- 3 Line Number: (CTC, TC, MOPS controller), line number
- 4 Total running time of test program following start
- 5 Test program running time
- 6 Pause time
- 7 Test program name
- 8 This function is not available on-site

**The previous user interface (Simhand1.exe)**

---



A digital channel can be switched on or off by clicking once on a switch symbol. The display over the switch changes colour according to the status:

- grey      Digital channel switched off
- green     Digital channel accepted by the chamber
- yellow    Digital channel switched on by the chamber

## 9 Creating a test program

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 12 Page 25

The test programs in the graphical editor are also automatically saved in the format of the symbolic editor. This function is also available in the symbolic editor. Select the appropriate setting while saving.

When programming loops, please note the following → Loop (Page 97)



### NOTE

*Check your test programs after such an import/export.*

### 9.1 Notes on creating programs

#### 9.1.1 Guaranteed holding time

With greater temperature changes, some time is required before the required temperature is reached. The programmed test duration (holding time) is kept at the desired temperature with this function. This means that SIMPATI detects when the required temperature is achieved and only then starts the programmed holding time. During this time, the temperature is not changed until the holding time is expired.

If a jump is programmed, the jump time is automatically adjusted to include the time required to match the actual value to the required setpoint.



### NOTE

*If a ramp is programmed, the guaranteed holding time must be deactivated for the time the ramp is due. Once the ramp is executed, the guaranteed holding time can be entered again.*

The function of guaranteed holding time is only supported by the following controllers: DMR, Prodicon Plus, Mincon, Simcon, Simpac and Stange. Programming is dependent on the controller and is described below.

#### ... for chambers with a DMR controller

After setting up the test program as normal, the following must be noted for these controllers.

The guaranteed holding time is set with digital channel 8 → Digital channels (Page 91).

So that SIMPATI can detect when the required temperature is reached, a tolerance band must be programmed. The function Pos. 3 Page 90 must be activated to do so. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function »Tolerance« (Page 95) to set the tolerance band.

Please note that the tolerance band must be re-edited after a jump → Page 96.



### NOTE

*The tolerance band monitoring is only available in the standard version (»R2-38«) for the temperature profile. If monitoring of temperature and humidity is required, the configuration bit 32 must be set on-site by a service technician.*

## Creating a test program with the symbolic editor

---

### ... for chambers with a Prodicon Plus controller or Stange controller

After setting up the test program as normal, please note the following for these controllers.

The guaranteed holding time is set with digital channel 17 → [Digital channels \(Page 91\)](#). Digital channel 17 is not configured by default and must be adapted if required with the aid of the Service Hotline → [1.7 Online help and operating manual \(Page 3\)](#).

So that SIMPATI can detect when the required temperature is reached, an envelope curve must be programmed. The envelope curve has a similar function to the tolerance band. The function [Pos. 3 Page 90](#) must be activated to do so. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function »Tolerance« ([Page 95](#)) to set the envelope curve.

If there is a jump, the envelope curve does not need manual editing in contrast to the tolerance band in other controllers.

### ... for chambers with Mincon, Simcon, Simpac, MOPS, CTC or TC controllers

After setting up the test program as normal, the following must be noted for one of these controllers.

So that SIMPATI can detect when the required temperature is reached, a tolerance band must be programmed. The function [Pos. 3 Page 90](#) must be activated to do so. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function »Tolerance« ([Page 95](#)) to set the tolerance band.

Use the Wait function as an alternative to the tolerance band → [Wait \(Page 98\)](#).

The Wait function can also be programmed in the symbolic editor in the Mincon, Simcon and Simpac controllers → [Wait function \(Page 71\)](#).

## 9.2 Creating a test program with the symbolic editor

You can access the menu via the context menu of the chamber.

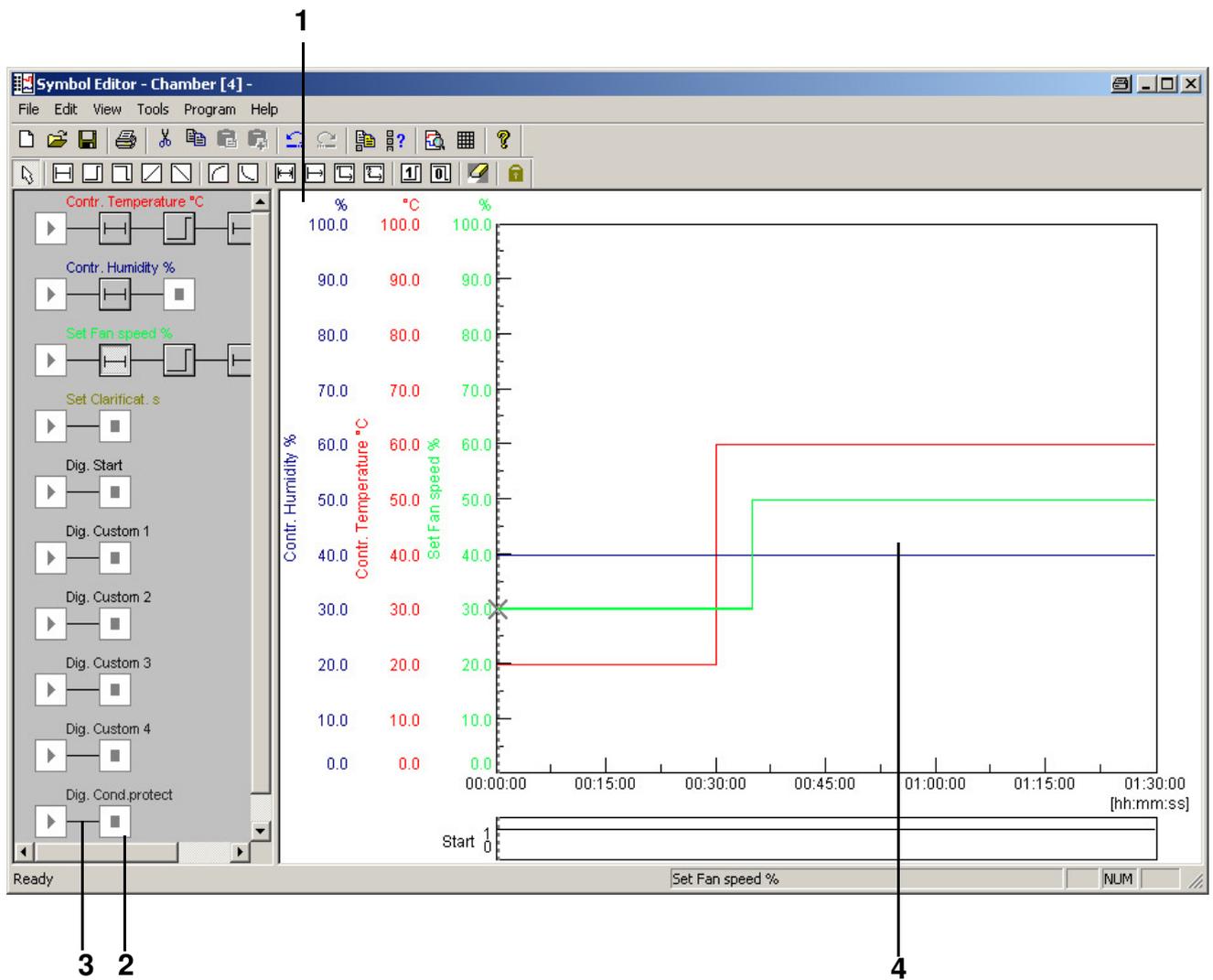
→ [Fig. SIMPATI main menu Pos. 12 Page 25](#) (»symbolic«)

The symbolic editor is a programming tool for chambers with a Simcon, Simpac or Mincon controller. It is possible to save the test programs in the format of the graphical editor. This allows you to also use the test programs created here for chambers with different controllers.



#### NOTE

*Please ensure that all of the profiles required for operation of the chamber are correctly entered and displayed. Profiles which are not displayed will appear as inactive on the control panel, and will not be taken into account by the program sequence!*



Symbolic editor

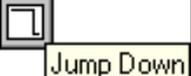
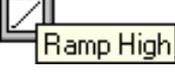
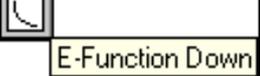
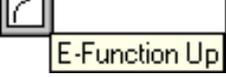
- 1 Programming symbols
- 2 Profile
- 3 Link line
- 4 Preview

For programming, programming symbols from the symbol bar are brought together to form a profile. A profile depicts the test sequence (preview) of the corresponding control variable, digital channel or setpoint.

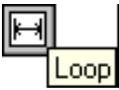
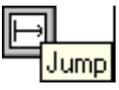
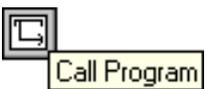
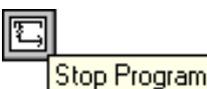
Creating a test program with the symbolic editor

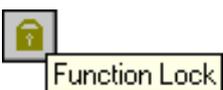
Program block	Meaning
	Selection function → <i>Selection block (Page 69)</i>
	Time block for all profiles → <i>Time block (Page 69)</i>

Analogue function for control variables and setpoints:

	Setpoint jump up → <i>Setpoint jump up/down (Page 70)</i>
	Setpoint jump down → <i>Setpoint jump up/down (Page 70)</i>
	Setpoint ramp up → <i>Setpoint ramp up/down (Page 72)</i>
	Setpoint ramp down → <i>Setpoint ramp up/down (Page 72)</i>
 	E-functions → <i>E-function (Page 73)</i>

Functions for influencing program execution

Program block	Meaning
 Loop	Loop → <a href="#">Loop (Page 74)</a>
 Jump	Conditional program jump → <a href="#">Conditional program jump (Page 74)</a>
 Call Program	Program call for a different test program → <a href="#">Call of another test program (sub-program) (Page 75)</a>
 Stop Program	Program stop for a different test program which is running → <a href="#">Program stop for a different test program (sub-program) (Page 75)</a>

 Digital On	Digital function: digital channel ON → <a href="#">Digital channel ON/OFF (Page 76)</a>
 Digital Off	Digital function: digital channel OFF → <a href="#">Digital channel ON/OFF (Page 76)</a>
 Delete	Eraser symbol for deleting programming symbols → <a href="#">Eraser function (Page 76)</a>
 Function Lock	Lockout function to maintain current selection → <a href="#">Lockout function (Page 76)</a>

Once the programming symbol has been selected, click with the left mouse button to change the mouse pointer into the selected programming symbol. The programming symbol is then pasted by clicking with the left mouse button on the link line. If you click on an existing programming symbol, this can be replaced. After setting the programming symbol or double-clicking on the set programming symbol, the menu window for programming it appears automatically.

## Creating a test program with the symbolic editor

### A) Configuring a profile

#### Profile selection

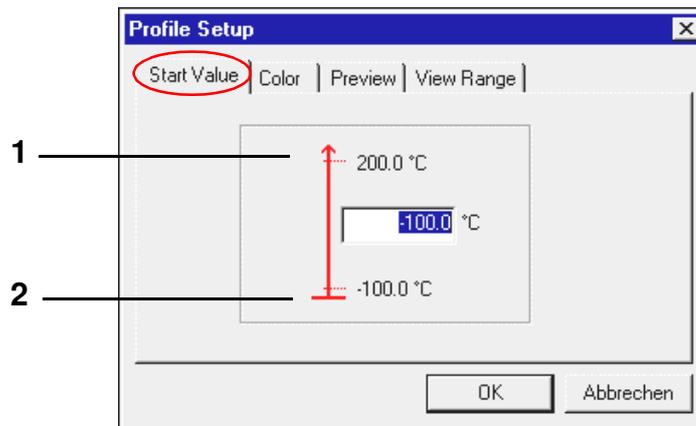


You can select the displayed profiles and define the appropriate start values via the context menu of the Start symbol . Description → [Profile selection \(Page 78\)](#)

#### Profile Setup

Via the context menu or by double-clicking on the Start symbol, you can display the menu »Profile Setup« to enter the appropriate start values.

#### Start value



- 1 Upper chamber limit
- 2 Lower chamber limit

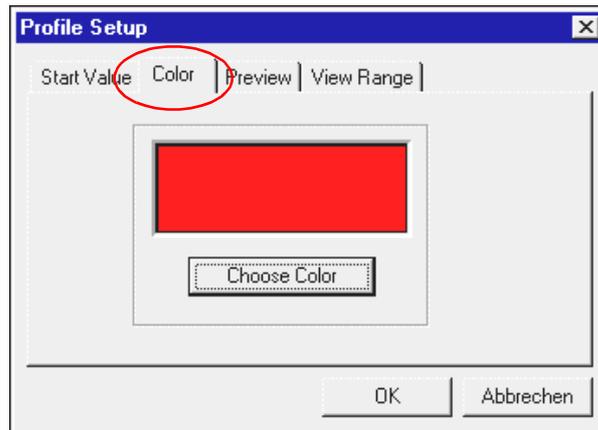
Here you can enter the start value of a profile (between the chamber limits). However, please note that the chamber needs an appropriate amount of time to set this value. You must take this time into account during programming.



#### NOTE

*The starting value for all control variables, control values and digital channels is occupied by default with the minimum value (in the vicinity of the chamber wall). If a given control value is to apply to all programs to be created in the same system, it must be set in the profile as the standard (description under item D).*

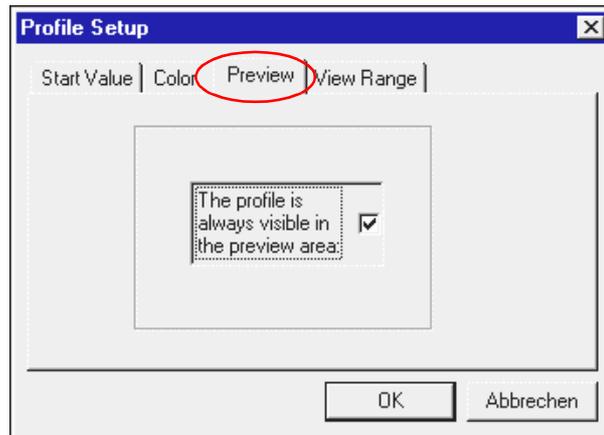
## Colour settings



When creating a new test program, the default colour settings in the configuration are automatically accepted as the colour value of a profile. The colour settings can be individually adapted and saved as the default settings → [Profile selection \(Page 78\)](#).

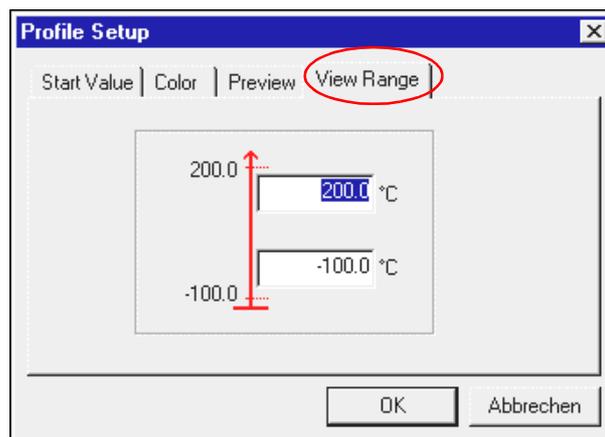
## Creating a test program with the symbolic editor

### Preview



The preview of the symbolic editor always shows the profile you have just selected. If this function is activated, this channel will be added to the profile currently in the preview. To reduce flickering during image build-up in the preview, only have the minimum number of profiles required for programming permanently displayed.

### Display range



Within the preview, the time axis is automatically adapted to the selected setpoints. The Y axis range can be individually selected by inputting (from -100,000 to +100,000) in this menu window.

**B) Working with the programming symbols**

After setting the programming block or double-clicking on it, the corresponding menu window for configuration opens. If no data were entered for the programming symbol, there will not be a preview.

**Selection block**

The only way to activate a programming symbol in a profile is with the selection symbol. After each programming operation, the programming block used is automatically no longer active and the selection block becomes available again. If this needs to be suppressed, use the *»Lockout function«* (Page 76).

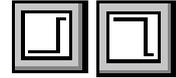
By pressing the Ctrl key, several symbols can be selected by clicking or using a rubber band line.

**Time block**

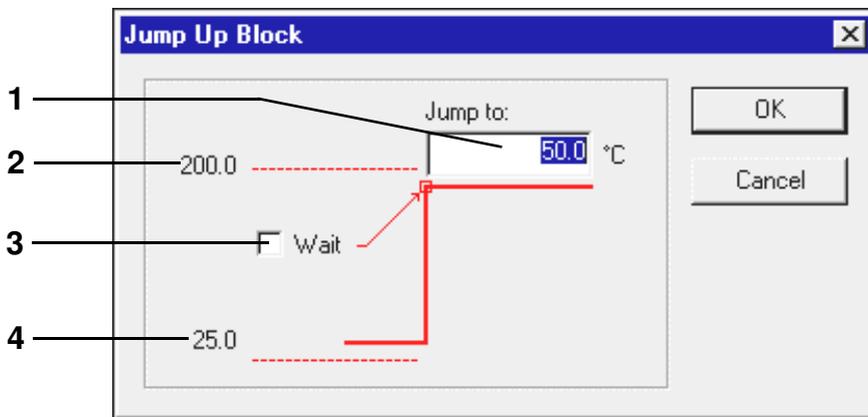
The constant block defines how long the previously set value should be held (shown as a level in the preview). This function is available for control variables, setpoints and digital channels.

## Creating a test program with the symbolic editor

## Setpoint jump up/down



A jump can be used to rapidly move a setpoint up or down. This function is available for control variables and setpoints.



- 1 Input jump end value (setpoint)
- 2 Maximum jump end value (channel limit)
- 3 Activation of the Wait function at the jump destination
- 4 Current setpoint before the jump

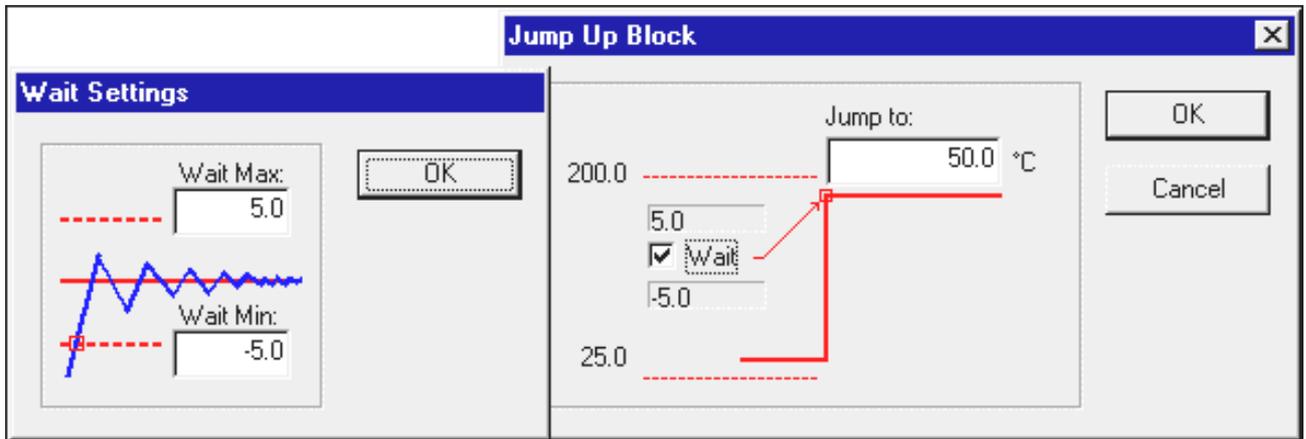
The Wait function can be activated at the end of the jump. The Wait function causes the program running time to be paused until the actual value is located inside the defined Wait range.

After the wait function has been activated, an input dialogue opens for these values.

The example given is for a jump up. If there is a jump down, the current value is at [Pos. 2 Page 70](#) and the value of the chamber lower limit is at [Pos. 4 Page 70](#).

**Wait function**

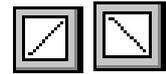
The upper and lower Wait values are copied into the configuration dialogue.



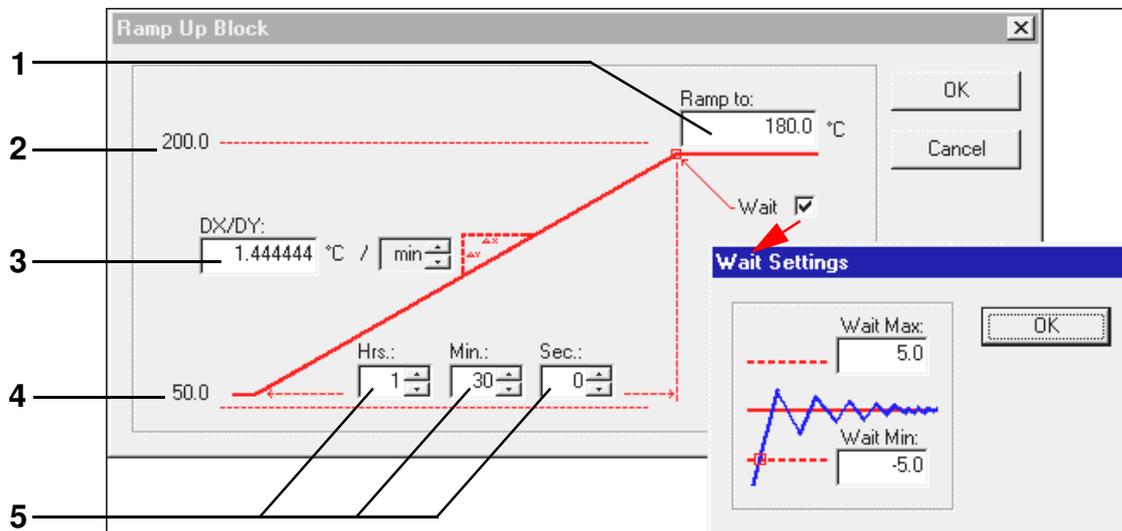
Programming a setpoint jump down is carried out in a similar manner.

## Creating a test program with the symbolic editor

## Setpoint ramp up/down



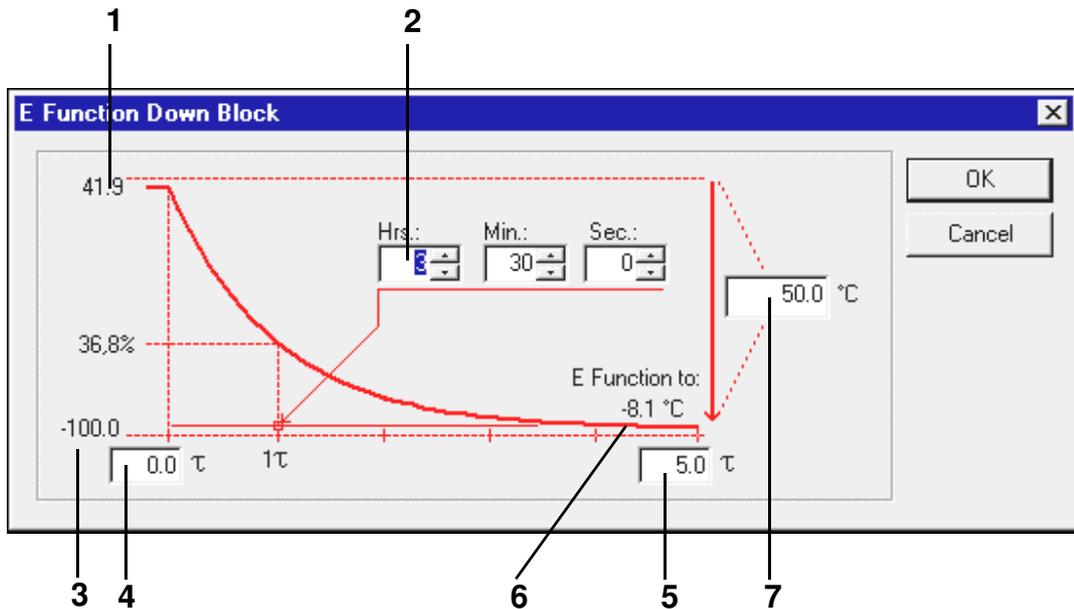
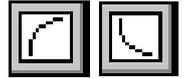
A ramp can be used to program a controlled up or down change of a setpoint. This function is available for control variables and setpoints.



- 1 Enter the ramp end value (setpoint).
- 2 Maximum ramp end value (chamber limit)
- 3 Ramp modification rate
- 4 Current setpoint before the ramp
- 5 Ramp time value

The example given is for a ramp up. If there is a ramp down, the current value is at [Pos. 2 Page 72](#) and the value of the chamber lower limit is at [Pos. 4 Page 72](#).

E-function



- 1 Current value
- 2 Time value for 1  $\tau$
- 3 Lower chamber limit
- 4  $\tau$  range being processed, 1  $\tau$  to 5  $\tau$
- 5  $\tau$  range being processed, 1  $\tau$  to 5  $\tau$
- 6 E-function final value
- 7 Difference between start and end value

The example given is for the falling E function. If the E function is rising, the current value is at [Pos. 3 Page 73](#) and the value of the chamber upper limit is at [Pos. 1 Page 73](#).

## Creating a test program with the symbolic editor

---

### Loop



This programming symbol allows a loop to be created so that part of a program can be repeated. To do this, two different positions must be defined in the active loop symbol that enclose the section to be repeated. A programming symbol must be contained in the program section to be repeated; this symbol must explicitly state a time. Jumps and ramps, for example, are processed in the time »X« and are thus unsuitable.

First paste a programming symbol for the loop start and for the loop end. The menu in which you can enter the loop repeat factor now appears.

### Conditional program jump



This function is available only with Flash version 00.17 or higher.

Depending on the status of a digital channel, this function causes the program to jump to another part of the program and continue from there. As with the loop, two different positions must be defined when the jump symbol is active:



Symbol which causes the program to determine the status of the corresponding digital channel.



Symbol which defines the destination to which the program should jump when the appropriate conditions have been met.

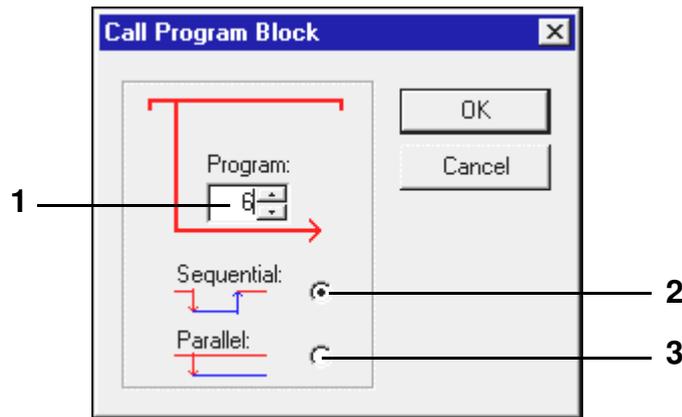
The jump is made if the status of the digital channel matches the status specified here.

**Call of another test program (sub-program)**



This function is available only with Flash version 00.17 or higher.

This function permits another test program to be called and started as a sub-program while the test program is running. A precondition is that this test program was first transferred to a program location in the chamber controller → [10.1 Loading test programs from SIMPATI to the chamber controller \(Page 113\)](#).



- 1 Program No. of sub-program
- 2 If the sub-program is called sequentially, the current test program is abandoned, the sub-program is processed and the test program that made the call is then processed further.
- 3 If the sub-program is called in parallel, the sub-program is executed at the same time as the test program that made the call. Make sure that only those profiles from the sub-program are processed for which the preview is active → [Preview \(Page 68\)](#)



**NOTE**

*When test programs are to be executed in parallel, please note that the same profile cannot be processed twice at the same time.*

**Program stop for a different test program (sub-program)**



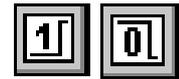
This function is available only with Flash version 00.17 or higher.

This allows a sub-program which is running in parallel to be stopped.

## Creating a test program with the symbolic editor

---

### Digital channel ON/OFF



These functions are used to switch a digital channel on or off.

### Eraser function



This function allows a programming block to be deleted from a profile.

Select the eraser symbol and double click on the block which is not required. The symbol will be deleted after confirmation has been requested. As an alternative, a selected block can be deleted via the keyboard or the task menu.

### Lockout function



After each programming operation, the programming block used is automatically no longer active and the selection block becomes available again. If this needs to be stopped in order to use the active symbol several times in a row, select the lockout function. This remains active until it is selected again.

### The function »Undo/Redo« (»Undo/Redo«)

You can undo/redo at most the last 19 steps.

**C) The menu function »File«****Open**

Here you can open a test program created in the symbolic editor (\*.bxx) or in the graphical editor (\*.pxx). Select the appropriate file type.

**Save / Save As**

This function is used to save the test program with its own name or with a new test program name. → [Appendix: \(Page 2\)](#). The test program can be saved in the format of the graphical editor (\*.pxx) or in the format of the symbolic editor (\*.bxx). Set the file type accordingly.

The test program must be checked and manually adapted in the graphical editor because the functions of the graphic and symbolic editors do not entirely match up. This means that some information may be lost during the import.

**Print/page view**

Depending on the display, the program list or the preview is printed as it appears in the print preview (»Print Preview«).

**Printer setup**

The printer properties can be set here. The printer properties can be separately selected and saved for the program list and for the preview.

**List/comment**

Displays the test program in the form of a a program list. The entered comment appears in the list heading. The test program cannot be changed using this function.

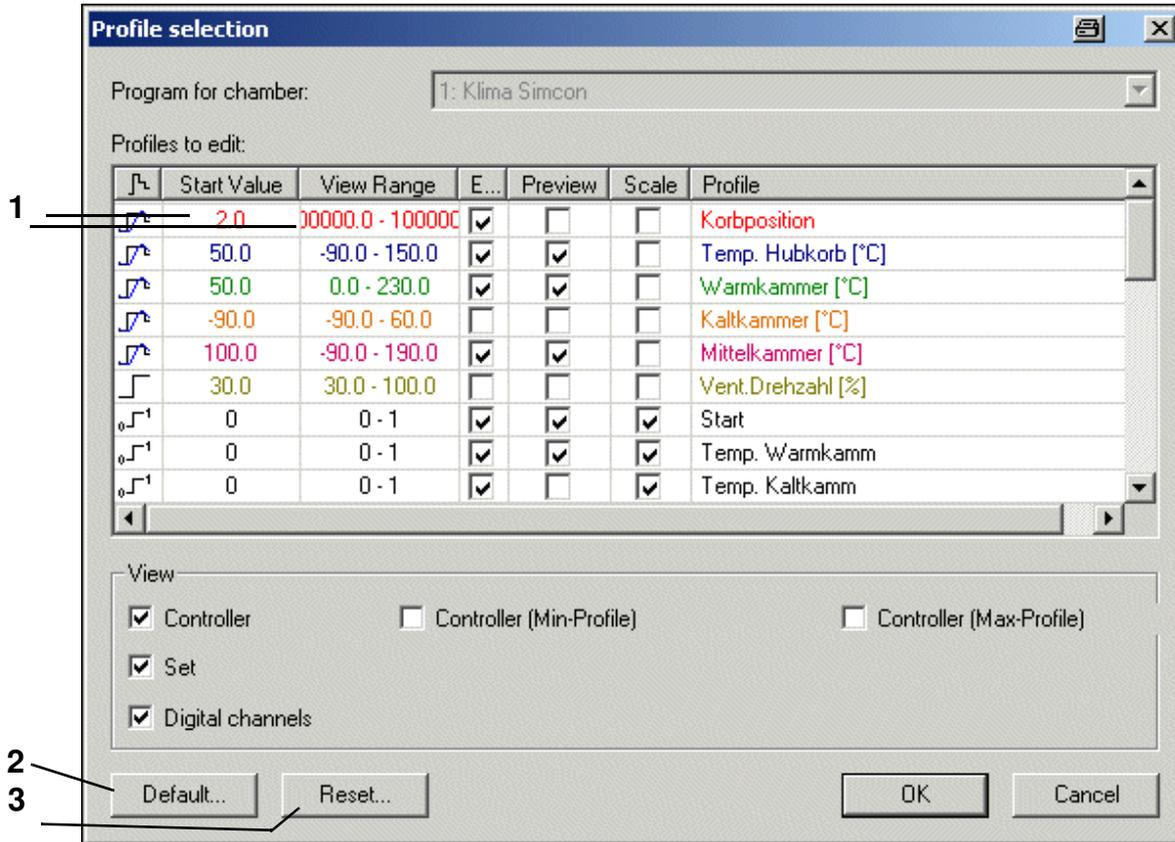
## Creating a test program with the symbolic editor

### D) The menu function »Edit«

#### Profile selection



Via the menu and the context menu of the Start block , you have the opportunity to select the control variables, digital channels or setpoints for which a profile is to be displayed and processed in the menu window »Profile selection«.



- 1 Double click → [Profile Setup \(Page 66\)](#)  
This setting is only valid for this test program.
- 2 The settings are specified for each new test program.
- 3 All settings are reset

## Copying profiles



This function is used to save the test program under another file name, for the current chamber or another chamber. If the test program is to be saved for a different chamber then you must define here which profile characteristics of the current chamber are to be assigned to the control variables, digital channels or setpoints of the destination chamber.

- To do this, activate the display for all control variables, digital channels and setpoints for the current chamber.
- Check the profiles which are to be copied, otherwise the profile will not be copied.

The original profile and the appropriate destination profile must be side-by-side in the same row.

- Place the mouse pointer in the "Destination chamber" column and in the row with the control variable, digital channel or setpoint which is to be newly assigned. Right-click in this row to receive the complete selection of all control variables, setpoints and digital channels for the destination chamber.
- From this list, select which control variable, digital channel or setpoint should correspond to the profile in the left of this row.



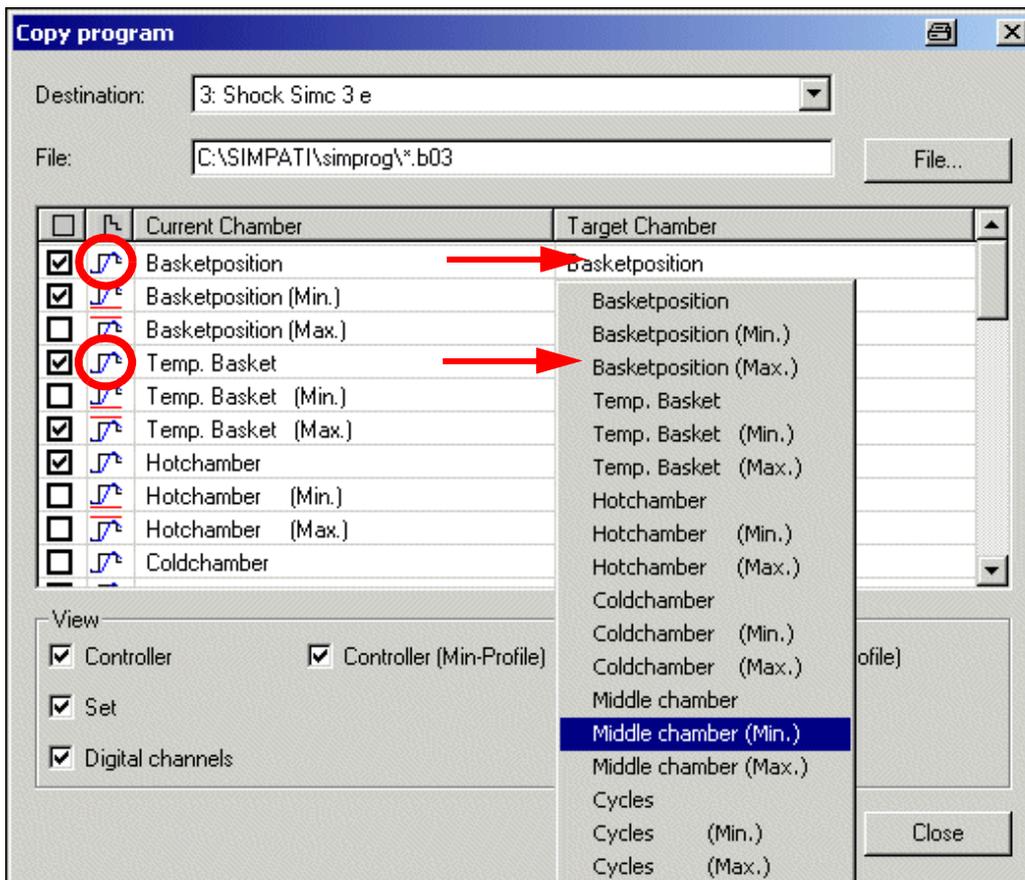
### NOTE

*Incorrect profile assignments may lead to malfunctions. For example, customer outputs may be assigned differently, or the chamber may be equipped with options.*

*Please ensure that all of the profiles required for operation of the chamber are correctly entered. Profiles which are not selected will appear as inactive on the control panel, and will not be taken into account by the chamber controller.*

## Creating a test program with the symbolic editor

## Example:



The control variable »TempLift« now accepts all the settings of the control variable »Temp. Lifting Basket«.

The control variable »Hot Temp« is assigned all the settings of the control variable »Hot Chamber«.

In addition to the control variables, profiles can be entered for the upper and lower warning limits (Min. Profile and Max. Profile). These profiles are important in all cases where the tolerance specification is not symmetrical to the setpoint, e.g. IEC 68230 cool-down phase.

### Copy preview

The preview is saved as a bitmap in the clipboard.

### Synchronising

After inserting a loop or a jump into a profile (reference profile), the loop or jump must be taken into account for all the other profiles as well. You can do this by pasting the loop/jump into the rest of the profiles.

The function »Synchronising« adapts all profiles to the loop/jump settings of the reference profile according to the default settings in the menu »Loops and jumps« (Page 82) if it is not already activated and synchronization has been carried out automatically.

**Cut / Copy / Paste**

Programming blocks can be moved, copied, and pasted into each profile. The settings for each programming block are transferred in the process. When transferring to another profile, it is possible that the settings will need to be adapted (synchronised).

By pressing the Ctrl key you can select multiple blocks; alternatively, you can select them with the aid of a rubber band line in order to copy, move or delete them.

**E) The menu function »View«****Symbol bar****File**

Shows/hides the bar with the function icons.

**Program**

Shows or hides the bar with the programming symbols.

**Status bar**

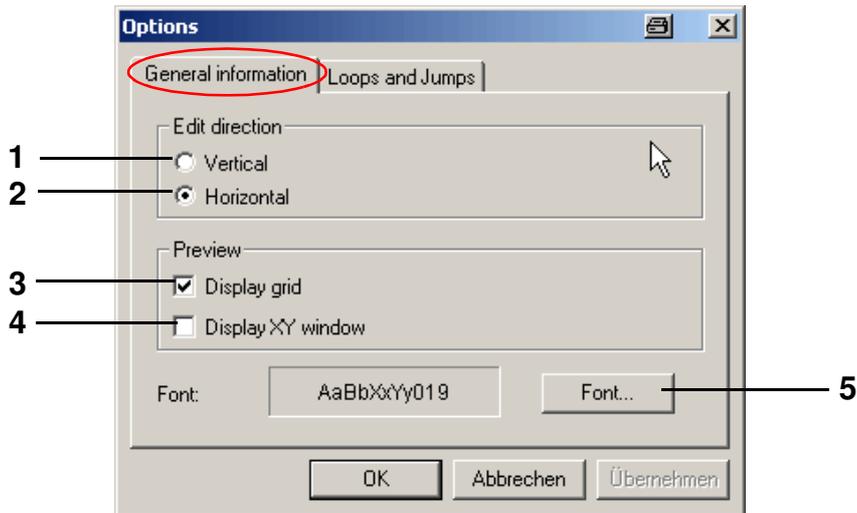
Shows or hides the bar underneath the symbolic editor. The bar shows additional information related to the current function.

**Split Lock**

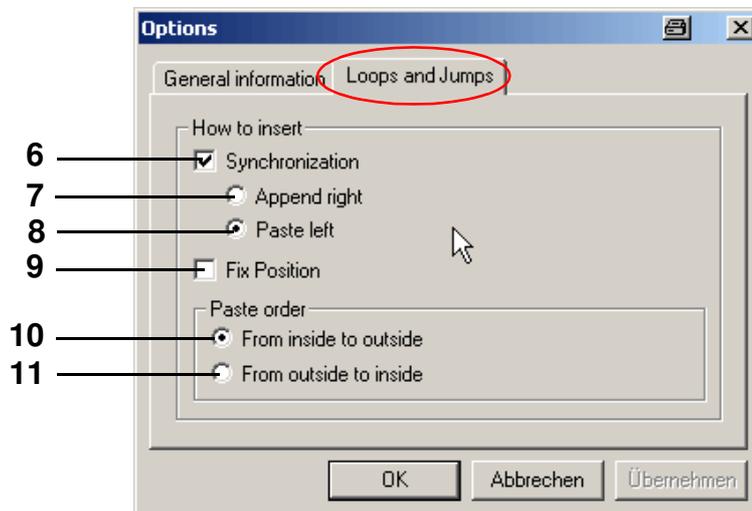
When this function is active, the size of the programming range or preview can no longer be changed by moving the horizontal scroll bar with the mouse or finger to the left or right.

## Creating a test program with the symbolic editor

## F) The menu function »Extras«



- 1 Align the display vertically
- 2 Align the display horizontally
- 3 Show grid lines
- 4 Show XY display
- 5 Change font for the profiles, the preview and the program list

*Loops and jumps*

When pasting a loop/jump into the rest of the profiles, all the programming symbols with time allowances are taken into account. Here you must define whether the loop start should be pasted to the left or right of the programming blocks without a time allowance.

- 7 The start/end is pasted to the right of the last programming block without a time allowance.
- 8 The start/end is pasted to the left of the first programming block without a time allowance.

In profiles which do not contain any programming blocks with time allowances, the time blocks are inserted according to the time sequence of the reference profile.



## NOTE

*If the Synchronization function (Pos. 6 Page 82) is activated here, the remaining profiles are automatically adapted after placing a loop/jump in a profile.*

*We recommend that the status of the Synchronization function should not be switched between "active" and "inactive" during programming.*

- 9 The loop/jump is constant in terms of time, i.e. the time of the program section cannot be extended in the loop/jump. Everything which goes beyond the original length is moved outside the loop. If this is not desired, deactivate this function and/or reset the loop.

### Paste order

The paste order of the programming blocks for the loops/jumps must be observed if several loops/jumps are pasted into a profile. This prevents the start and end of different loops/jumps from overlapping.

- 10 Programming blocks for the loops/jumps can only be placed from the inside to the outside; subsequent insertion of a loop/jump into an existing loop/jump is not possible if this function is active.
- 11 Programming blocks for the loops/jumps can only be placed from the outside to the inside. Subsequent pasting of a loop/jump around an existing loop/jump is not possible if this function is active.

## G) The menu function »Program«

You can choose all the programming blocks here as an alternative to using the toolbar.



### 9.3 Creating a test program with the graphical editor

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 12 Page 25 (»graphical«)

The graphical editor is used to produce and modify test programs in a graphical format.

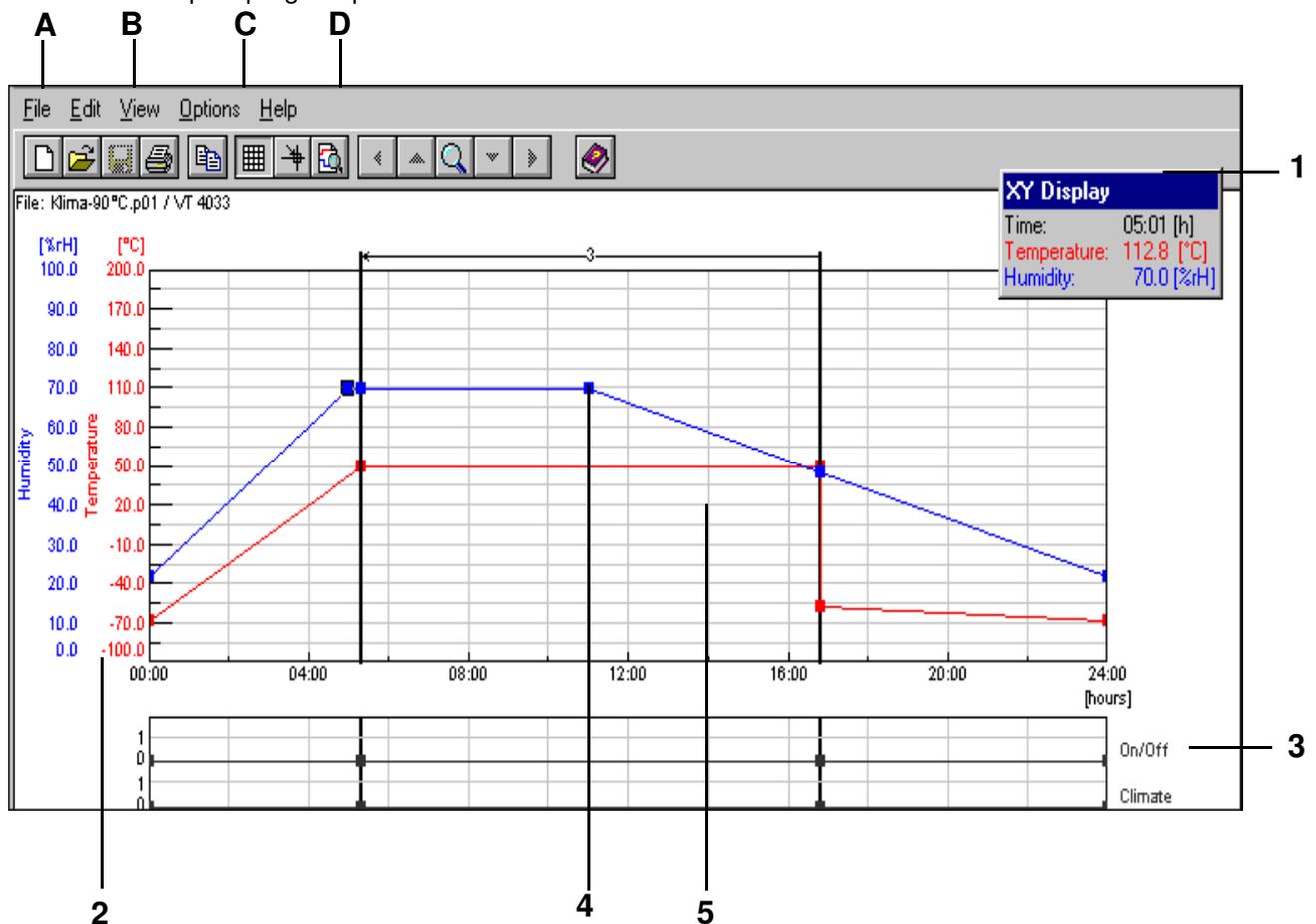
1 **New** → Fig. New profile, Page 86

2 **Open**

Open a test program imported from the symbolic editor and check the profile sequence in the graphic editor. The functions of the graphic and symbolic editors must not coincide entirely; this means that the import may have lost some information.

3 **Preview**

Graphic program preview



- 1 Moveable XY display
- 2 Scale for control variables
- 3 Scale for digital channels
- 4 Profile data point
- 5 Working range

A profile data point can be created by double-clicking on the curve; repeat to delete the point. Click on the profile data point – hold and drag to move the data point.

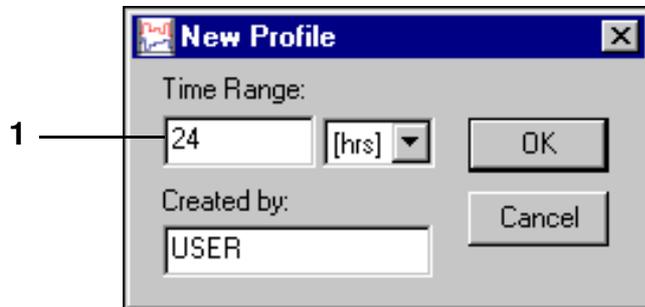
## Creating a test program with the graphical editor

---

### A) Menu point »File«

#### New

This function is used to create a new test program.



*New profile*

- 1 Enter the test program duration - this can be changed.

#### Open

A menu box for opening a test program appears.

#### Save

File name → [Glossary and tips, Test program names / Program numbers](#), Page 2

#### Save as

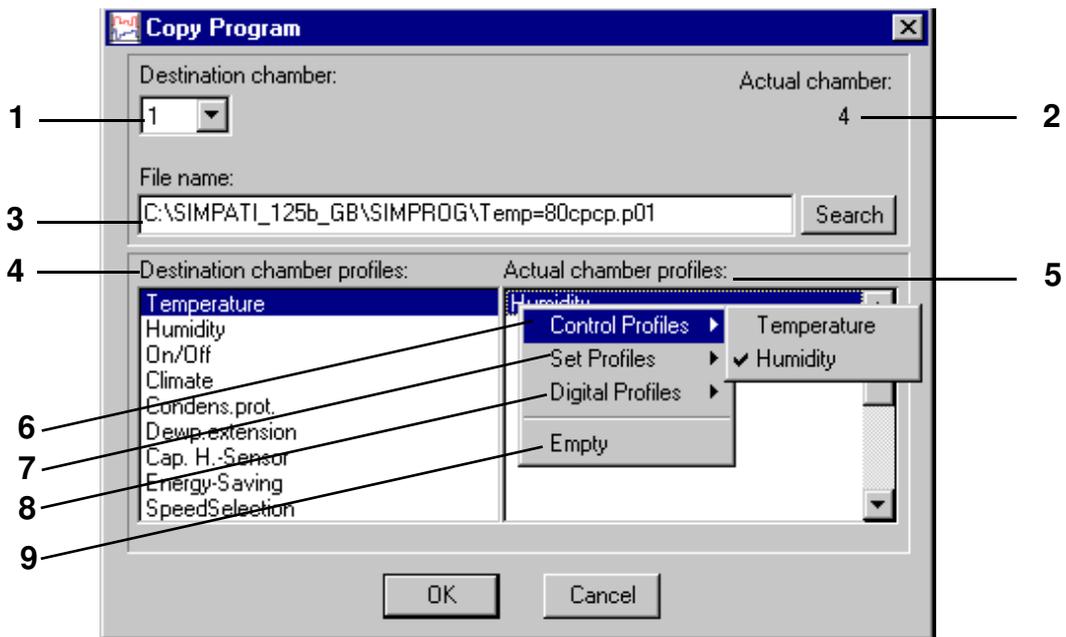
This function allows a test program to be copied and saved with a different test program name.

#### Delete

This function is used to delete test programs.

#### Copy the program

This function can be used to copy the current test program for another chamber. The copied test program is given a new name. Profiles cannot be copied into existing test programs.



Copying test programs

- 1 Available chambers, select number of the destination chamber
- 2 Number of the current chamber whose test program is to be copied
- 3 After selecting the destination chamber, the directory for saving is automatically chosen. The file name is the same as for the current chamber with »cp« (copy) appended. The extension is the number of the destination chamber .
- 4 Channels available in the destination chamber ([Pos. 1 Page 87](#)). The profiles must be assigned to these channels.
- 5 Profiles of the current chamber ([Pos. 2 Page 87](#))
- 6 Control variables of the current chamber
- 7 Control variables of current chamber
- 8 Digital channels of current chamber
- 9 Empty field

**Assigning profiles:**

- Select the destination chamber channel.
- Double-click on the black bar in the list box [Pos. 5 Page 87](#).
- Select the profile with a single click.

**NOTE**



*If the range of a control variable of the current chamber is larger than that of the destination chamber, the profile is automatically matched to the limits of the destination chamber.*

## Creating a test program with the graphical editor

### B) The menu function »Edit«

#### Copy

This function is used to save the current view as a bitmap on the clipboard, thus making it available for processing in other software.

### C) The menu function »View«

#### Grid

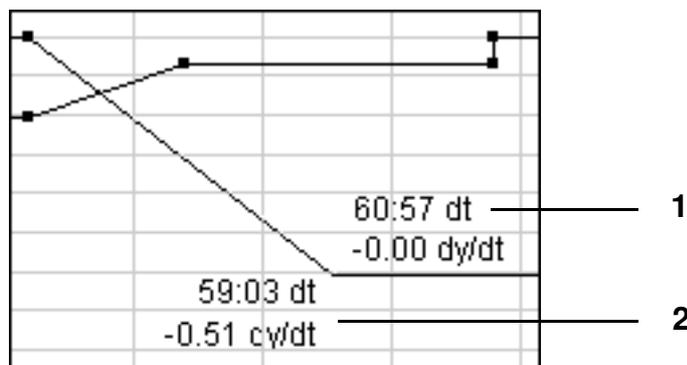
This function is used to activate gridlines for the working range.

#### XY display

The XY display shows the coordinates of the mouse pointer in the working range

#### Data point calculation

If the mouse pointer is located on a profile data point and the left mouse button is pressed, this displays the rate of change per minute and the time distance from the previous and following profile data points.



*Data point calculation*

- 1 Time distance and rate of temperature change (per min) in relation to the following profile data point
- 2 Time distance and rate of temperature change (per min) in relation to the previous profile data point

#### Crosshair

A crosshair is activated. When the function »[Data point calculation](#)« ([Page 88](#)) is active, the crosshair display can be suppressed by pressing the left mouse button.

#### Enlarge XY

This function is used to select and enlarge an X/Y section. The zoom area can be selected by clicking and moving the crosshair and then clicking again.

**Move zoom**



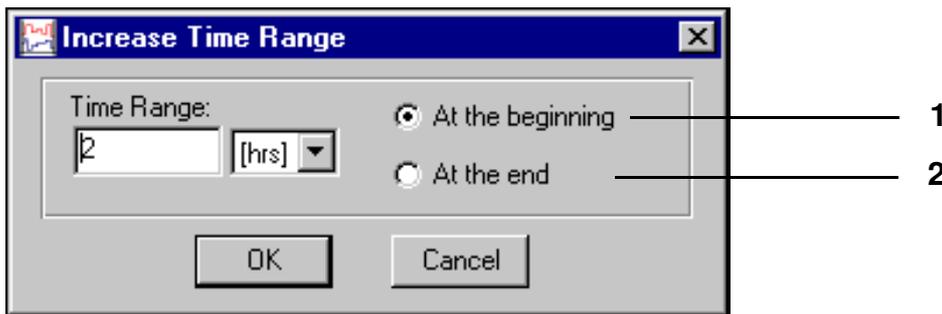
This function is used to move a zoomed section.

**Show all**

The full test program is displayed.

**Time range**

This function is used to modify the length of the test program at the beginning and end.



1 The length of the test program is increased or decreased at the beginning.

2 The length of the test program is increased or decreased at the end.

Insert/delete time segments within the test profile, → Context menu command *»Edit time«* (Page 99).

**Preview**



The curve shown corresponds to the actual test run.

**List**

Displays the test program in the format of a program list. The processing of the program list can be modified via the context menu. However, the test program cannot be modified in this menu window.

**Redraw**

This function is used to refresh the display. Discrepancies in the hardware and drivers may lead to pixel noise in any drawing program, which can be removed by refreshing the display.

If a lot of pixel noise is produced, switch off the accelerator options in the graphics card using the driver software.

## Creating a test program with the graphical editor

## D) The menu function »Options«

## Snap function

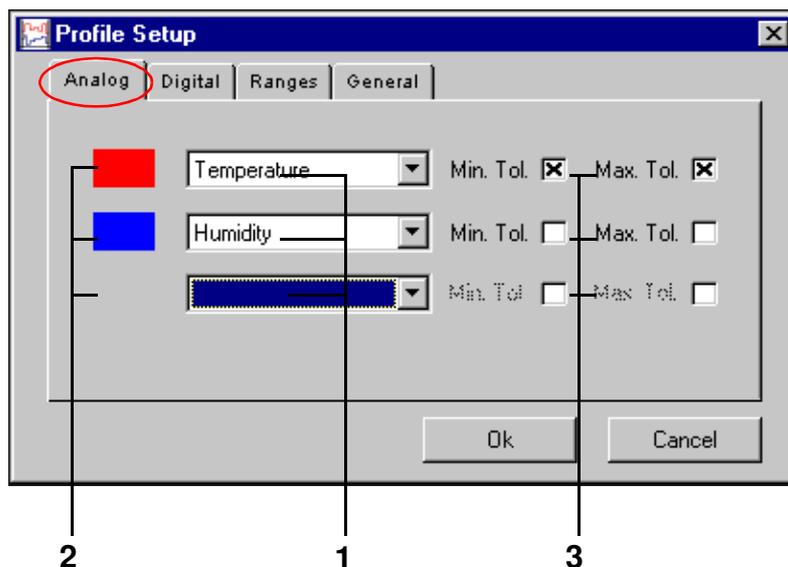
This function is used to specify a grid, so that the profile data points can be located in the snapped positions only.

Entering coordinates without a grid → Context menu command »Value« (Page 95).



## Profiles

## Analogue channels (parameters)

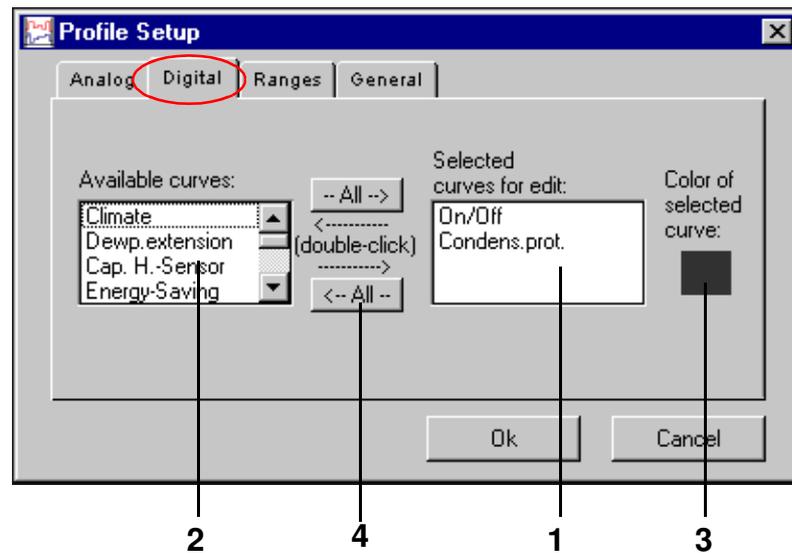


- 1 Select the analogue channels which are to be displayed (control variables)
- 2 Colour allocation to the activated analogue channel (control variable)
- 3 Select the tolerance band display.

A maximum of three analogue profiles can be selected for display. Duplicate displays are not possible. Analogue profiles not selected for display remain unchanged. The colour allocation of an analogue channel is implemented by clicking on the colour field.

Input of tolerance ranges → Context menu command »Tolerance« (Page 95).

## Digital channels

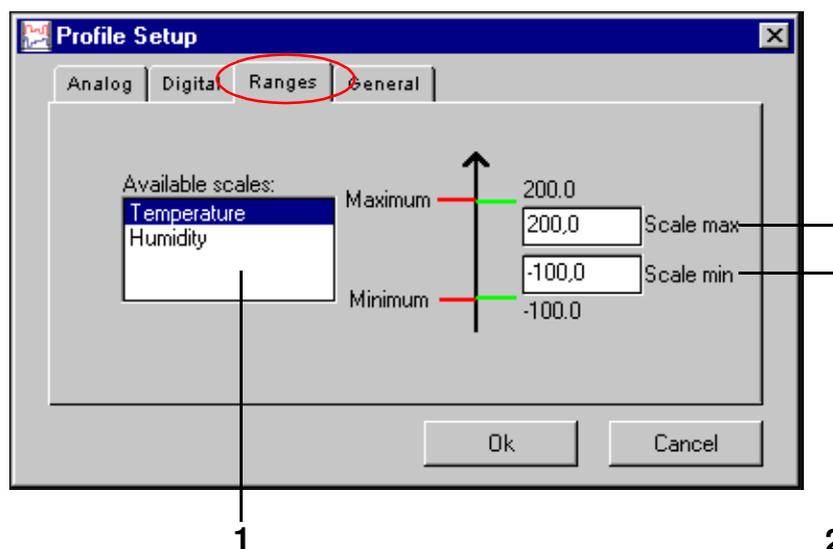


- 1 Select the digital channels which are to be displayed
- 2 List box of available digital channels
- 3 Colour allocation for the activated digital channels
- 4 Move all digital channels

Display of the digital channel can be activated by double-clicking on the corresponding digital channel in the list box ([Pos. 2 Page 91](#)). The digital channel appears in the list box ([Pos. 1 Page 91](#)).

The colour allocation of a digital channel is implemented by clicking once on the colour field.

## Working range



- 1 List box for selection of the analogue channels being used as scales (control variables)
- 2 Defining the display range of the scale for analogue channels (control variables)

This function is used to set the scale dimensions. Depending on the range setting, existing graphs may lie outside the specified working range and will thus not be visible.

**NOTE**

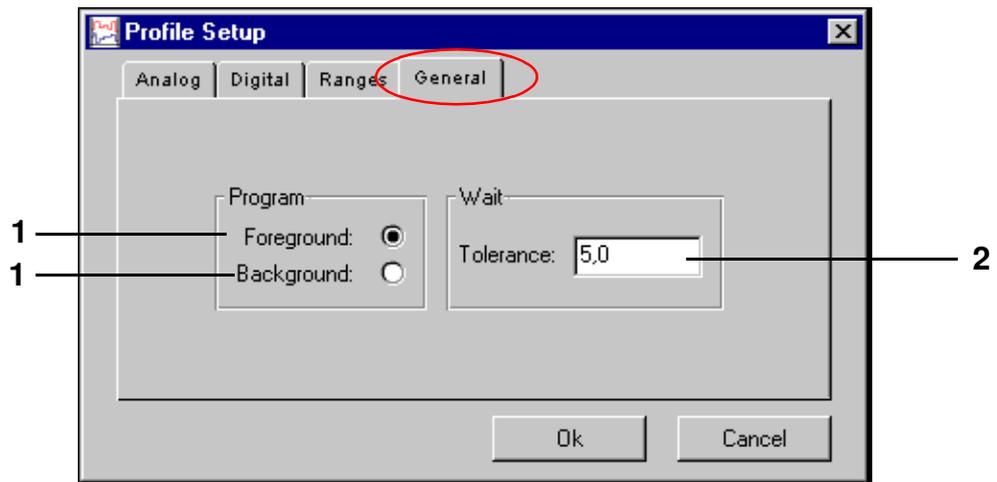
*For chambers with a Mincon, Simcon, Simpac, MOPS, CTC or TC controller, these scaling limits are transferred as the alarm limits to the controller when the program is started. You can stop this by changing the start file (..\simpati\system\Simpati.str) as follows:*

Insert an additional parameter (\NOALARMLIMIT) after the entry for the driver.

Previous entry: 20 : 01 : simmops::

New entry: 20 : 01 : simmops:\NOALARMLIMIT:

**General profile settings**



**1 Foreground/background program**

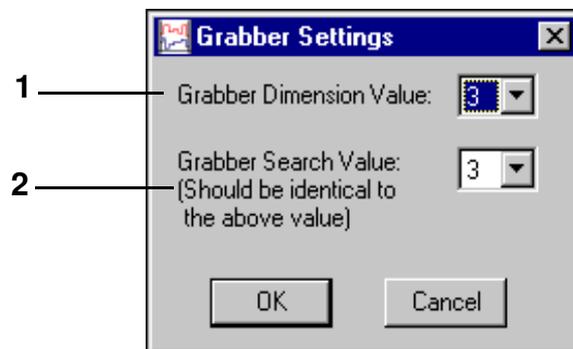
→ Context menu commands »Wait« (Page 98) and »Call Program« (Page 99).

**2 Wait function**

When using the Wait function, the test program (and therefore the program time) only starts running when the difference between the setpoint and the actual value is not greater than this value. This value refers to all Wait functions in this test program. Enter an absolute value.

**Grabber settings**

In this menu window the size of the profile data points can be modified independently from the grabber range of the profile data points.



1 Changes the visual size of the profile data points.

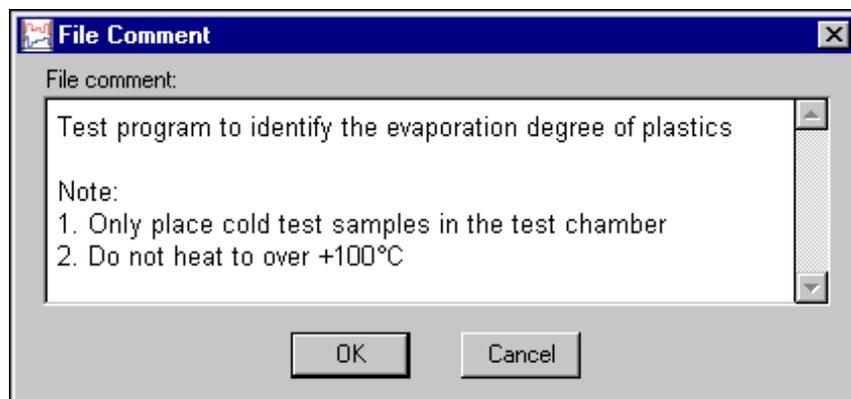
2 Changes the area around a profile data point in which the profile data point can be grabbed with the mouse pointer (should be identical to the above value).

## Creating a test program with the graphical editor

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### File comment

Dialogue box for entering comments concerning the test program. The comments are saved together with the test program. Line break: Ctrl + Enter key.



Comments concerning each profile data point → Context menu command *»Comment«* (Page 96).

### Font

Only the font for the graphical editor window can be set.

The font size changes automatically with the window size.

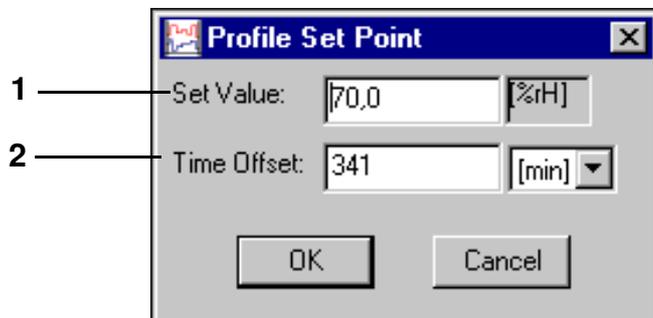
No other formatting options are available.

The modified font is not saved with the measurement file. The font remains valid in the graphical editor until it is changed again.

E) Context menu commands

Value

This function can be used to directly input the coordinates for a profile data point.

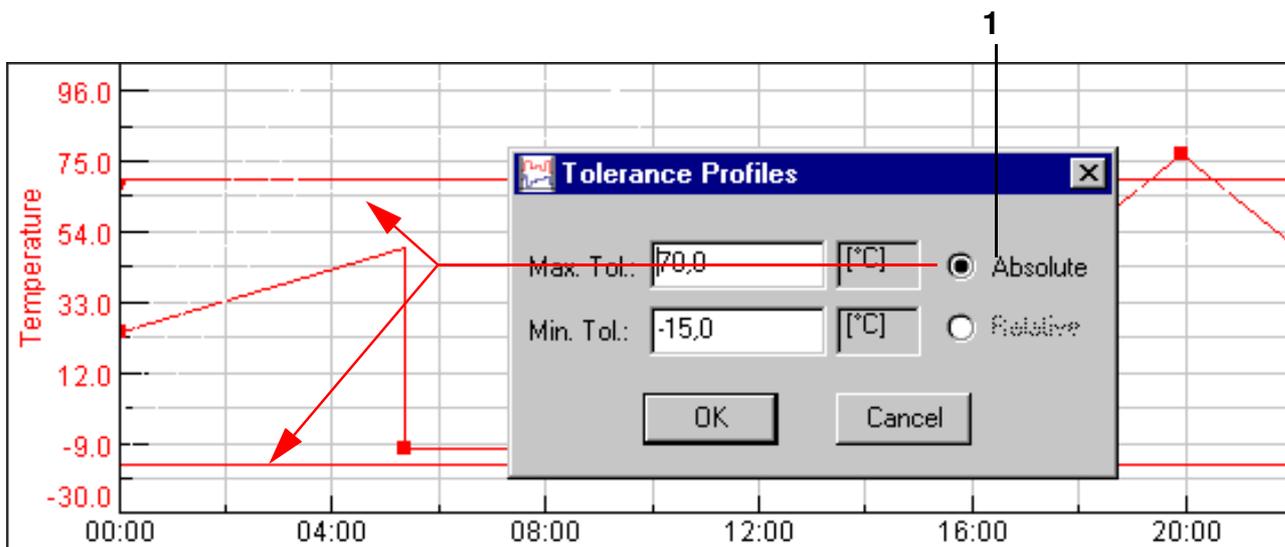


- 1 Position of the profile data point on the scale of the analogue channels (control variables)
- 2 Time difference from previous profile data point

Tolerance

Input of tolerance band values

The tolerance bands display must be activated [Pos. 3 Page 90](#).



Absolute tolerance band

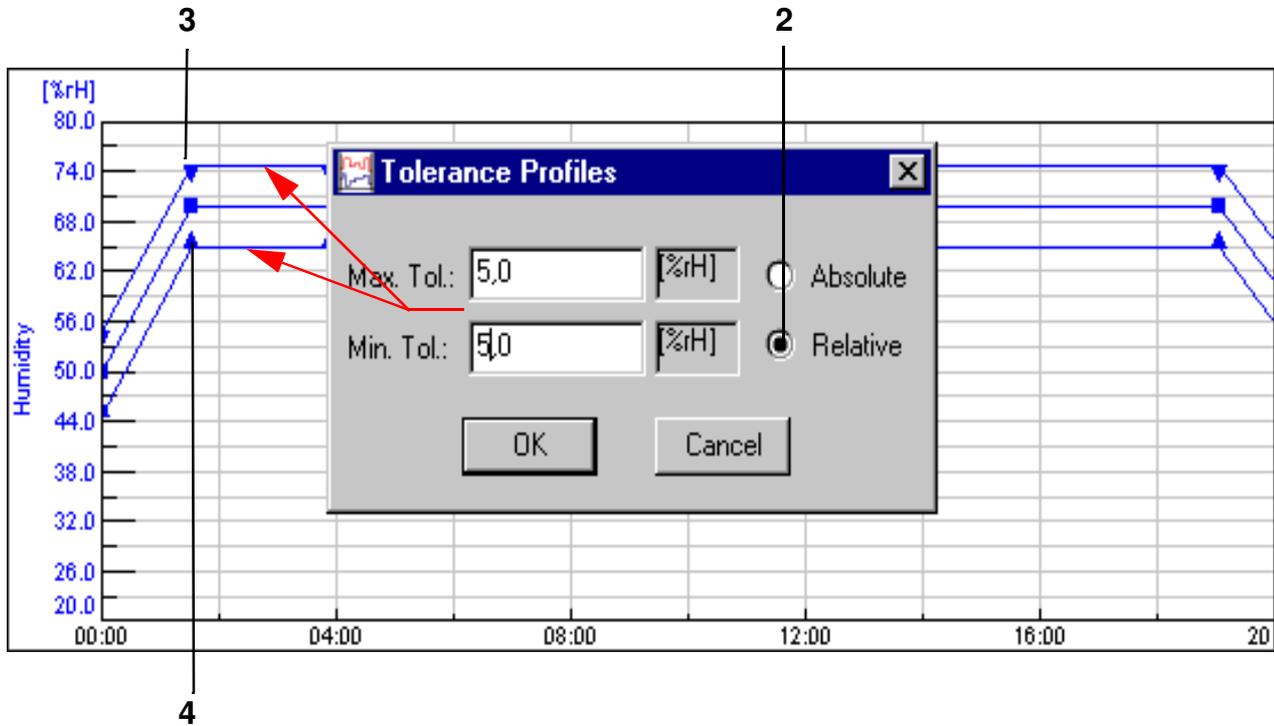
Creating a test program with the graphical editor

The tolerance band constantly lies at the given setpoint.

2 This function is only active with a DMR, Mincon, Simcon or Simpac controller.

The tolerance band lies at the specified distance from the setpoint.

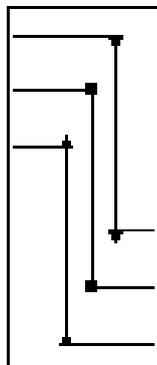
The minus sign is only entered after the numerical value has been entered.



Tolerance band relative

The upper (Pos. 3 Page 96) and lower (Pos. 4 Page 96) tolerance bands can be differentiated with different profile data points.

A set distance is given for any jump otherwise lines may cross over and give rise to a controller error message. That is why the tolerance band must be manually adjusted after a jump.

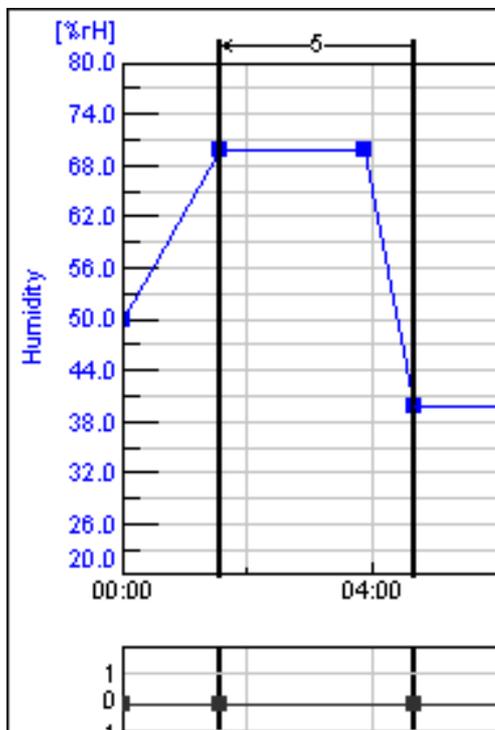


Comment

Each profile data point can have its own comments.

**Loop**

This function is used to enter a loop. All profile data points within this loop repeat themselves once the loop start has been reached, depending on the loop repeat value. The loop repeat value can only be entered once the loop has been specified.



The loop start must always be specified to the right of the loop end.

Deleting a loop:

- Double click with the left mouse button on the loop start or loop end point
- Move loop start or loop end point



**NOTE**

*If you would like to import the test program to the symbolic editor, take the following into account when you program a loop so that the test program converts properly:*

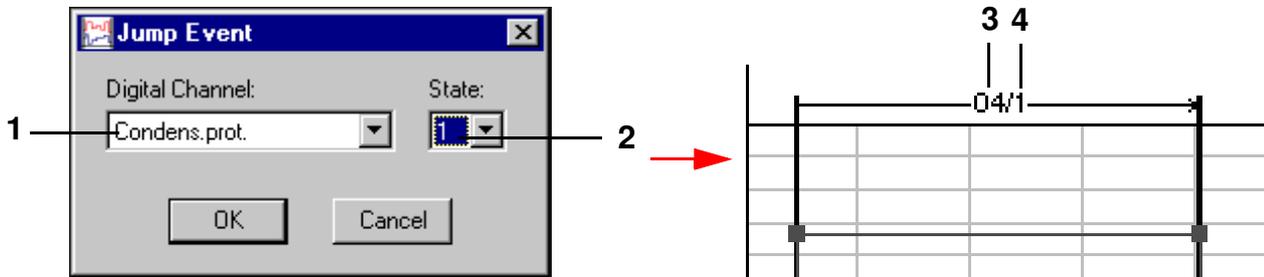
- Enter a short dwell time (1 – 60 sec. depending on the test program) between the loop end of the first loop and the loop start of the second loop. Otherwise the loop start of the second loop could be moved in front of the loop end of the first loop.

## Creating a test program with the graphical editor

**Jump**

A jump to the specified destination profile data point is implemented when the conditions specified here are met.

The second profile data point is specified by a single click with the left mouse button on the profile data point.

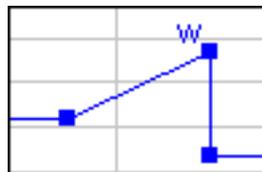


- 1 List box of all digital channels
- 2 Status of selected channel: 0 = channel inactive, 1 = channel active
- 3 Display of the channel number (*Pos. 1 Page 98*)
- 4 Status display (*Pos. 2 Page 98*)

Delete jump - double click with the left mouse button on the profile data point

**Wait**

If this function is active, the test program will only start again when the actual value is located within the given tolerance. The tolerance is set individually for each test program → *Tolerance (Page 95)*.

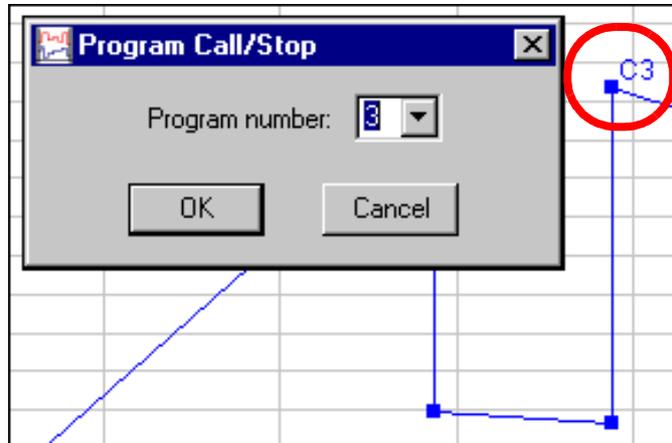


*Active Wait function*

**Call Program**

At this point, another test program (foreground or background program) can be started.

Defining a test program as a foreground/background program → [General profile settings \(Page 93\)](#)



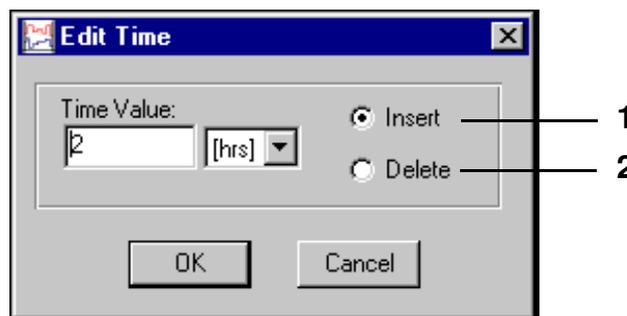
The profile data point is indicated by »C« and the test program no. This function is deactivated by clicking again on the function in the context menu.

**Stop program**

A program is to be stopped at this point. The profile data point is indicated by »S« and the test program no. This function is deactivated by clicking again on the function in the context menu.

**Edit time**

This function is used to extend ([Pos. 1 Page 99](#)) or shorten ([Pos. 2 Page 99](#)) the length of the test program.



The value entered relates to the side on the right of the selected profile data point.



## 9.4 Creating a test program for a shock chamber

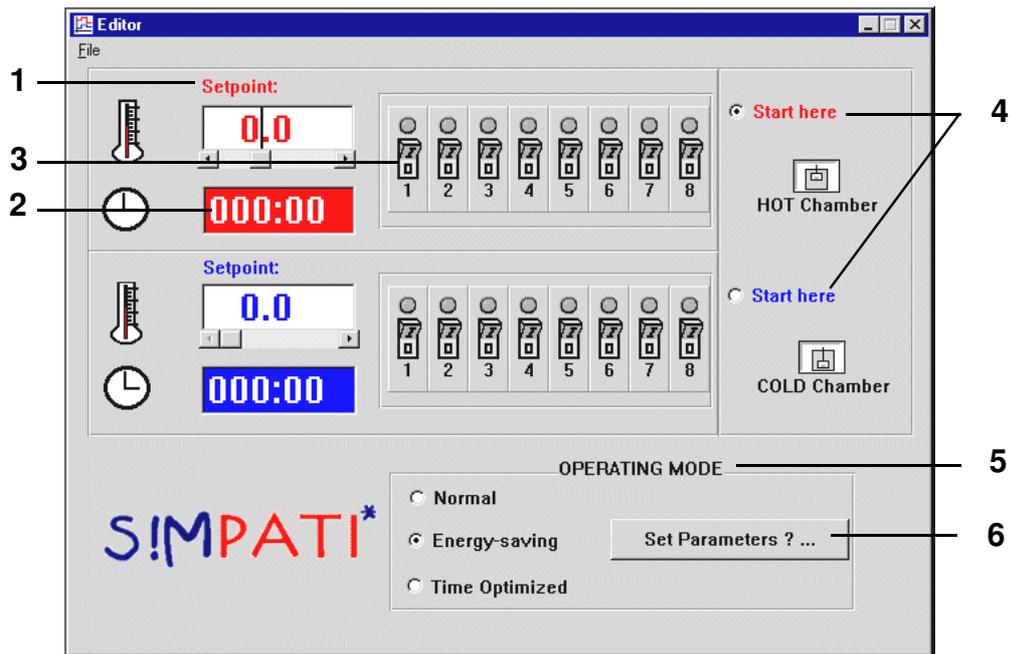
You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 12 Page 25 (»ShockTest Editor«)

### 9.4.1 Creating a test program for shock chambers with a DMR controller

The text editor for writing test programs for shock chambers with a DMR controller can only be called up when the controller is a DMR.

The test program is stored in two formats: as a \*.pxx (file for the graphical editor) and as a \*.cfg file (for the shock chamber editor). It is possible to display a program file created using the shock chamber editor in the graphical editor and further edit it.



- 1 The setpoints for the hot/cold chamber can be set directly via the keyboard or the scroll bar. If a value is entered that exceeds the range limits, it will be automatically reset to the upper or lower limit.
- 2 The clock time for the dwell time of the lifting basket in the hot or cold chamber is set using a formatted keyboard input (XXX:YY; X = hours, Y = minutes). Only hours and minutes are permitted up to a max. of 999 hours and 59 minutes. If a minute value greater than or equal to 60 is entered, it will be reset to 59 minutes on saving, i.e. invalid values will not be saved.
- 3 In addition to the chamber temperature and the chamber dwell time, up to eight customer outputs can be programmed. The status of the channels can be changed by simply clicking on the eight switch symbols for the hot/cold chambers.
- 4 In addition, a simple mouse click can decide whether the program start should occur in the hot or cold chamber.
- 5 Various operating modes can be selected. The following differences exist between the operating modes:

**Normal**

In normal mode, the desired setpoints for temperature are set and controlled.

To achieve a quicker temperature change of the test specimen when changing chambers, the chamber in which the lifting basket is not present can be pre-heated/cooled to a higher or lower setpoint (inactive setpoint). After the lifting basket has moved into the preheated or cooled chamber, the active setpoint is set once again.

The following window can be used to change the inactive setpoint, which is preset with +/-5 °C, by selecting the text field and inputting values directly from the keyboard.

**Energy-saving mode**

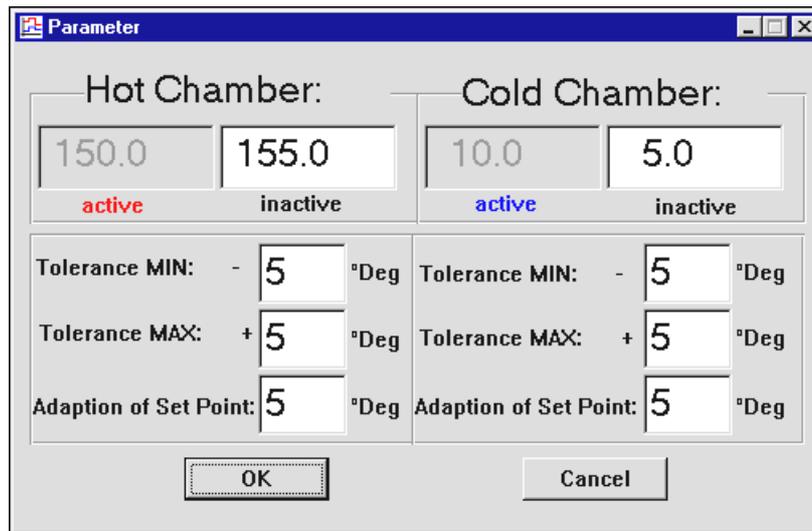
In the case of long cycle times, the temperature of the chamber in which the lifting basket is not present has a setpoint value of 23 °C.

Use the function [Pos. 6 Page 101](#) to enter a warm-up time; during this time, the active setpoint is set before the lifting basket is moved so that the 23 °C is overwritten.

**Time-optimised operation**

In time-optimised operation, it is possible to specify an inactive setpoint just as in normal operation; this means that the chamber in which the lifting basket is not located is preheated or cooled in this mode as well.

In time-optimised operation, the temperature change is further accelerated by specifying absolute setpoint adaptation for the active setpoint. This adapted setpoint is maintained until the temperature at the lifting basket temperature sensor reaches a definable tolerance range (absolute with respect to the active setpoint). Then the active setpoint is automatically adjusted. In this mode, it is guaranteed that the test sample remains in the chamber at the required setpoint for the entire dwell time (cycle time).



The inactive setpoint is entered in the same way as for normal operation. Error messages are also displayed here if incorrect entries are made.

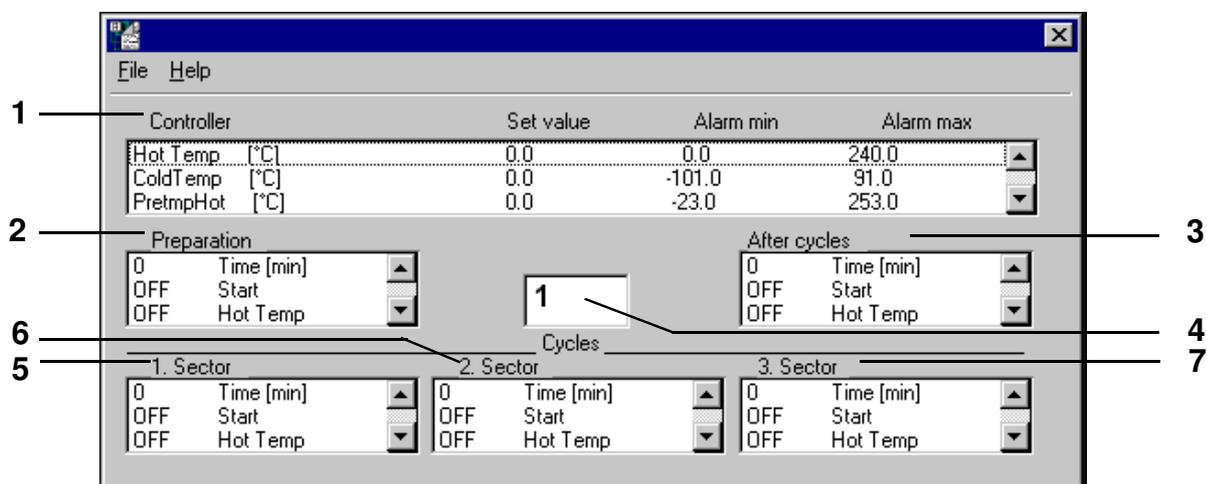
Example → [Appendix: Examples, 3. \(Page 8\)](#)

## Creating a test program for shock chambers with a CTC controller

## 9.4.2 Creating a test program for shock chambers with a CTC controller

Text editor for writing test programs for 2x and 3x shock chambers with a CTC controller. This test program can only be called up when the controller is a CTC and the configuration has the type set to 2x/3x shock chamber.

→ [Chamber configuration in SIMPATI \(Page 37\) Pos. 2](#)



The settings can be changed after double clicking on the corresponding line. A shock chamber test program is divided into three sub-test areas:

- Pre-conditioning (before the loop)
- Cycles (actual test program)
- Post-conditioning (after the loop)

After being saved, the test program can be checked or if necessary modified using the preview in the graphical editor (e.g. subsequent addition of Wait functions in the temperature profile of the cold/hot chamber) → [Wait \(Page 98\)](#)

## Description of the settings

- 1 List box of all control variables with setpoints and alarm limits.  
Double click on the corresponding line to open a window to modify the setpoints or alarm limits. The alarm limits should not be set too tight, as this can cause large short-term deviations in terms of the setpoints/actual values when the lifting basket is moved.
- 2 **Before the loop (pre-conditioning)**  
If necessary, the test sample can be brought to a defined starting temperature here before the actual test is initialised.  
  
Enter the status of the digital channels as required before the start of the loop execution (cycles). The status can be changed by double clicking on a channel name.  
The default time setting is 1 minute. The time can be changed by double clicking on Time [min] and entering the required time in the time input window. A minimum time entry of 1 minute is required for the test program to be executed correctly.

**3 After the loop (post-conditioning)**

If necessary, the test sample can be brought to a defined end temperature here after the cycles have been executed.

The status of the digital channels as required after the execution of all loops (cycles) must be entered here (e.g. 10 Min Defrost = ON).

The status can be changed by double clicking on the channel name.

The default time setting is also 1 minute. The time is set by double clicking on Time [min] and entering the required time in the time input window. A minimum time entry of 1 minute is required for the test program to be executed correctly.

- 4** The cycles programmed in each section are executed here at the corresponding temperatures. Enter the required number of cycles (number of loops).

**5 1st section**

Enter the dwell time for the particular chamber (e.g. hot chamber) and the status of the digital channels (e.g. Lifting Basket Up = ON) here.

The status can be changed by double clicking on the channel name. Set the time by double clicking on Time [min] and entering the required time in the time input box.

Assignment of a section to a specific chamber is executed via the digital channels Lifting Basket UP (hot chamber), Lifting Basket MIDDLE (middle chamber, in 3x shock chambers only), Lifting Basket DOWN (cold chamber). Only one of the three digital channels can be set in each section.

If the set cycle time is only to be executed when the setpoint/actual value deviation is within the Wait tolerances (+/- 5°K), use the graphical editor to enter a data point with the Wait function → [Wait \(Page 98\)](#) in the corresponding setpoint curve → [Appendix: Examples, 5. \(Page 10\)](#). It is useful in this case to only activate the WAIT function ca. 3 minutes after the lifting basket offset so that the temperature in the lifting basket (and therefore the actual value of the temperature) can match the new ambient temperature. If the dwell time is 0, the section is skipped.

**6 2nd section**

Set the dwell time for the corresponding chamber (e.g. middle chamber) and the status of the digital channels here (e.g. Lifting Basket MIDDLE = ON).

The status can be changed by double clicking on the channel name. Set the time by double clicking on Time [min] and entering the required time in the time input box.

Assignment of a section to a specific chamber is executed via the digital channels Lifting Basket UP (hot chamber), Lifting Basket MIDDLE (middle chamber, in 3x shock chambers only), Lifting Basket DOWN (cold chamber). Only one of the three digital channels can be set in each section.

If the set cycle time is only to be executed when the setpoint/actual value deviation is within the Wait tolerances (+/- 5°K), use the graphical editor to enter a data point with the Wait function in the corresponding setpoint curve → [Appendix: Examples, 5. \(Page 10\)](#). It is useful in this case to only activate the WAIT function ca. 3 minutes after the lifting basket offset so that the temperature in the lifting basket (and therefore the actual value of the temperature) can match the new ambient temperature.

If the dwell time is 0, the section is skipped.

## 7 3rd section

Section 3 is only required for the 3x shock chamber.

In this chamber, the hot chamber is programmed in section 1, the middle chamber in section 2 and the cold chamber in the section 3.

Set the dwell time for the corresponding chamber (e.g. cold chamber in the 3x shock chamber) and the status of the digital channels here (e.g. Lifting Basket DOWN = ON).

The status can be changed by double clicking on the channel name. Set the time by double clicking on Time [min] and entering the required time in the time input box.

Assignment of a section to a specific chamber is executed via the digital channels Lifting Basket UP (hot chamber), Lifting Basket MIDDLE (middle chamber), Lifting Basket DOWN (cold chamber). Only one of the three digital channels can be set in each section.

If the set cycle time is only to be executed when the setpoint/actual value deviation is within the Wait tolerances ( $\pm 5^{\circ}\text{K}$ ), use the graphical editor to enter a data point with the Wait function in the corresponding setpoint curve → [Appendix: Examples, 5. \(Page 10\)](#). It is useful in this case to only activate the WAIT function ca. 3 minutes after the lifting basket offset so that the temperature in the lifting basket (and therefore the actual value of the temperature) can match the new ambient temperature. If the dwell time is 0, the section is skipped.

### A) The menu function »File«

#### New

Enter a new test program name.

#### Open

Open a test program. If it is not a shock test program, this program will be treated as if it is a shock test program (before the loop, section 1, section 2, ....., after the loop).

#### Save / Save As

Save the input shock test program under the current name. The DMR format is used as the save format.

If a test program is saved in which section 2 is skipped with a dwell time of 0, then section 3 (if this has been programmed) is automatically assigned to section 2 when the program is opened again. This also applies when using »Save As«.

#### Print

Print out the test program.

**Example program** → [Appendix: Examples, 5. \(Page 10\)](#)

9.4.3 Creating a test program for shock chambers with a Simcon or Simpac controller

Editor for creating test programs for shock chambers with a Simcon or Simpac controller.

The programming for shock chambers with 2 or 3 chambers differs only in that the middle chamber is not displayed for 2-chamber shock chambers.

The test program is stored in two formats:

as a \*.pxx (file for the graphical editor) and as a \*.bxx file (for the shock chamber editor).

It is possible to display a program file created using the shock chamber editor in the graphical editor and further edit it. The test programs modified in the graphical editor can be imported back into the shock chamber editor.



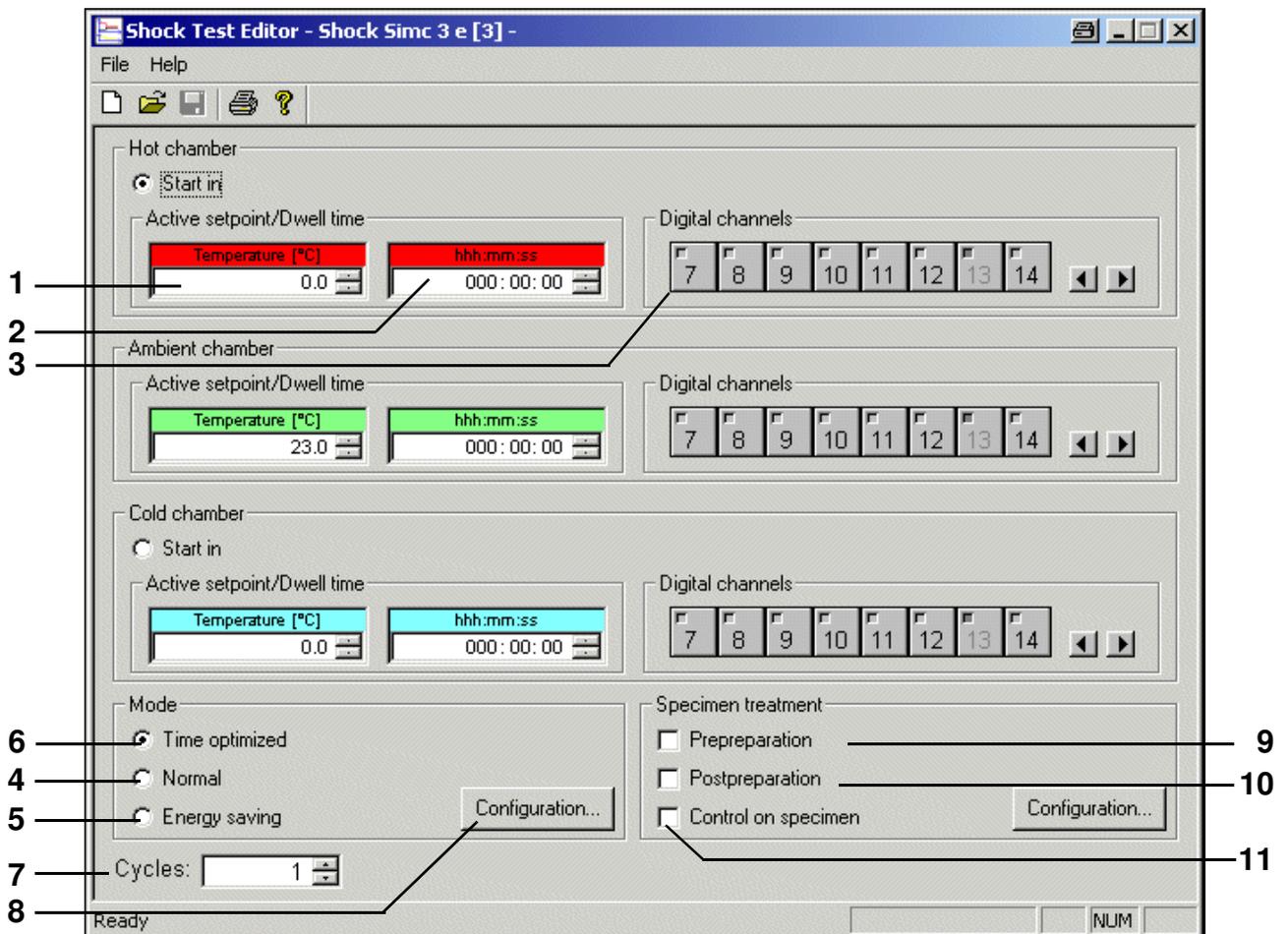
NOTE

When programming with SIMPATI, care must be taken that a target value of at least 15 minutes is set for control value 3 "Max. temperature adjustment time". If the control value is not programmed (target value = 0) this leads immediately after the program starts to error message "A031: Wait function time exceeded". → Appendix: Operation of a type TS 130 shock chamber with SIMCON/32 controller under the SIMPATI software package



NOTE

Please ensure that the type is set to a 2x or 3x shock chamber in the chamber configuration (→ Chamber configuration in SIMPATI (Page 37), Pos. 2 .



Shock chamber editor (Simcon, Simpac)

Schockschrank Editor.fm  
en 08.2011 / Version 4.06

- 1 The test takes place at the temperature entered here. If a setpoint is entered which exceeds the range limits, it is automatically reset to the upper or lower limit.
- 2 If the chamber has reached the configured setpoint, the lifting basket remains in this chamber for the period of time entered here.
- 3 The status of the digital channels can be changed by clicking once on the switch symbols for the digital channels. Digital channels which appear inactive (light grey) are set indirectly, i.e. via other menu windows.

### 3-chamber shock chamber

After the dwell time has passed once in each chamber, the cycle ends in the middle chamber if more cycles are to be processed. If this is not the case, the lifting basket moves into the hot chamber provided nothing else has been specified for the end chamber in the menu window »*Specimen treatment*« (Page 112).

### Operating mode

Various operating modes can be selected. The differences described below exist between the operating modes:

#### Inactive setpoint (Pos. A Page 109, → Page 110, → Page 111)

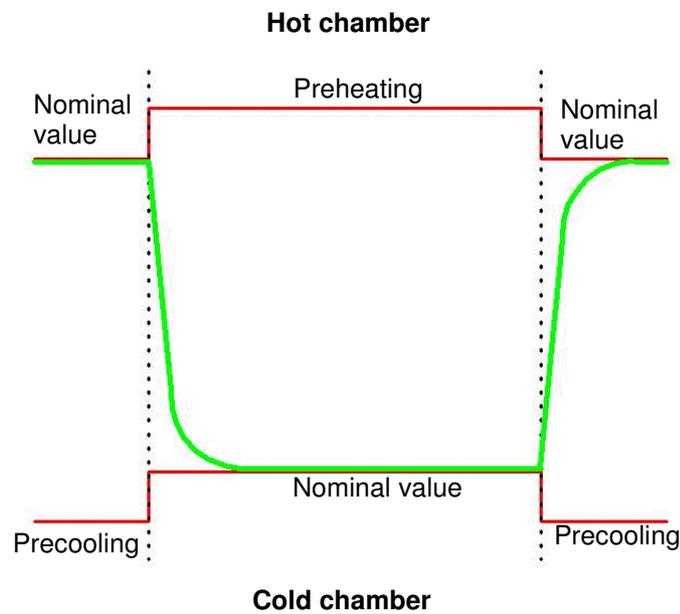
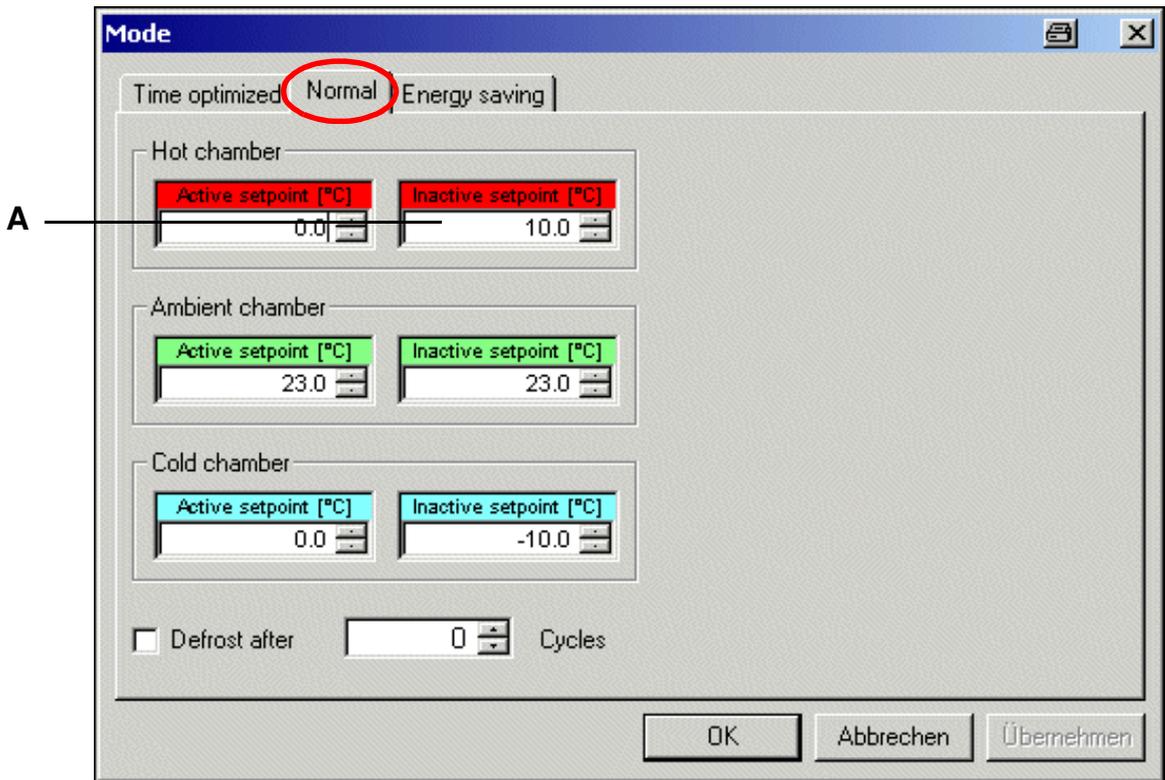
To achieve a quicker temperature change of the test piece when changing chambers, the chamber in which the lifting basket is not present can be pre-heated/cooled to a higher or lower setpoint (inactive setpoint). After the lifting basket has moved into the preheated or cooled chamber, the active setpoint is set once again. The inactive setpoint depends on the selected mode.

- 4 In normal operation, the desired temperature setpoints are set and controlled regardless of the position of the lifting basket.
- 5 For long cycle times, the temperature of the chamber in which the lifting basket is not located is not controlled.
- 6 In time-optimised operation, it is possible to specify an inactive setpoint just as in normal operation; this means that the chamber in which the lifting basket is not located is preheated or cooled in this mode as well.

In time-optimised operation, the temperature change is further accelerated by specifying absolute setpoint adaptation for the active setpoint. This adapted setpoint is maintained until the temperature at the lifting basket temperature sensor reaches a definable tolerance range (absolute with respect to the active setpoint). Then the active setpoint is automatically adjusted. In this mode, it is guaranteed that the test sample remains in the chamber at the required setpoint for the entire dwell time.

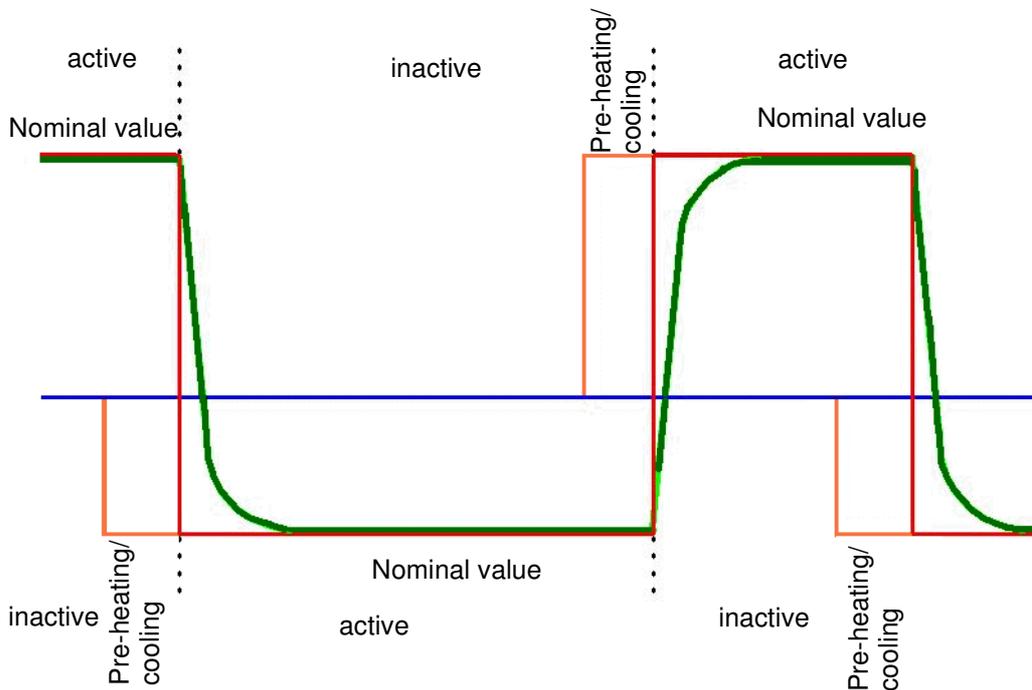
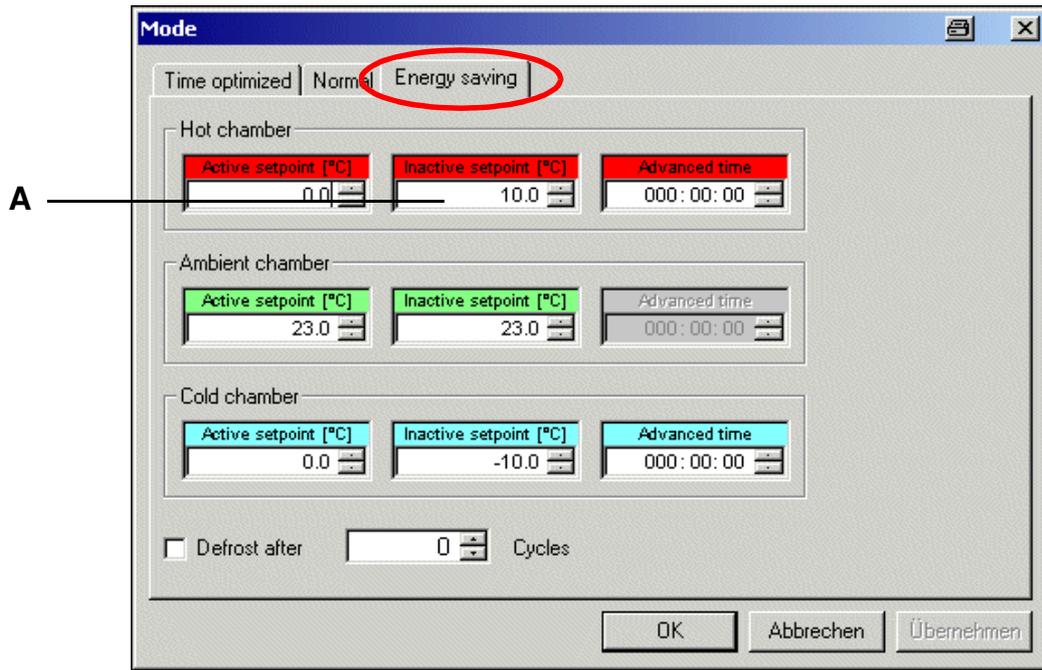
- 7 The desired number of chamber changes is specified.  
Once the number of cycles has been processed, the lifting basket automatically moves into the hot chamber.
- 8 Configuration of the selected operating mode → "*Normal*" operating mode (Page 109), → "*Energy-saving*" operating mode (Page 110), → "*Time-optimised*" operating mode (Page 111)

"Normal" operating mode



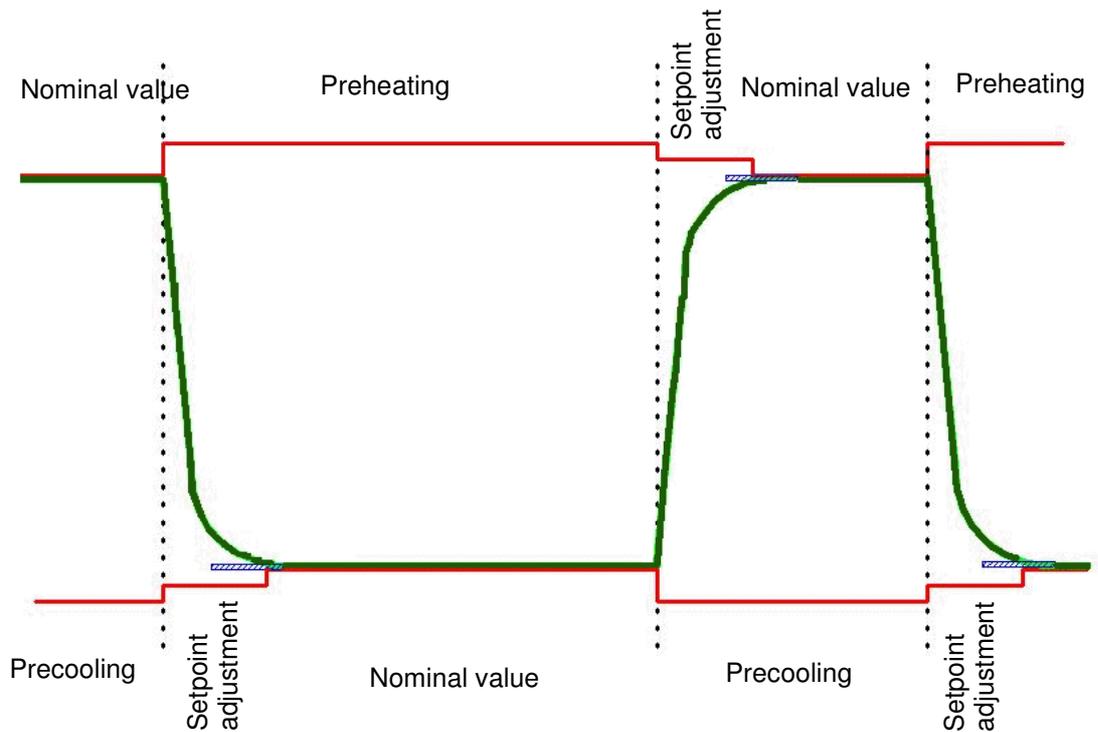
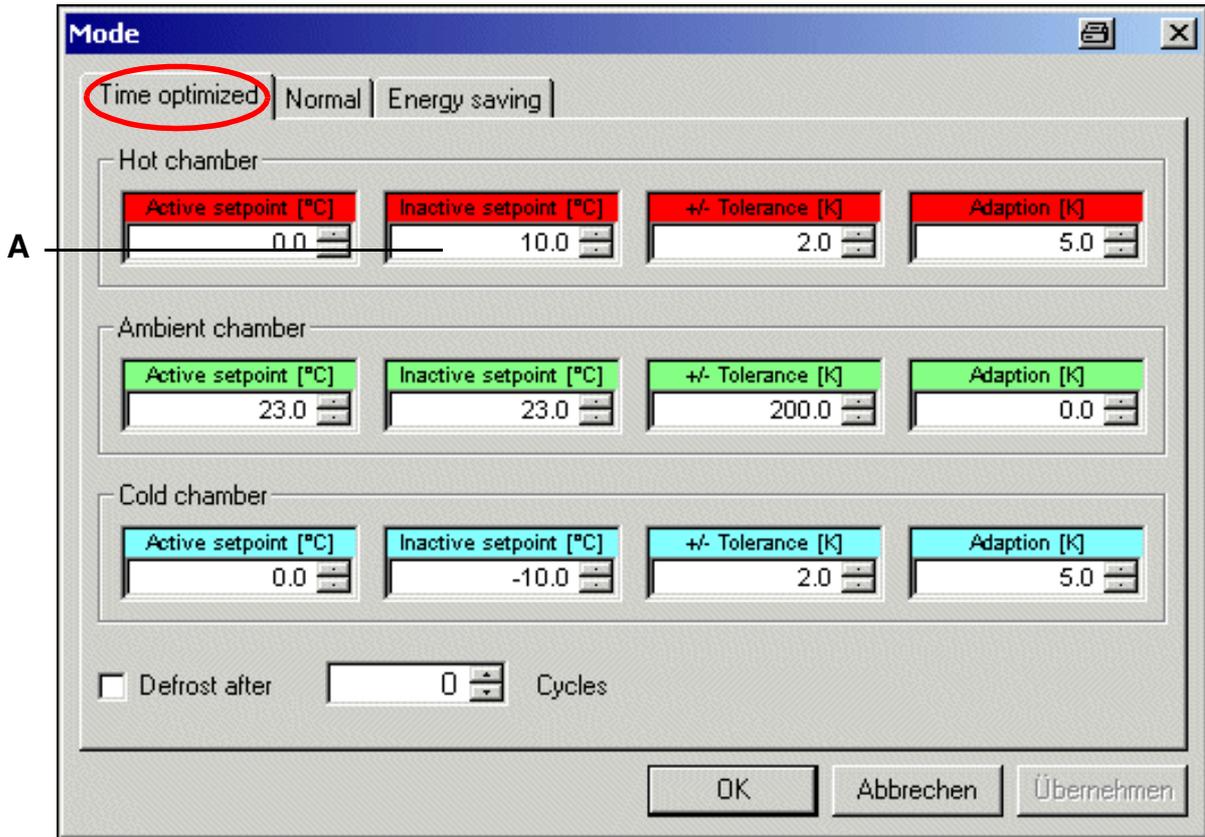
Normal mode

"Energy-saving" operating mode



Energy-saving mode

"Time-optimised" operating mode



Time-optimised operation

**Specimen treatment**

- 9 The test sample may exhibit a significant temperature difference with respect to the configured setpoint for this chamber after entrance of the lifting basket. In order to compensate for this, the temperature of the test sample is pre-adjusted before the dwell time begins.
- 10 After completion of a test sample, the test sample temperature is changed as desired, for instance, to prevent burns during test sample removal.
- 11 The active setpoint is controlled via the temperature sensor in the test sample.

You can define in which chamber the test should start and end.

For the end of the test, please read the note on [Pos. 7 Page 107](#) → [Page 108](#)

## 10 Test program transfer between the chamber and SIMPATI

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 13 Page 25

In order to be able to start a test program, the test program must be saved in the chamber controller. If it has not already been saved in the chamber controller at the factory, this therefore means that you will need to copy the program to the chamber controller.



### NOTE

If you use the function

→ Starting/stopping a test program, Page 115 to start a test program, then you can also copy the program from the PC to the chamber there.

### 10.1 Loading test programs from SIMPATI to the chamber controller



Test program downloading

- 1 All of the test programs saved in the above directory (specifying a directory → Chamber configuration in SIMPATI, Page 37) will appear in this list
- 2 If you have not saved a test program in the directory Pos. 1, select the directory here and then select the corresponding test program name via the program list Pos. 1
- 3 Select the program location in the chamber controller



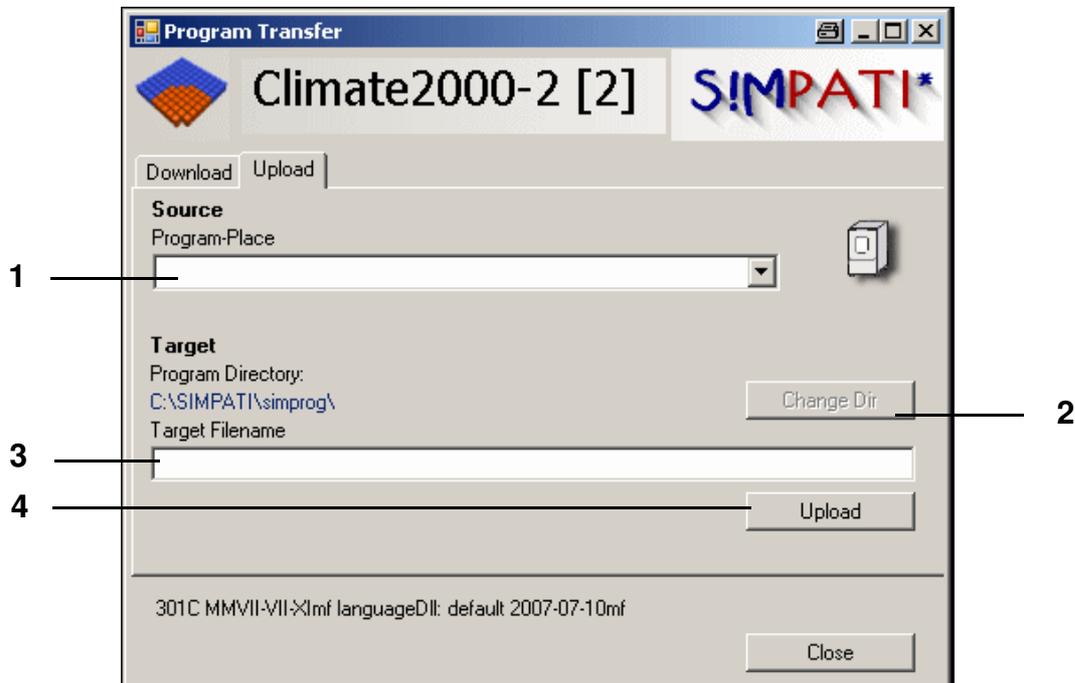
### CAUTION

Existing test programs will be overwritten after confirmation of a warning message.

- 4 Transfer the test program to the chamber controller.

## 10.2 Loading test programs from the chamber controller and saving them in SIMPATI

To load the new test program into the chamber controller in order to be able to start the test program, please make sure that you select a free program location to prevent test programs from being overwritten in the chamber controller.



*Test program upload*

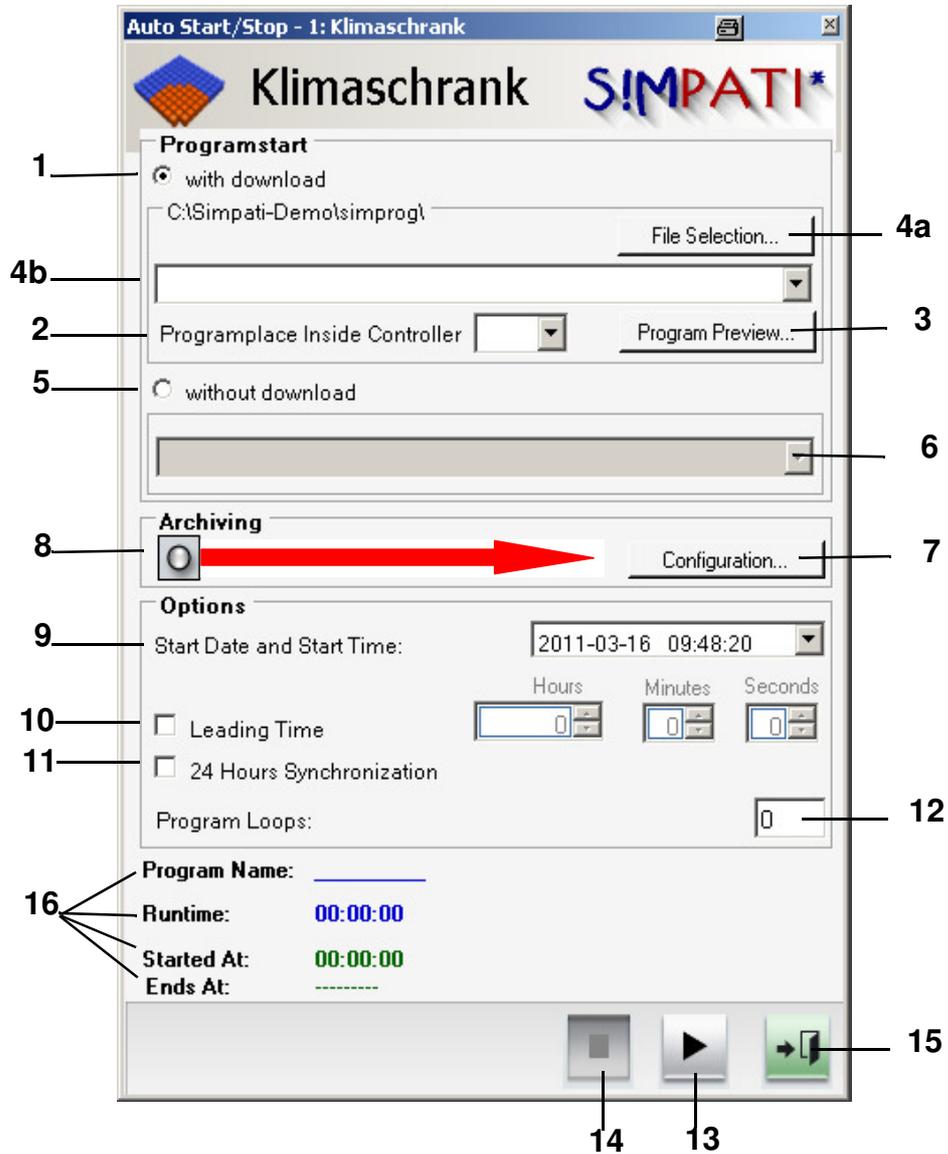
- 1 All of the test programs saved in the chamber controller (up to program location 100) are listed.
- 2 If the test program is not to be saved in this directory (see left in the diagram, specify directory → [Chamber configuration in SIMPATI, Page 37](#)), then you can choose a different directory here.
- 3 Save the test program in the directory *Pos. 2*. Do not enter a suffix for the file name. SIMPATI will warn you if a file with this name already exists.
- 4 Saving a test program

## 11 Starting/stopping a test program

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 10 Page 25

This function is used to set the start and stop for a test program.



Starting/stopping a test program

If you have not yet uploaded the current test program version to the controller of the chamber, then you can do this at the start of the test via the function described in [Pos. 1](#). The [Test program downloading \(Page 113\)](#) is then no longer required.

**1 With program upload**

The test program is uploaded from the PC to the controller, where it is then started.

**2** Program number in the controller; the test program is uploaded to this program location.

**3** Graphical program preview of the selected test program

**4a** Selection of the path in which the test program is located.

**4b** Select test program.

**5** Without program upload

The test program saved in the chamber controller is started. Program uploads stop at this point.

**6** Select the test program which is to be started from the chamber controller.

**7** Changing archiving settings, description → [Archiving \(Page 133\)](#).

**8** Archive name, as specified under [Pos. 8](#) (the start date is used if no name is specified).

**9** Start date and time of the test program

If the day entered is in the past, the test program is started immediately.

If the time entered is in the past, the test program is started immediately.

**10** Enter a program advance time. The program will not be processed from the start, but only beginning with the time input.

**11** Start with 24 hours synchronisation

The requirement for this function is that both the test program to be started as well as the loop, foreground, and background programs have a length of 24 hours.

If this function has been activated, the test program advances up to the current time; only then is it started, and it runs parallel to the current time.

→ [Appendix: Examples, 4. Example of a test program with program advance \(Page 9\)](#)

**12** Number of loops

The number of the start line from which the program is to be started can be specified for a MOPS, CTC or TC controller.

**NOTE**

*If the program start occurs in a line after the loop start, it will not be taken into account.*

**13** The test program is started. Before starting the test program, make sure that the adjustable temperature limiter of the chamber is set to a suitable temperature for your test sample. The test program can also be interrupted or continued with this button. These functions are only available for certain controllers, however.

**14** The test program is stopped.

**15** Close the menu window, the test program will continue to run.

**16** Display of the running program with program name, running time, start and end time.

## 12 The Planner (Scheduler)

You can access the menu via the context menu of the relevant chamber.

→ *SIMPATI main menu Pos. 19 Page 25*

### Scheduler start

Scheduler consists of two components:

1. **Simscheduling.exe**: carries out the event processing. The file Simpati.STR must be adapted as follows to activate event processing:

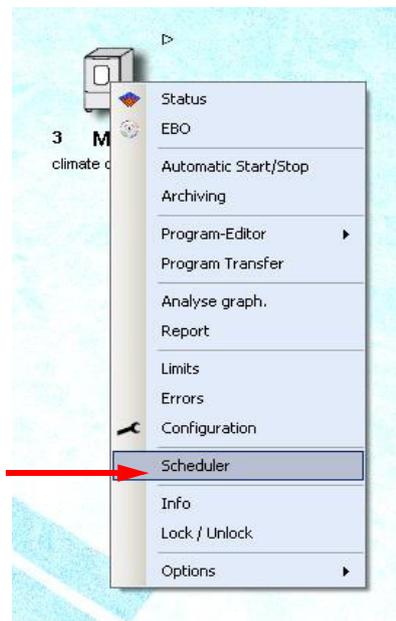
50:01: simscheduling::



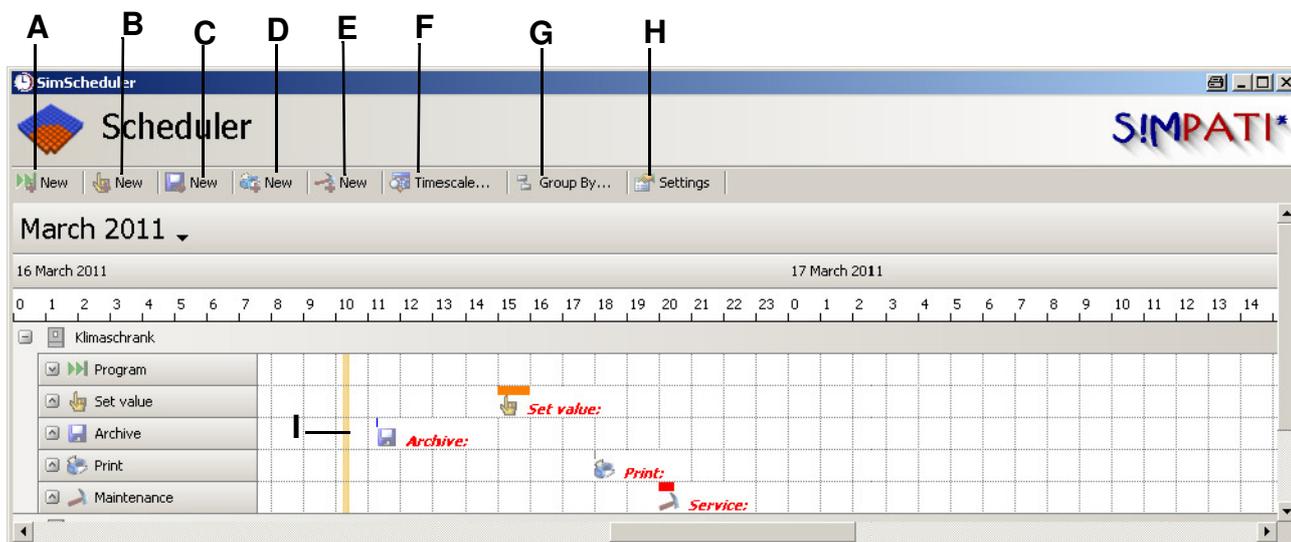
#### NOTE

If SimScheduling has not been started, the pre-programmed events will be displayed in the interface, but not executed.

2. **SimScheduler.exe**: interface in which the events are displayed, created and edited. The interface is opened via the chamber context menu.



## 12.1 Overview of planning sequences



This function is used to plan events.

- A. Starting and stopping programs → [A\) Program \(Page 120\)](#)
- B. Setting and changing values → [B. Setting and changing values \(Page 121\)](#)
- C. Starting and stopping archiving → [C\) Archiving \(Page 122\)](#)
- D. Printing files → [D\) Printing \(Page 124\)](#)
- E. Planning maintenance → [E\) Maintenance \(Page 125\)](#)

**Events can alternatively be created by double-clicking on the interface. The starting time corresponds to the time clicked on the time scale. The type of event corresponds to the category or line that is clicked. For example, setting program or value, etc.**

Settings can be made with this function.

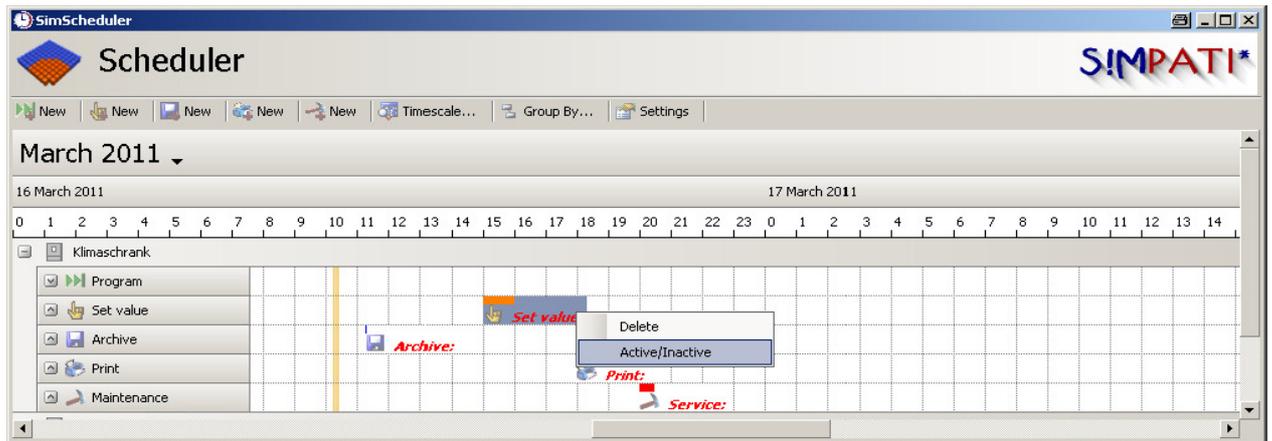
- F. Interface display setting (time scale) → [F\) Time scale \(Page 131\)](#)
- G. Possibilities for sorting events



### NOTE

*It is only possible to create and edit events in standard sorting (system number → event type).*

- H. Interface display setting Planner(Scheduler)
- I. Current time



Right-clicking on the event bar offers the following options:

- Delete event
- Set active/inactive



For repeat events, the selected event or all event repetitions are either deleted or set active/inactive.

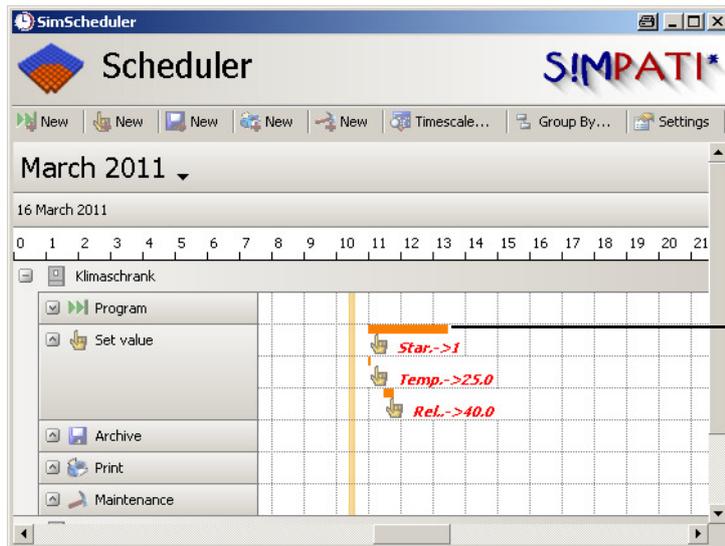
## A) Program

- 1 New program event is added to the Planner
- 2 Description of the event
- 3 Date/time setting for starting a program
- 4 Date/time setting for stopping a program
- 5 Select desired system for the event
- 6) Activate the possibility of inputting the ending time (item 4): the program can be stopped after a predetermined time.  
If this box is clicked, the ending time can be specified by the user.  
Otherwise, the event duration corresponds to the length of the program and is automatically determined.
- 7 Delete the event from the Scheduler
- J Set up reminder option for the event → [J\) Reminder \(Page 126\)](#)
- K Define repetitions of the event → [K\) Event repeats \(Page 127\)](#)
- 10 Activate/deactivate the event
- 11 Name of the program
- 12 Program slot in the system

**NOTE**

**IMPORTANT!** Inactive events are not executed!

**B. Setting and changing values**



Sperrdauer

The event "Set value" has a default duration of 5 seconds. It is possible to specify a longer duration, however (see Figure 1).

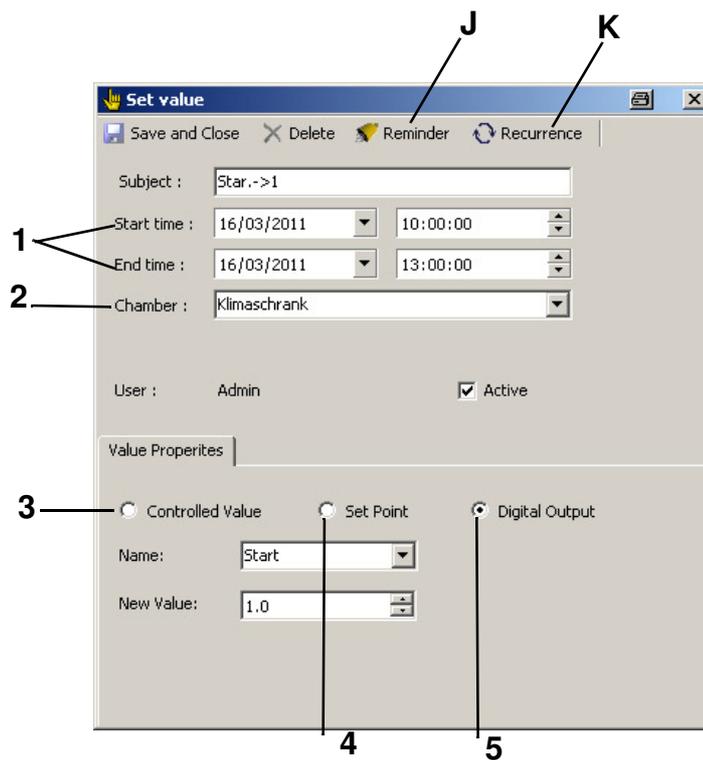
**The objective of this action is:**

- To disable operation of the system in Simpati during this period of time, in order to guarantee that the set value is "held" in this time.
- To disable starting a program or maintenance during this period of time in Scheduler; it is impossible to create an event in this period of time. Archiving and printing can still be performed.
- Additional values can be set during this period as in manual mode (see figure) without re-enabling the system temporarily.

Example in Figure 1

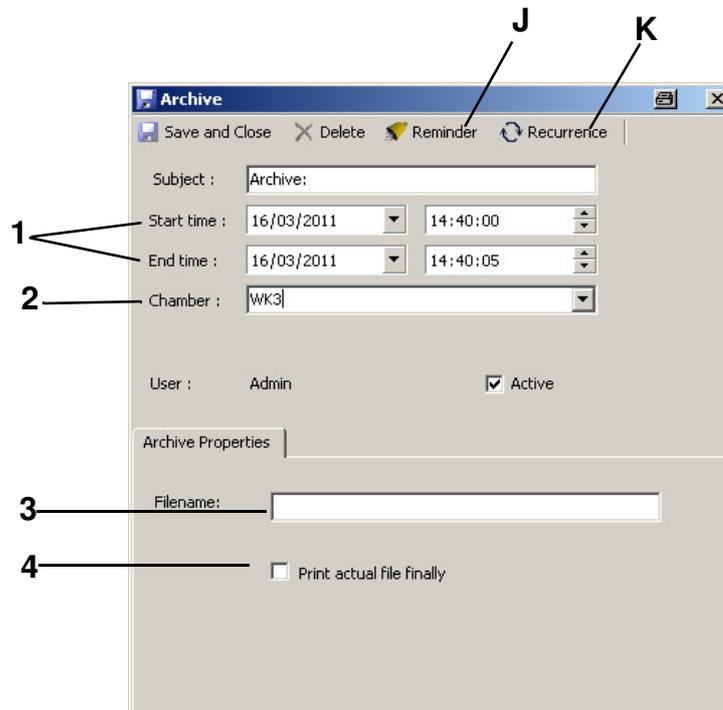
The following sequence is pre-programmed:

- **10:00:00:** Start channel is set to "1" and "held" for 3 hours (see Figure 2).  
Due to this event, operation of the system is disabled from 10:00 to 13:00.
- **10:00:05:** Temperature set to "40 °C".
- **11:00:00:** Rel. humidity is set to "60%".  
The system continues to run with these values until 13:00.
- **13:00:00:** Starting channel set to "0".  
After the starting channel has been set to "0", the system is re-enabled and can be operated.



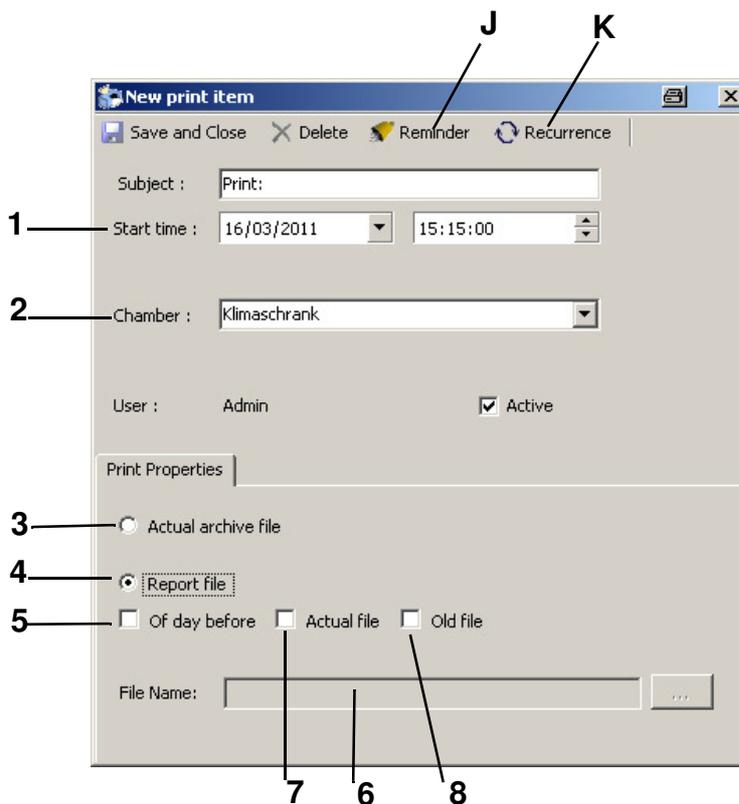
- 1 Date/time setting for setting a value
  - 2 Select desired system
  - 3 A control variable is modified
  - 4 A control value is modified
  - 5 A digital output is modified
- J Set up reminder option for the event → *J) Reminder (Page 126)*
- K Define repetitions of the event → *K) Event repeats (Page 127)*

### C) Archiving



- 1 Date/time setting for starting or stopping archiving
- 2 Select desired system
- 3 Input desired file name for the archive
- 4 Print the current archive after conclusion of archiving
- J Set up reminder option for the event → [J\) Reminder \(Page 126\)](#)
- K Define repetitions of the event → [K\) Event repeats \(Page 127\)](#)

## D) Printing



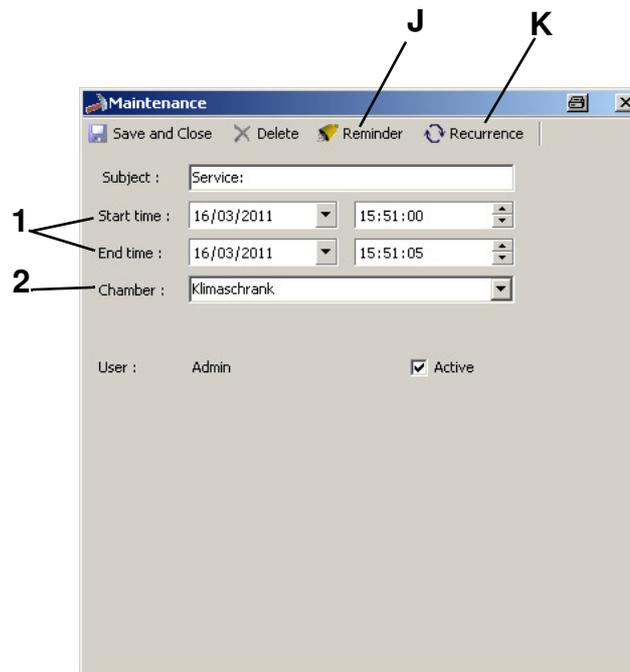
## NOTE

The default printer configured on the SIMPATI PC with its setting (e.g., landscape format) is used for printing the message and archive files. A colour printer with the set landscape format is recommended for printing the archive file. To ensure that the print event is carried out on the selected printer, a test print of an archive should be made via the command line call in the Simpati system directory.

`simkoord.exe /PRINT [complete path to an existing archive file]`

- 1 Date/time event for starting a print event.
- 2 Select desired system
- 3 Print current archive file
- 4 Print an archive file
- 5 Archive file from previous day
- 6 Name of the file to be printed (Is automatically selected. If an old archive file is specified, it must be searched by the user.)
- 7 Current archive file
- 8 Old archive file
- J Set up reminder option for the event → [J\) Reminder \(Page 126\)](#)
- K Define repetitions of the event → [K\) Event repeats \(Page 127\)](#)

**E) Maintenance**



**NOTE**

*When the Maintenance event is added, no other events can be planned during the entire maintenance period.*

- 1 Date/time setting for starting or stopping maintenance
- 2 Select desired system
- J Set up reminder option for the event → [J\) Reminder \(Page 126\)](#)
- K Define repetitions of the event → [K\) Event repeats \(Page 127\)](#)

**J) Reminder**

The screenshot shows a dialog box titled "ReminderForm" with the following elements:

- 1**: Points to the "Time span (min):" dropdown menu, which is set to "10 minutes before".
- 2**: Points to the "Text:" text area, which contains "Chamber 1: Archive:".
- 3**: Points to the "Screen reminder" checkbox, which is checked.
- 4**: Points to the "E-Mail" checkbox, which is checked.
- 4a**: Points to the "To:" text field, which contains "mustermann@mustermann.com".
- 5**: Points to the "Sound reminder" checkbox, which is checked.
- 6**: Points to the "Sound-File:" text field, which is empty, and the browse button ("...") to its right.

At the bottom of the dialog box are "OK" and "Cancel" buttons.

1 Time interval of the reminder

XX min/h in advance: The reminder happens before the start of the event  
(e.g., 5 min before program start-up).

XX min/h afterward: The reminder happens after the event  
(e.g., 10 min after end of archiving).

0 min/h afterward: The reminder happens simultaneously with the end of the event.

2 Base text of the reminder

3 Notification on the screen

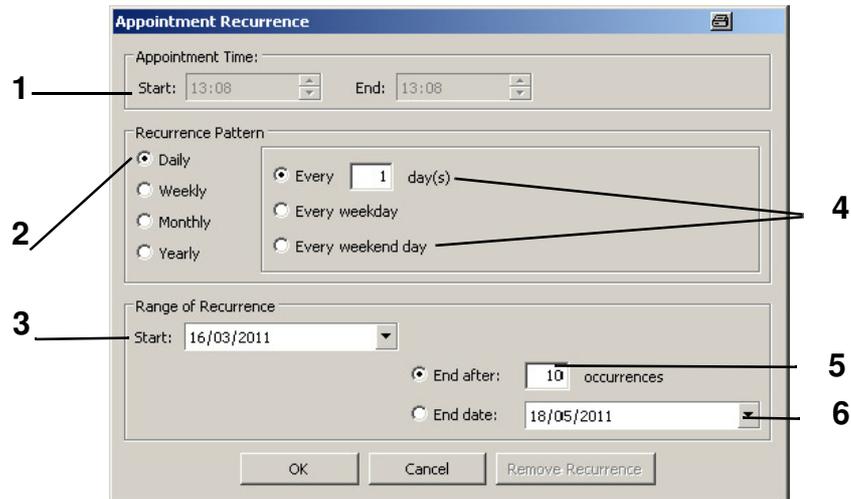
4 Notification via e-mail

4a Input complete e-mail address (this appears automatically if an e-mail address has already been configured in the Scheduler)

5 Notification via sound

6 Selection of a \*.wav file for the sound reminder

**K) Event repeats**  
**Daily**



*Mask: daily*

- 1 Starting and stopping time
- 2 Type of repeat
- 3 Starting date
- 4 Repeat for every X. Day/days possible
- 5 Number of repeats total
- 6 Date until when the event will be repeated

## Weekly

The screenshot shows the 'Appointment Recurrence' dialog box. It is divided into three main sections:

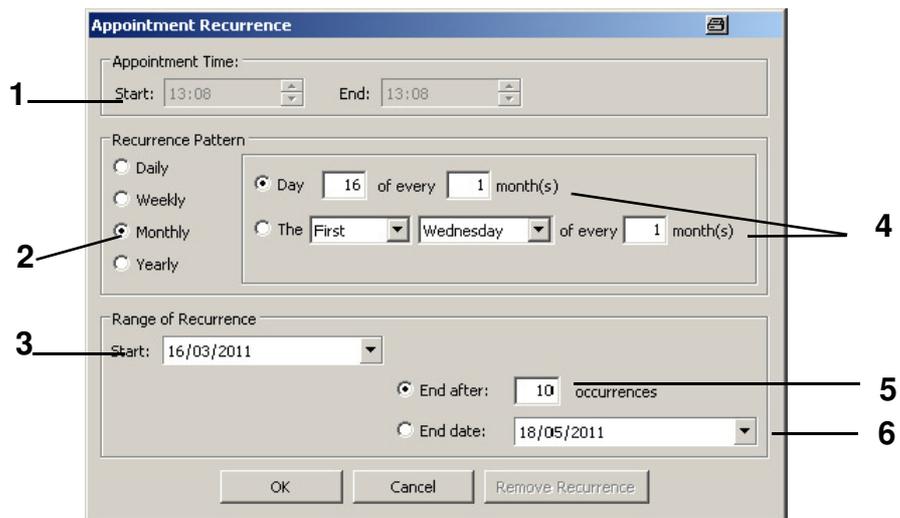
- Appointment Time:** Contains 'Start' and 'End' time pickers, both set to 13:08. Callout 1 points to the Start time.
- Recurrence Pattern:** Contains radio buttons for 'Daily', 'Weekly', 'Monthly', and 'Yearly'. The 'Weekly' option is selected. Callout 2 points to the 'Weekly' radio button. To the right, there is a section for 'Recurr every' (set to 1) and 'week(s) on:'. Below this are checkboxes for days of the week: Sunday, Monday (checked), Tuesday, Wednesday (checked), Thursday, Friday, and Saturday. Callout 4 points to the checked days.
- Range of Recurrence:** Contains a 'Start' date picker set to 16/03/2011. Callout 3 points to the Start date. Below this are two options for ending the recurrence: 'End after: 10 occurrences' (selected) and 'End date: 18/05/2011'. Callout 5 points to the '10 occurrences' field, and callout 6 points to the 'End date' field.

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Remove Recurrence'.

*Mask: weekly*

- 1 Starting and stopping time
- 2 Type of repeat
- 3 Starting date
- 4 Repeats for every X. Week and any desired day/days possible
- 5 Number of repeats total
- 6 Date until when the event will be repeated

Monthly



Mask: monthly

- 1 Starting and stopping time
- 2 Type of repeat
- 3 Starting date
- 4 Repeats for every X. Month and any desired day/days possible
- 5 Number of repeats total
- 6 Date until when the event will be repeated

**Annually**

The screenshot shows the 'Appointment Recurrence' dialog box with the following fields and callouts:

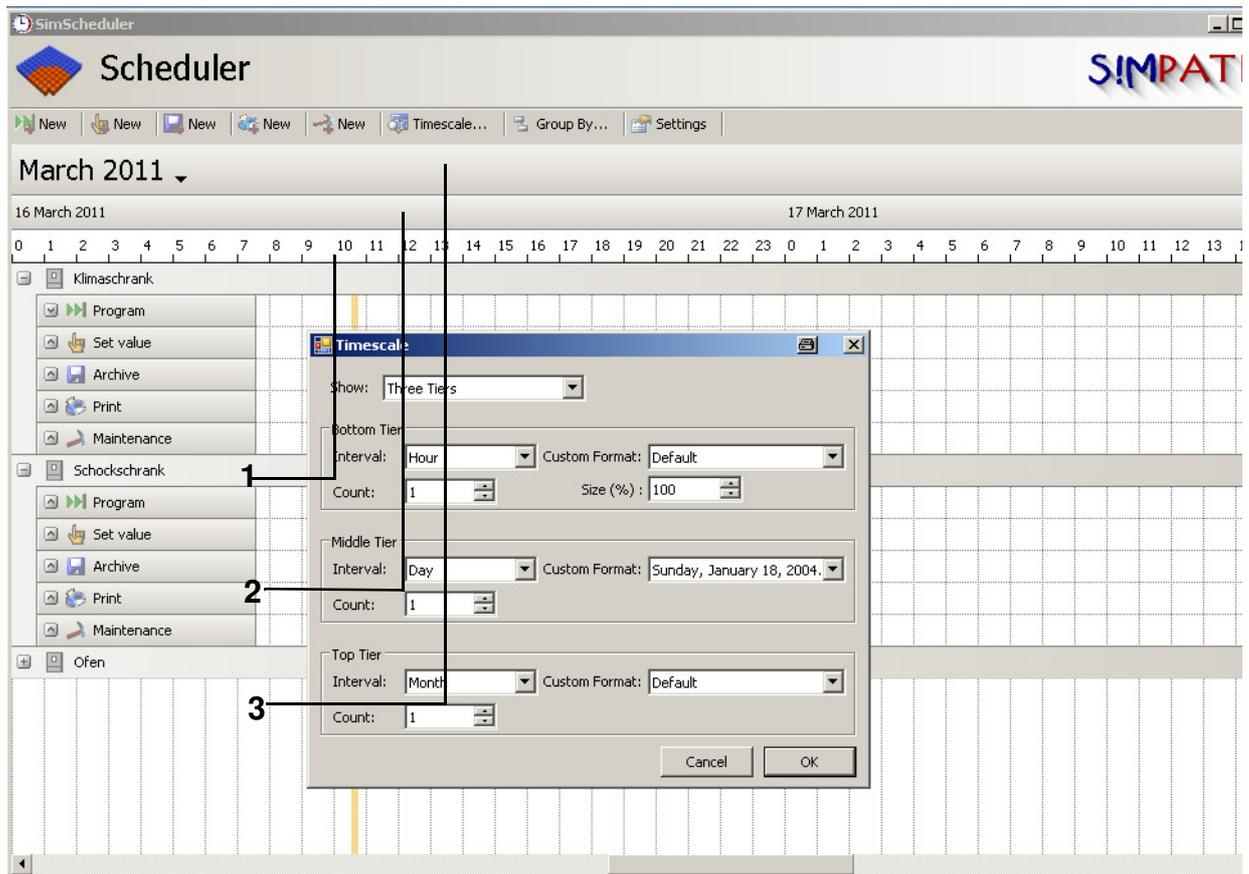
- 1**: Points to the 'Appointment Time' section, specifically the 'Start' and 'End' time pickers, both set to 13:08.
- 2**: Points to the 'Recurrence Pattern' section, where the 'Yearly' radio button is selected.
- 3**: Points to the 'Range of Recurrence' section, specifically the 'Start' date picker set to 16/03/2011.
- 4**: Points to the 'Every' section in the recurrence pattern, where 'March' is selected in the month dropdown and '16' is entered in the day field.
- 5**: Points to the 'End after' section, where the radio button is selected and the value '10' is entered in the occurrences field.
- 6**: Points to the 'End date' section, where the radio button is unselected and the date '18/05/2011' is entered in the date picker.

Buttons at the bottom include 'OK', 'Cancel', and 'Remove Recurrence'.

*Mask: annual*

- 1 Starting and stopping time
- 2 Type of repeat
- 3 Starting date
- 4 Repeats for a given date in the year are possible
- 5 Number of repeats total
- 6 Date until when the event will be repeated

F) Time scale



The time scale is subdivided into 3 layers.

- 1 Lower layer Can be set to various time intervals.
- 2 Middle layer Can be set to various time intervals.
- 3 Upper layer Can be set to various time intervals.

## H) Configuration of the e-mail settings

Format TimeLine View: [X]

General Settings | Mail settings | WorkWeek | Fonts

1 — Server: notesweiss Port 97

2 — Name: Scheduler

3 — From: mustermann@mustermann.com

To: mustermann@mustermann.com

4 — Subject: Scheduler message

5 — User: Password:

OK Cancel

- 1 Input server
- 2 Name of sender
- 3 E-mail address of sender and recipient
- 4 E-mail subject
- 5 User name and password of sender if authentication is necessary at the SMTP server. Otherwise the fields remain empty.

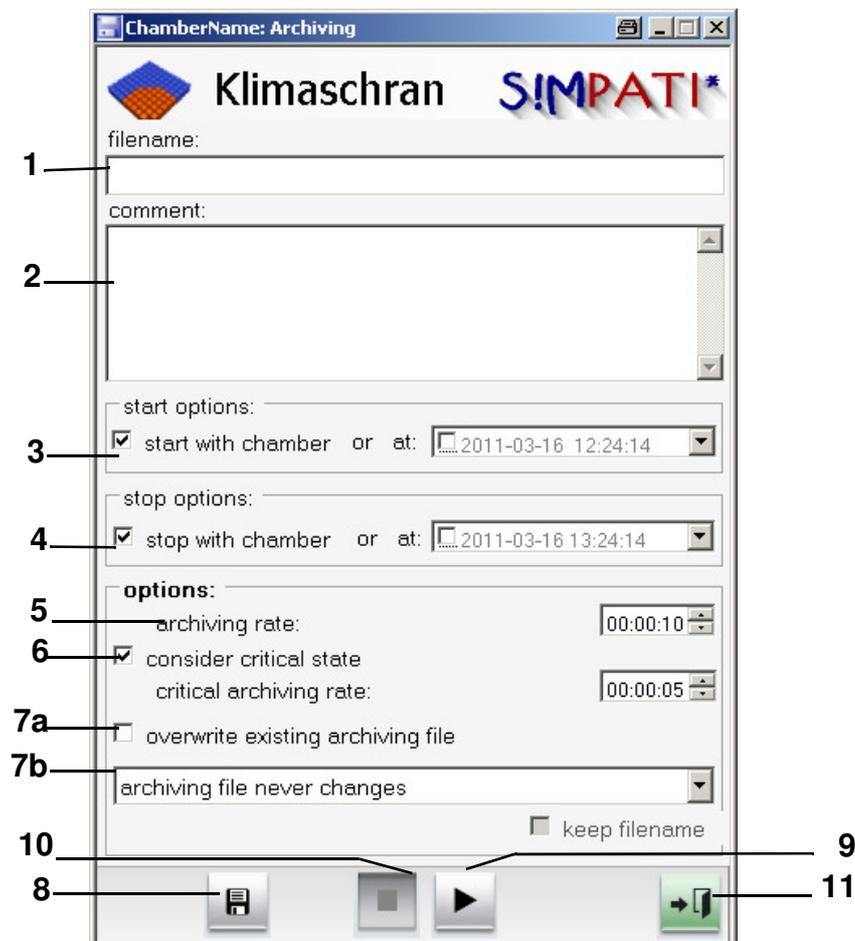
## 13 Archiving, recording and evaluation of a test

### 13.1 Archiving

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 11 Page 25

This function is used to save the test procedure.



Archiving

- 1 Archive name – if no archive name is input, an archive name will be automatically issued (current date)
- 2 Comments on recordings (appears in the graphic evaluation)
- 3 Time date for starting the recording or the recording begins at the start of the test.
- 4 Time date for stopping the recording or the recording stops at the end of the test.
- 5 The status of the chamber is recorded at these intervals  
Since the archiving module in the standard version operates with a 5 second rhythm, only values of 5 sec or a multiple of 5 sec make sense.  
Shorter archiving cycles are only possible with the option "Fast archiving".
- 6 You can define the intervals for the recording in the event of a malfunction, 5 sec or a multiple of 5 sec.

**Archiving**

---

- 7a** You can activate this function and then automatically overwrite the existing file of the same name. This must be taken into account particularly if there are several tests on one day that are archived under that day's date. (Does not apply to the application according to 21 CFR Part11)
- 7b** Here you have the option of having a new archive file created for each new day, week or month. If the selection "Retain file name" is activated, the date is appended to the file name.
- 8** All inputs are saved.
- 9** Starts archiving immediately; the inputs for *Pos. 3 Page 133* are ignored.
- 10** Archiving is immediately stopped; the inputs at *Pos. 4 Page 133* are ignored.
- 11** Close the menu window, the archiving will continue to run.

## 13.2 Graphical evaluation

You can access the menu via the context menu of the chamber.

→ Fig. SIMPATI main menu Pos. 14 Page 25

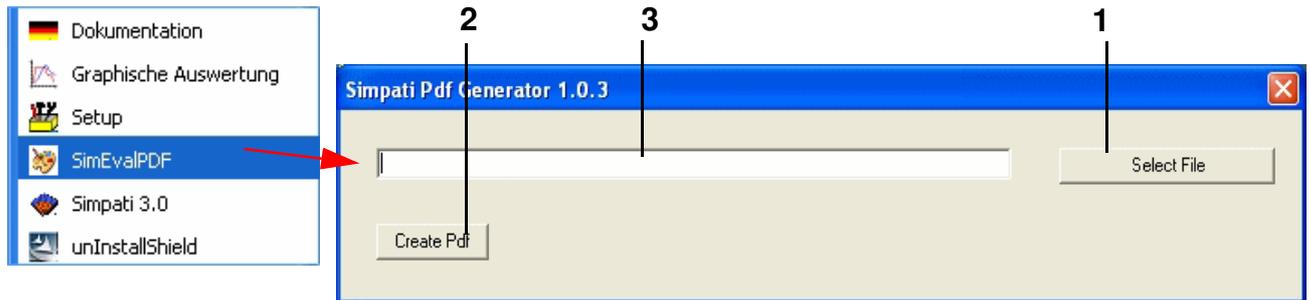
Graphical evaluation is used for the graphical representation of a test sequence.



### NOTE

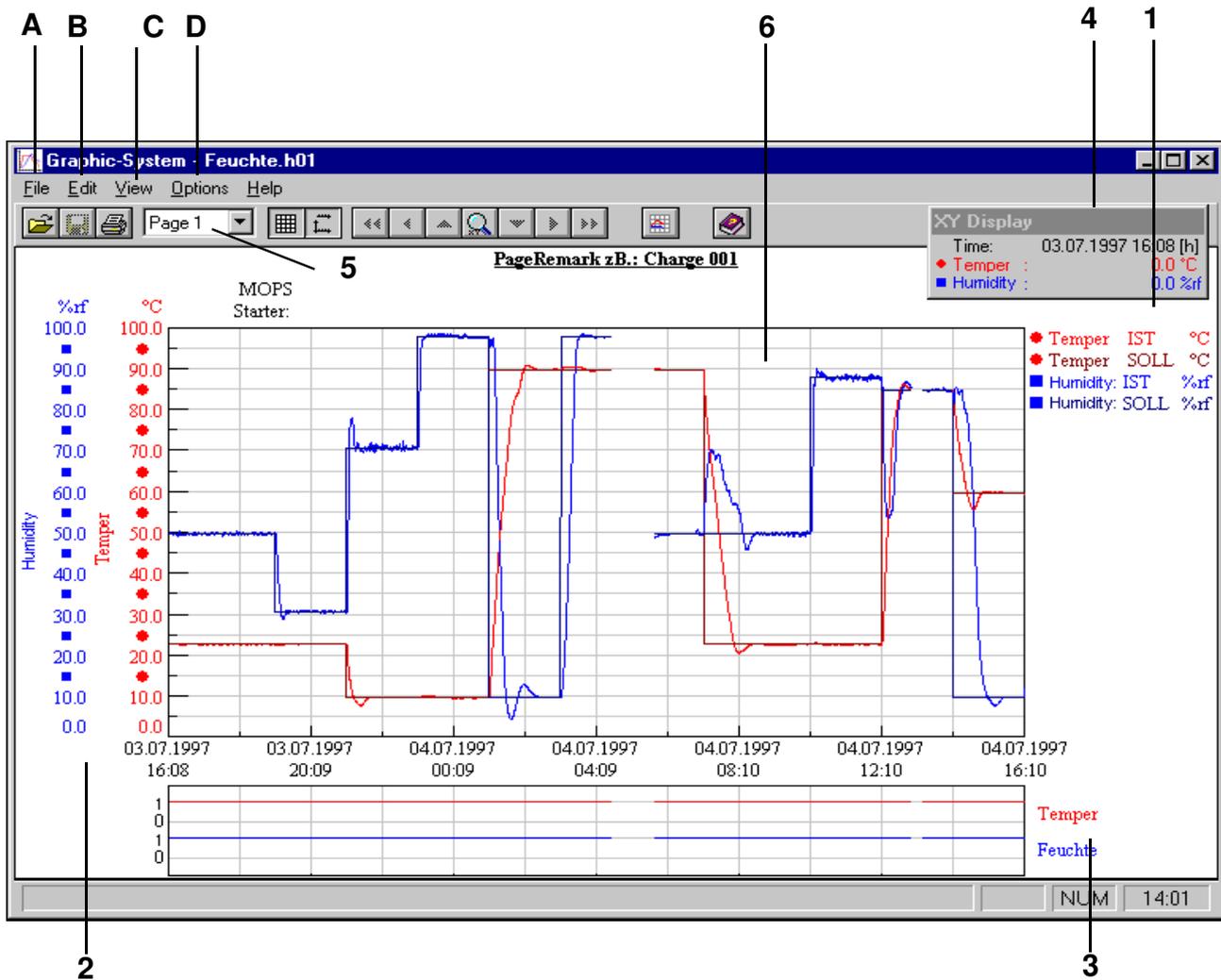
You can have a PDF file created from the recorded data as follows.

- Start the program SimEvalPdf.exe via »Start« → »All programs« → »SIMPATI«



- Select an archive file *Pos. 1 Page 135*, the archive file is displayed *Pos. 2 Page 135*
- The archive data is displayed via *Pos. 3 Page 135*; closing the graphical evaluation creates and displays the PDF file.

Graphical evaluation



Main menu - graphical evaluation

- 1 Analogue channels legend (control variables)
- 2 Scale for analogue channels (control variables)
- 3 Scale for digital channels
- 4 Moveable XY display
- 5 Listbox – page selection
- 6 Measurement curve range

There are eight pages available within a measurement file. These pages can be used to save different representations of the measured values. Pages can be selected using the list box (Pos. 5 Page 136).

**A) The menu function »File«****Open**

When you open the graphical evaluation, the dialog box to open a measurement file automatically opens or the measurement file of the chamber is opened which was activated in the SIMPATI main menu.

**Save as**

This function is used to copy and save a measurement file under a different file name. The header and body files are automatically copied and saved in the process.

**Delete**

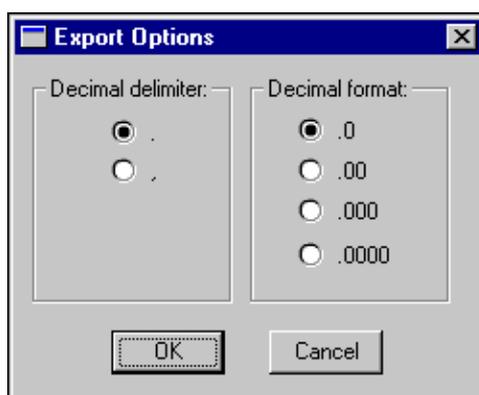
This function is used to delete measurement files.

## Graphical evaluation

### Export



The active view of a measurement file can be exported and processed using two different ASCII formats.



The number of decimal places and the decimal delimiter can be selected.

### Properties



### Print

The current view can be output to a printer, fax, file or other option for which a Windows driver has been installed.

**B) The menu function »Edit«**

**Copy**

The current view is saved in the clipboard as a bitmap.

**C) The menu function »View«**

**Grid**

This function is used to activate gridlines for the measurement curve range.



**Real time**

This function is used to switch between the relative time display and real time display.



*Real time display*



*Relative time display*

**XY display**

The XY display shows the coordinates of the mouse pointer in the measurement curve range.

**Data points**

If the data point function is activated then only measurement points are displayed:

**Black/white**

All data will be displayed in black and white.

As the curves and the legend cannot be distinguished by their colour, this data is indicated by numbers. This setting is not file-related and cannot be saved in the measurement file.

This function is used for colourless copying and faxing.

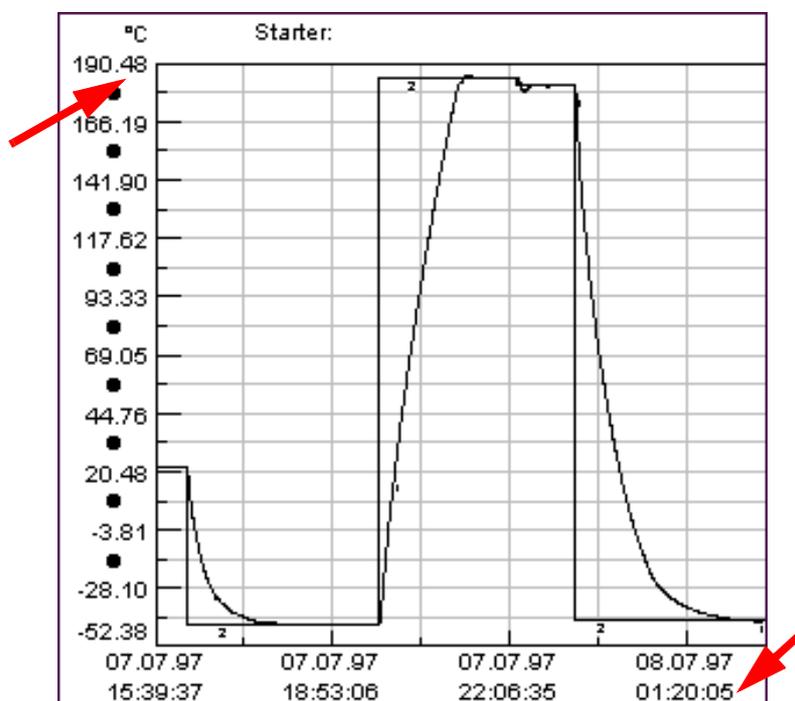
**Seconds**

The time display is accurate to one second.

## Graphical evaluation

### 1/100 scale

The values in the scale for analogue channels (control variables) are given to two decimal places.



### Zoom in

Three different zoom functions are available using this function.

#### X/Y

This function is used to select and enlarge an X/Y section. If the cursor is in the digital view, an X zoom is automatically implemented.

#### X

This function is used to enlarge a time section.

**Y**

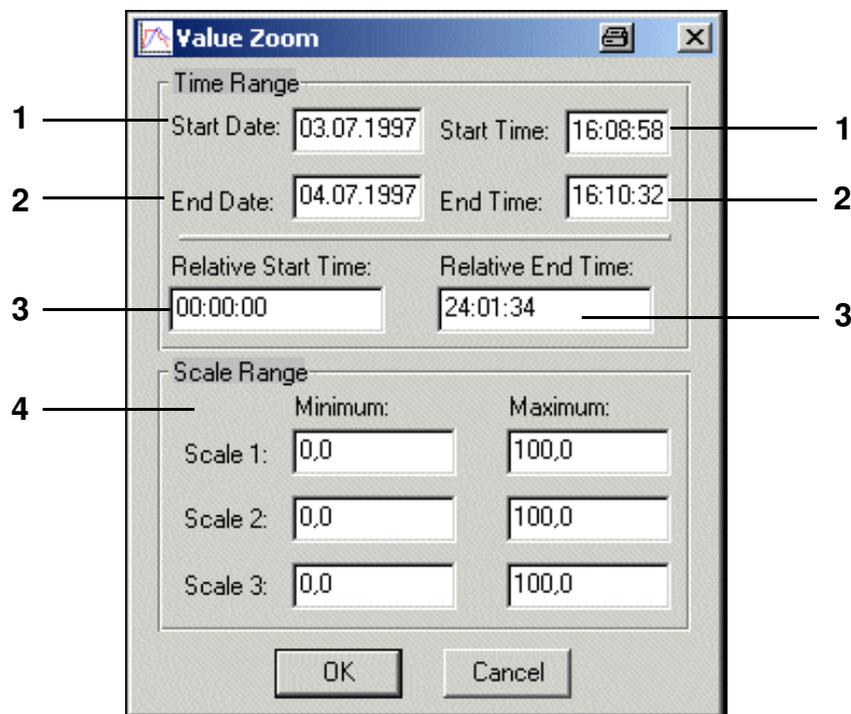
This function is used to enlarge a scale section.

A crosshair is displayed in the measurement curve range when the zoom function is activated. The zoom area can be selected by clicking and moving the crosshair and then clicking again.

The zoom area can also be defined using the keyboard. The crosshair must be moved using the arrow keys. If the shift key is also held down, the crosshair will move in jumps. A mouse click can be simulated by using the enter key.

- Set the first corner point and confirm with the enter key.
- Move the crosshair using the arrow keys.
- By pressing the tab key to switch between the two corner points, the selected zoom area can be corrected as required.
- The selected zoom area can be enlarged by using the enter key.

**Value**



The range can only be enlarged in the time display that was selected under »Real time« (Page 139).

- 1 Enter the start date and start time in real time of the area to be zoomed in on
- 2 Enter the date and end time in real time of the area to be zoomed in on
- 3 Relative start time/relative end time  
The program sequence is enlarged in real time for the time period entered.

**4 Scale range**

This allows the height of the desired zoom range to be changed. To do this, enter the scale range of the desired analogue channel. If a range is entered for all three scales, all three ranges are also taken into account.

**Graphical evaluation****Move zoom**

This function is used to move an enlarged section horizontally

Start	1
Backward	2
Top	3
Bottom	4
Forward	5
End	6

- 1 The zoom is returned in a single step to the start of the measurement file.
- 2 The zoom is returned in steps back to the start of the measurement file.
- 3 The zoom is moved step by step to the upper display limit.
- 4 The zoom is moved step by step to the lower display limit.
- 5 The zoom is moved in steps forward to the end of the measurement file.
- 6 The zoom is moved in one step to the end of the measurement file.

**Zooming back**

This function is used to return to the last ten zoom settings. If there are no zoom settings saved, this function is inactive.

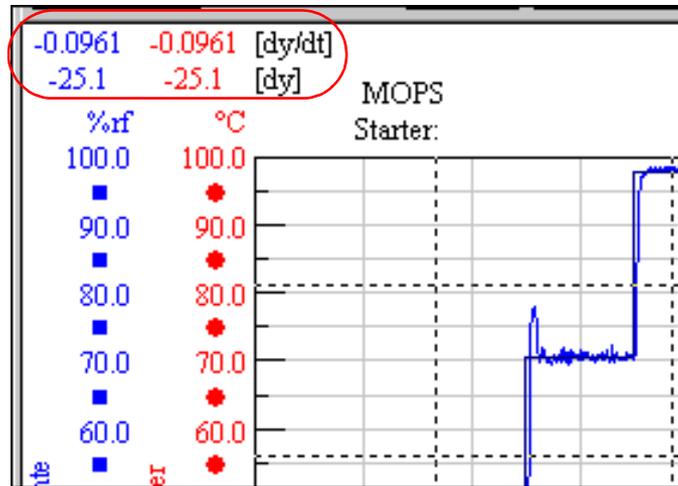
**Show all**

The whole measurement file is displayed.

D) The menu function »Options«

Measurement function

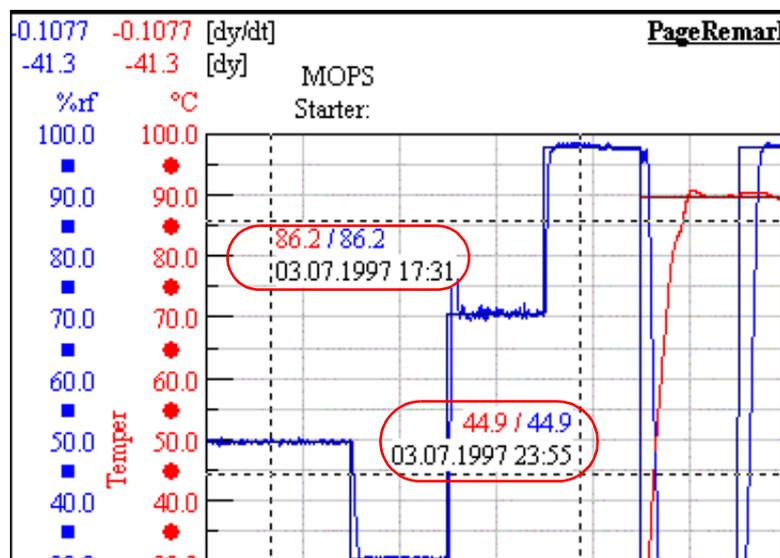
This function is used to record rates of change.



The rates of change in the measurement range marked by the crosshair are displayed in the upper left corner of the window.

Rates of change can also be shown in an enlarged area. The function »Zoom in« (Page 140) will then be switched off.

Show measurement data



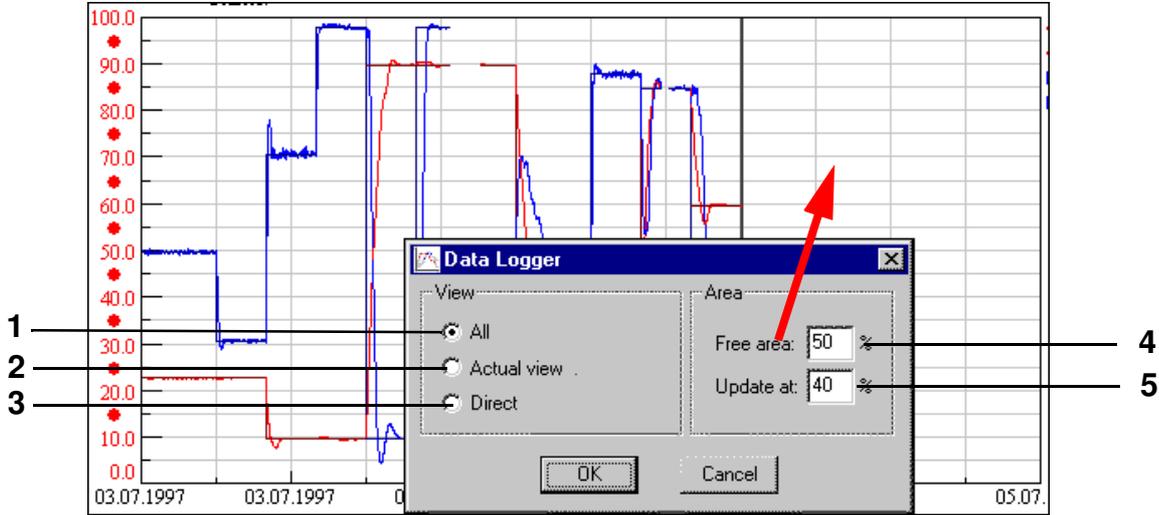
The actual values and the time are displayed in the zoomed area. To do this, the function »Measurement function« must be active.

Graphical evaluation

Data Logger



This function is best activated only when actually archiving data. Depending on the settings, the last set of measurements can be displayed as follows:



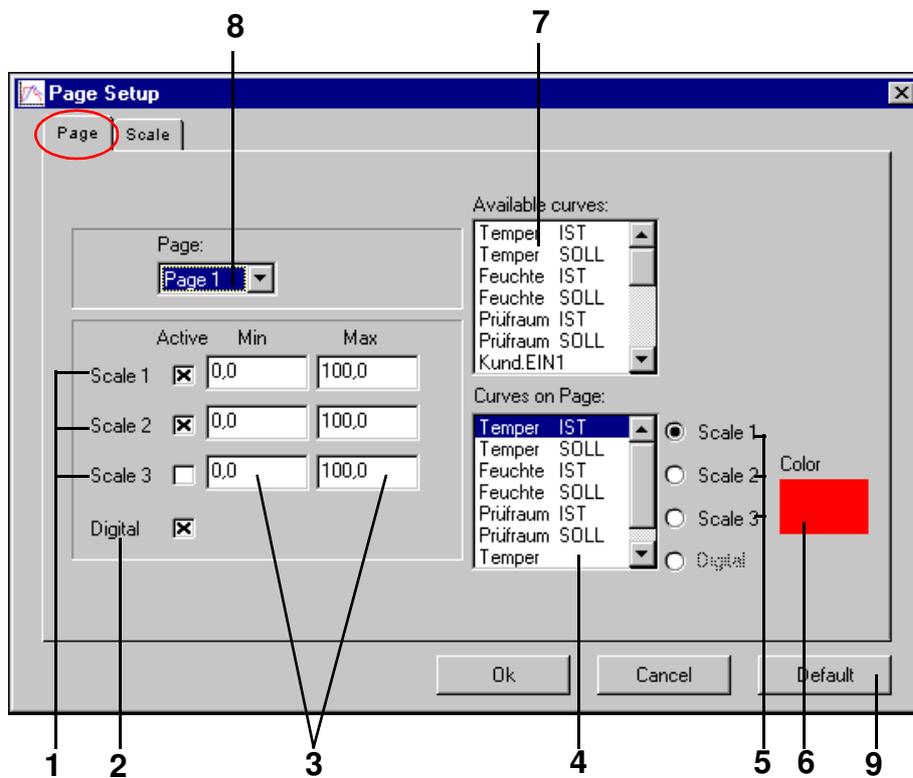
- 1 The entire measuring sequence is displayed. The new data points are added in the free area, the size of which can be specified in *Pos. 4 Page 144*. If the points are below the area specified in *Pos. 5 Page 144*, the entire view is re-scaled and another free area is made available.
- 2 This function is the same as *Pos. 1 Page 144*. However, if the data was previously zoomed during the measuring process, then this view is still displayed when new data points are added.
- 3 You can enter a time period. The display only contains the most recent data points recorded during this period.

Automatic scaling

When active, this function rounds the values of the X and Y axes during zooming.

**Page Setup**

The following settings can be applied separately to each page:

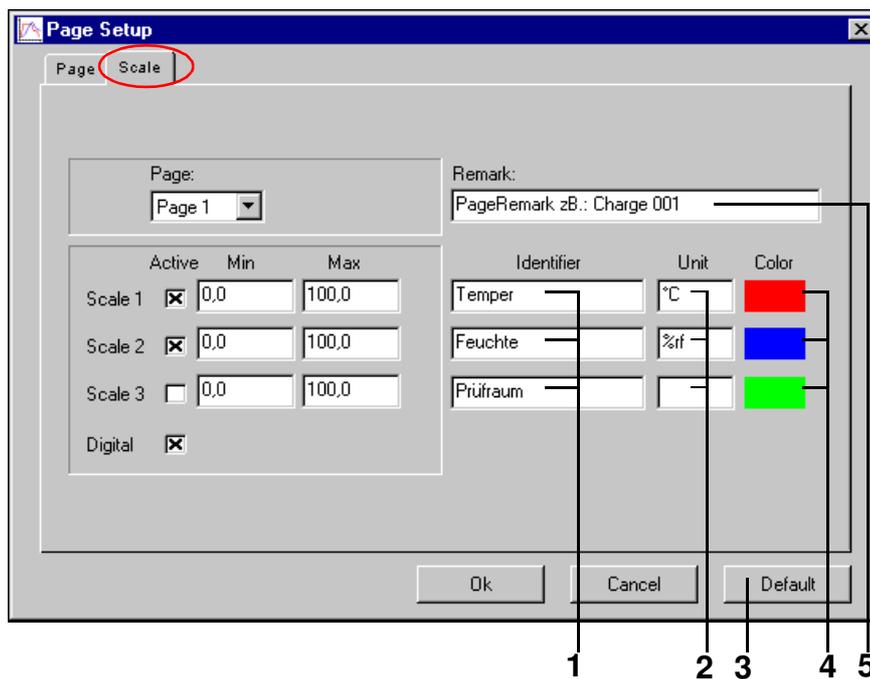


*Graphical evaluation setup page*

- 1 Switching the scales for analogue channels (control variables) on/off  
Up to three scales for analogue channels can be displayed.
- 2 Showing/hiding the scale for digital channels
- 3 The scale range for analogue channels can be selected as required.
- 4 List box of activated curves Any number of curves can be displayed. The curves are selected by double clicking on the appropriate channel in the list box for available channels (7). Curves which are not required can be removed from the active curve list box by double clicking on the channel in the list box.  
The number of curves and digital channel scales displayed for digital channels is limited by the resolution of the display.
- 5 Associate active curves with the scale  
The active channels can be associated with the scales as required. The analogue channels legend (control variables) is automatically updated.
- 6 Colour allocation for selected curves  
The colour of the curve can be selected by clicking on the colour field.
- 7 List box of all available control variables, control values and digital channels
- 8 Page selection
- 9 The settings are accepted as default settings.

## Graphical evaluation

## Scale setting



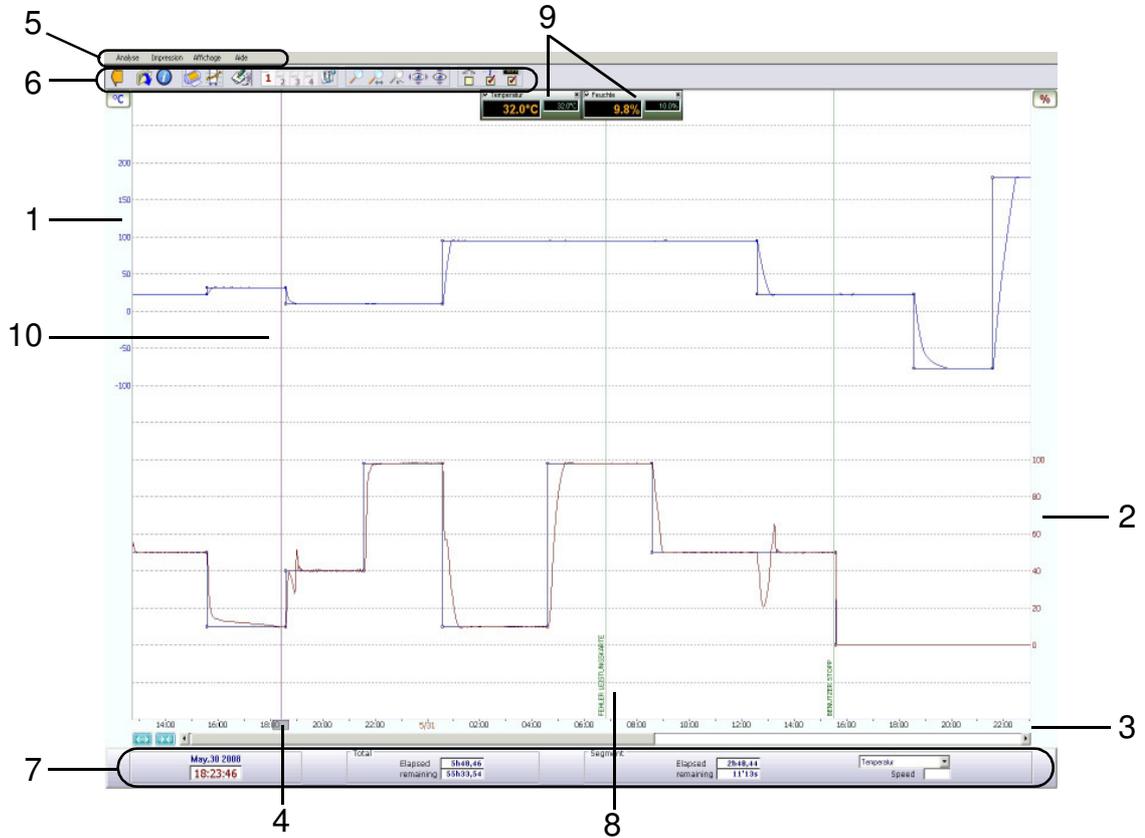
- 1 Define horizontal identification of the scale for analogue channels (control variables)  
This identification is also adopted in the XY display.
- 2 Define unit of the scale for analogue channels (control variables)  
The unit is also adopted in the XY display.
- 3 The settings are accepted as default settings.
- 4 Scale colour allocation  
Colour selection is implemented by clicking on the colour field.
- 5 Entering a heading

The data on the left-hand side of this dialogue box is identical to the menu  
→ [Fig. Graphical evaluation setup page, Page 145](#), and has the same functions.

### 13.3 Graphical evaluation with »VisuWin«

To be able to use this program viewer, the application "visuwin.exe" must be entered into the system configuration → Fig. Configuration of the main menu, Page 28 as a graphical evaluation tool.

#### 13.3.1 Overview



Program viewer overview »VisuWin«

- 1 Scale for »Temperature«
- 2 Scale for »Humidity«
- 3 Time axis
- 4 Ruler
- 5 Menu bar
- 6 Buttons
- 7 Information window
- 8 Display of an interrupt
- 9 Scanner
- 10 Presentation window

## Graphical evaluation with »VisuWin«

## 13.3.2 Overview of the buttons

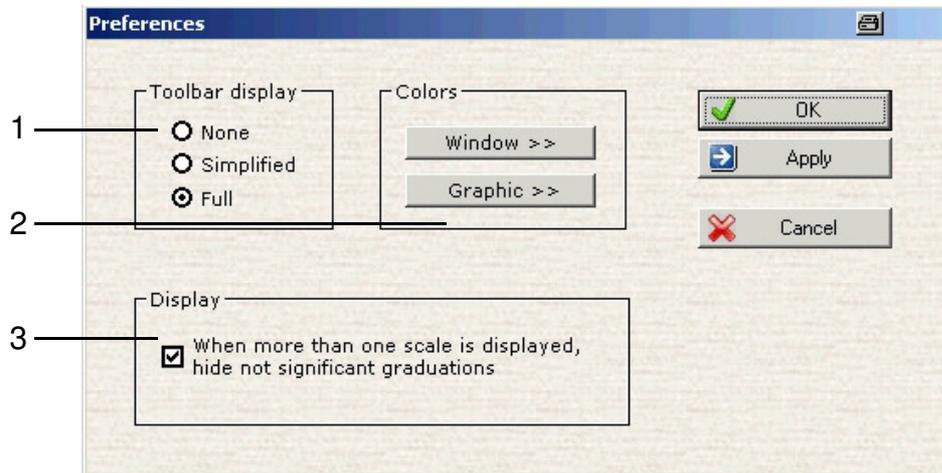
Symbol	Designation	Function	Reference
	»Quit«	End program	
	»Display a new test«	Open another test	
	»Test information«	Call up test information	
	»Print«	Print test	
	»Specify a zone«	Select area	
	Comment		
	Page name	Other page views	→ <a href="#">13.3.4 (Page 149)</a>
	»Current view configuration«	Configure display	
	Zoom function		
	Automatic adjustment of the scales		
	Show/hide digital channels		
	»Information window«	Show/hide information window	→ <a href="#">13.3.5 (Page 150)</a>
	Show/hide scanner		
			

### 13.3.3 Display options

#### Display settings

Display settings can be made in the menu »Preferences«.

- Choose »Preferences« in the menu »Display«



Display settings

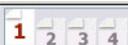
- 1 Button display → [Fig. Program viewer overview »VisuWin« Pos. 6 Buttons Page 147](#)  
 None no buttons are displayed  
 Simplified the buttons are displayed in a simplified version  
 Complete all buttons are displayed
- 2 Colour settings of the display  
 Window Colour display of the window  
 Graphic Colour display of the graphical window
- 3 Adjustment of the scale relationship

### 13.3.4 Page view

If a test has many curves, it can be difficult to analyse the display. You can divide the curves onto four pages. For each page, the following can be set:

- the colour of the curves
- the unit of the scales
- the scanner
- the information window
- the digital channels

To configure the pages, proceed as follows:

- Change with  to the desired page. The selected page is shown highlighted.
- To configure the page, press the button .

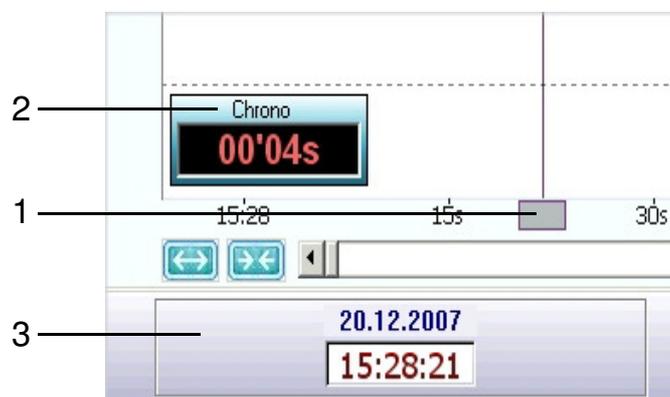
## Graphical evaluation with »VisuWin«

## 13.3.5 Ruler and information window

The ruler → *Fig. Program viewer overview »VisuWin« Pos. 4 Ruler Page 147* can be moved along the time axis. A scanner and the information window belong to it. It has the following functions:

- Positioning comments
  - Position the ruler at the point where the comment is to be inserted
  - Choose »Display« → »Comments« → »New comment (Rule position)«
  - Enter the text for the comment
- Measuring of time intervals
- Display of values
  - Press the grey rectangle on the time axis to move the ruler.

The scanner appears and permits relative time measurements. The information window shows additional information on the program.



Ruler

- 1 Field for moving the ruler
- 2 Scanner – relative time display
- 3 Information window

**Information window**

In the lower part of the screen, the information window shows the time values on the ruler position.

The information window can be shown and hidden with the button  .



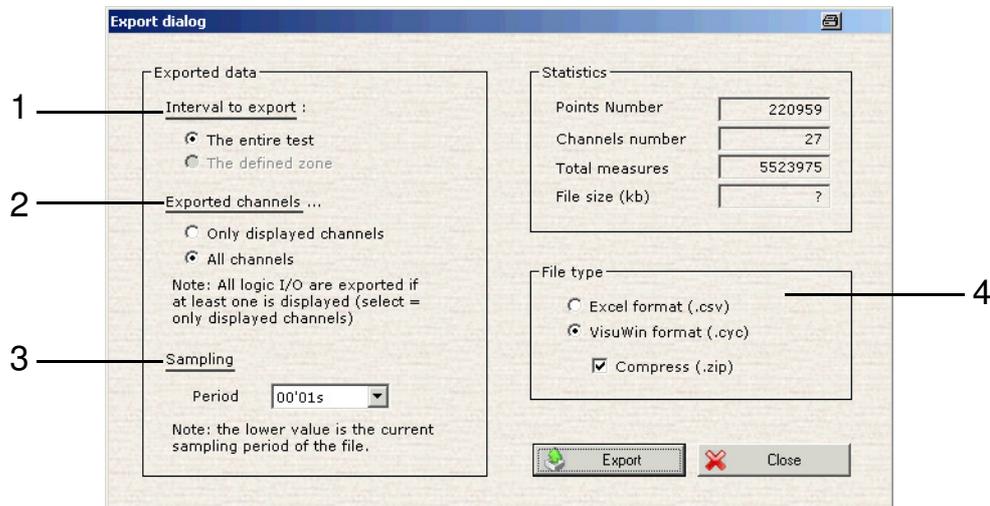
*Information window*

- |          |                                |  |
|----------|--------------------------------|--|
| <b>1</b> | Date and time                  | At the position of the ruler   |
| <b>2</b> | Total duration                 | »Elapsed« Elapsed time since the start of recording<br>»remaining« Remaining time until the end of the recording                   |
| <b>3</b> | Segment                        | »Elapsed« elapsed time of this segment<br>»remaining« remaining time of this segment<br>»Speed« speed of this segment with ramping |
| <b>4</b> | Selecting the setpoint profile |  |

## Graphical evaluation with »VisuWin«

## 13.3.6 Export test

You can use this function to export tests. To reduce the size of a test file, the record can be exported in ZIP format. Compression reduces the size of the file on average by about 20–25 %.

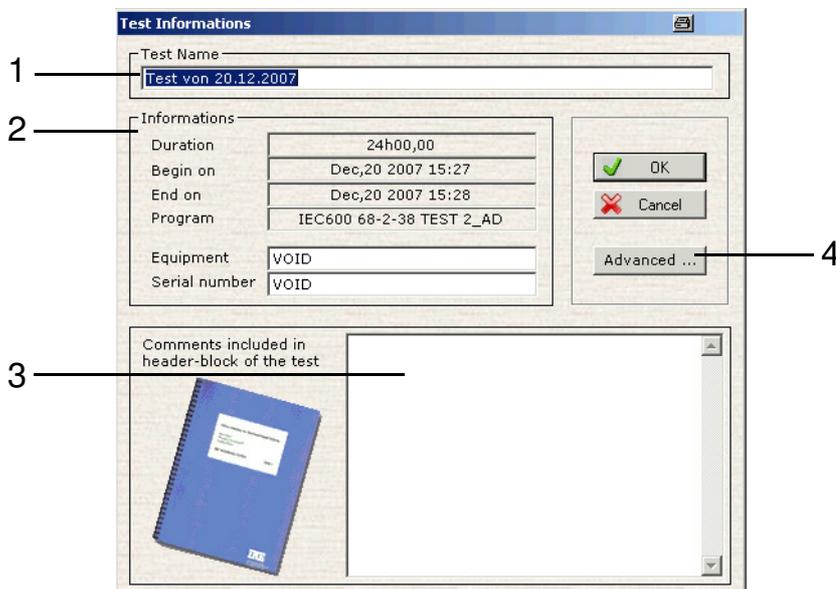


*Export test*

- 1 Select whether the entire test or only the selected area should be exported
- 2 Select whether only the displayed channels or all channels should be exported
- 3 Points of data are reduced in size as the timeframe becomes greater
- 4 Select file format

**13.3.7 Test information**

Press the button  to call up test information.



*Test information*

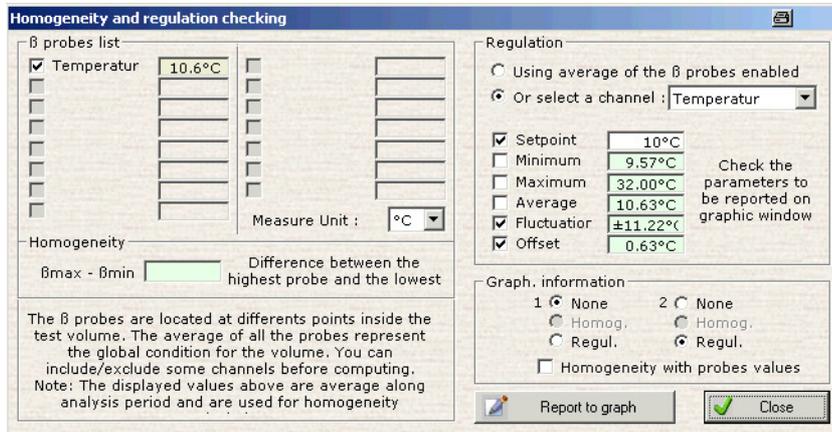
- |   |                       |  |
|---|-----------------------|--|
| 1 | Program name          |  |
| 2 | Further notes on test |  |
|   | Duration              | Total length of test   |
|   | Begin on              | Date and time of start of test                                       |
|   | End on                | Date and time of end of test   |
|   | Program               | Name of program, when using manual mode, there appears »Manual-Mode« |
|   | Equipement            | Designation of test cabinet  |
|   | Serial number         | Serial number of test cabinet  |
| 3 | Comments...           | The text input in this field appears in the head of the printout     |
| 4 | Advanced              | Further information on test  |

Graphical evaluation with »VisuWin«

13.3.8 Analysis

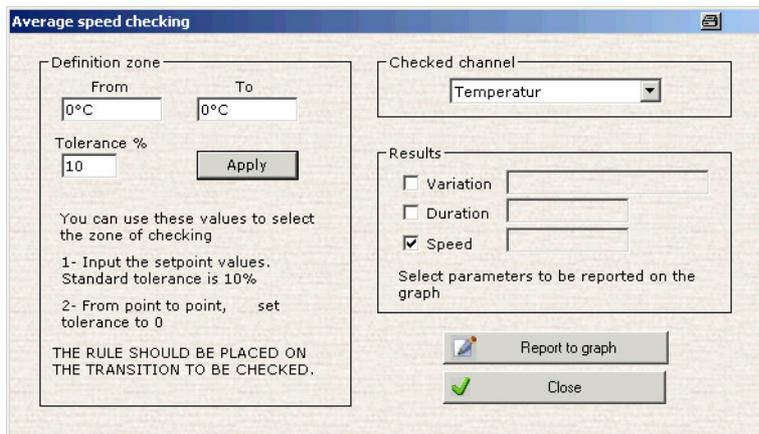
In this menu, the control sensors can be compared to the measured values.

- Press on  and establish an area that should be analysed.
- Choose »Homogeneity, regulation« in the menu »Analysis«.



Analysis of homogeneity

- Press on  and establish an area that should be analysed.
- Choose »Average speed« in the menu »Analysis«.



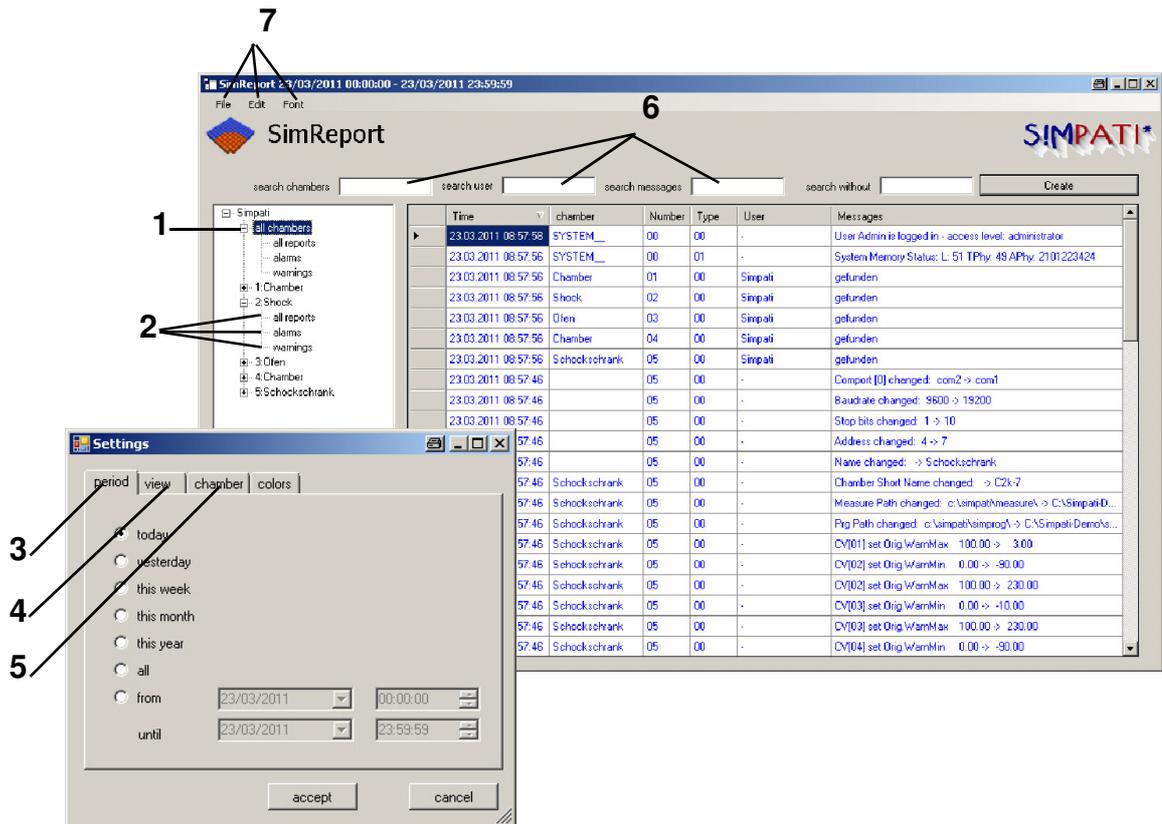
Average speed

## 13.4 Chamber reports (Simreport)

You can access the menu via the context menu of the chamber.  
 → Fig. SIMPATI main menu Pos. 15 Page 25

»SimReport« can be used to view reports. Here, the program differentiates between the chambers uploaded by SIMPATI. The messages can also be shown or hidden according to various criteria as follows.

SimReport



- 1 Only via the context menu of this directory (*Pos. 1 Page 155*) is it possible to display the warnings/alarms/error messages and reports of all or multiple chambers.  
 → Fig. SimReport
- 2 Every chamber has 3 selection possibilities:
  - Displaying all report entries
  - Only displaying alarms
  - Only displaying warnings
- 3 Selection of the reports according to the creation date (today, yesterday, this week, this month, this year, all)

- 4 Select display of the following events: warning/alarm/system messages, all messages  
The text colour (foreground) and background colour (background) for this type of message can be defined.
- 5 Configure the visibility of the chambers.
- 6 Messages can be filtered according to chamber, user, and messages.
- 7 In the File context menu, messages can be printed, exported to PDF, or the program can be terminated.

The settings can be configured in the Edit context menu.

The font can be configured in the Font context menu.

Time	Chamber	Number	Type	User	Messages
23/03/2011 08:55:09	SYSTEM	00	00	-	Systemstart SIMpati
23/03/2011 08:55:19	Chamber	01	00	Admin	SYMPRG Restart automatic mode
23/03/2011 08:55:20	SYSTEM	00	01	-	System Memory Status: L: 49 TPhy: 48 APhy: 2101223424
23/03/2011 08:55:20	Chamber	01	00	Admin	gefunden
23/03/2011 08:55:20	Schockschrank	02	00	Admin	gefunden
23/03/2011 08:55:20	Ofen	03	00	Admin	gefunden
23/03/2011 08:55:20	Chamber	04	00	Admin	gefunden
23/03/2011 08:55:23	SYSTEM	00	00	-	User Admin is logged in - access level: administrator
23/03/2011 08:55:32	Chamber	01	03	Admin	Freier Speicher im Ziellaufwerk qerinq: 2289840128 bytes
23/03/2011 08:56:02	Chamber	01	03	Admin	Archivierungsstopp nach Kammerstopp
23/03/2011 08:56:55	SYSTEM	00	00	-	SIMPati Systemabschluss
23/03/2011 08:57:45	SYSTEM	00	00	-	Systemstart SIMpati
23/03/2011 08:57:45		02	00	-	Chamber Type changed: 0 -> 3
23/03/2011 08:57:45		02	00	-	Archiving interval (optional) changed: 10 -> 5
23/03/2011 08:57:45		02	00	-	Power Fail Time changed: 0 -> 60
23/03/2011 08:57:45		02	00	-	Power Fail Reference Channel changed: 0 -> 1
23/03/2011 08:57:45		02	00	-	Power Fail Actual Channel changed: 0 -> 1
23/03/2011 08:57:45		02	00	-	Power Fail Delta changed: 0.000000 -> 5.000000
23/03/2011 08:57:45		02	00	-	TCP/IP Target HostName [0] changed: -> 0
23/03/2011 08:57:45		02	00	-	Baudrate changed: 9600 -> 19200
23/03/2011 08:57:45		02	00	-	Stop bits changed: 1 -> 10
23/03/2011 08:57:45		02	00	-	Address changed: 1 -> 2
23/03/2011 08:57:45		02	00	-	Name changed: -> Shock
23/03/2011 08:57:45	Shock	02	00	-	Chamber Short Name changed: -> C2k-2
23/03/2011 08:57:45	Shock	02	00	-	Measure Path changed: c:\simpati\measure\ -> C:\Simpati-Demo\measure\
23/03/2011 08:57:45	Shock	02	00	-	Prg Path changed: c:\simpati\simprog\ -> C:\Simpati-Demo\simprog\
23/03/2011 08:57:45	Shock	02	00	-	CV[01] set Orig.WamMax 100.00 -> 3.00
23/03/2011 08:57:45	Shock	02	00	-	CV[02] set Orig.WamMin 0.00 -> -90.00
23/03/2011 08:57:45	Shock	02	00	-	CV[02] set Orig.WamMax 100.00 -> 230.00
23/03/2011 08:57:45	Shock	02	00	-	CV[03] set Orig.WamMax 100.00 -> 230.00
23/03/2011 08:57:45	Shock	02	00	-	CV[04] set Orig.WamMin 0.00 -> -90.00
23/03/2011 08:57:45	Shock	02	00	-	CV[04] set Orig.WamMax 100.00 -> 60.00
23/03/2011 08:57:45	Shock	02	00	-	CV[05] set Orig.WamMin 0.00 -> -90.00
23/03/2011 08:57:45	Shock	02	00	-	CV[05] set Orig.WamMax 100.00 -> 190.00
23/03/2011 08:57:45	Shock	02	00	-	CV[06] set Orig.WamMin 0.00 -> 1.00
23/03/2011 08:57:45	Shock	02	00	-	CV[06] set Orig.WamMax 100.00 -> 10000.00
23/03/2011 08:57:45		05	00	-	Chamber Type changed: 0 -> 3
23/03/2011 08:57:45		05	00	-	Archiving interval (optional) changed: 10 -> 5
23/03/2011 08:57:45		05	00	-	Power Fail Time changed: 0 -> 60
23/03/2011 08:57:45		05	00	-	Power Fail Reference Channel changed: 0 -> 1
23/03/2011 08:57:45		05	00	-	Power Fail Actual Channel changed: 0 -> 1
23/03/2011 08:57:45		05	00	-	Power Fail Delta changed: 0.000000 -> 5.000000
23/03/2011 08:57:45		05	00	-	TCP/IP Target HostName [0] changed: -> 0

Page 1 of 2

Simpati Report 23/03/2011 00:00:00 - 23/03/2011 23:59:59

Report entries exported in PDF format

## 14 Automatic generation of e-mail messages in SIMPATI

SIMPATI continuously monitors all error states of the connected chambers. If a change in state is detected, the corresponding error message or other messages can be sent as an e-mail to any valid e-mail address.

To start SimMailer when SIMPATI is started, the following entry must be made in the start file `simpati.str`.

```
98:01:simmailer::
```

SimMailer is opened in the taskbar with the right mouse key and "Show".



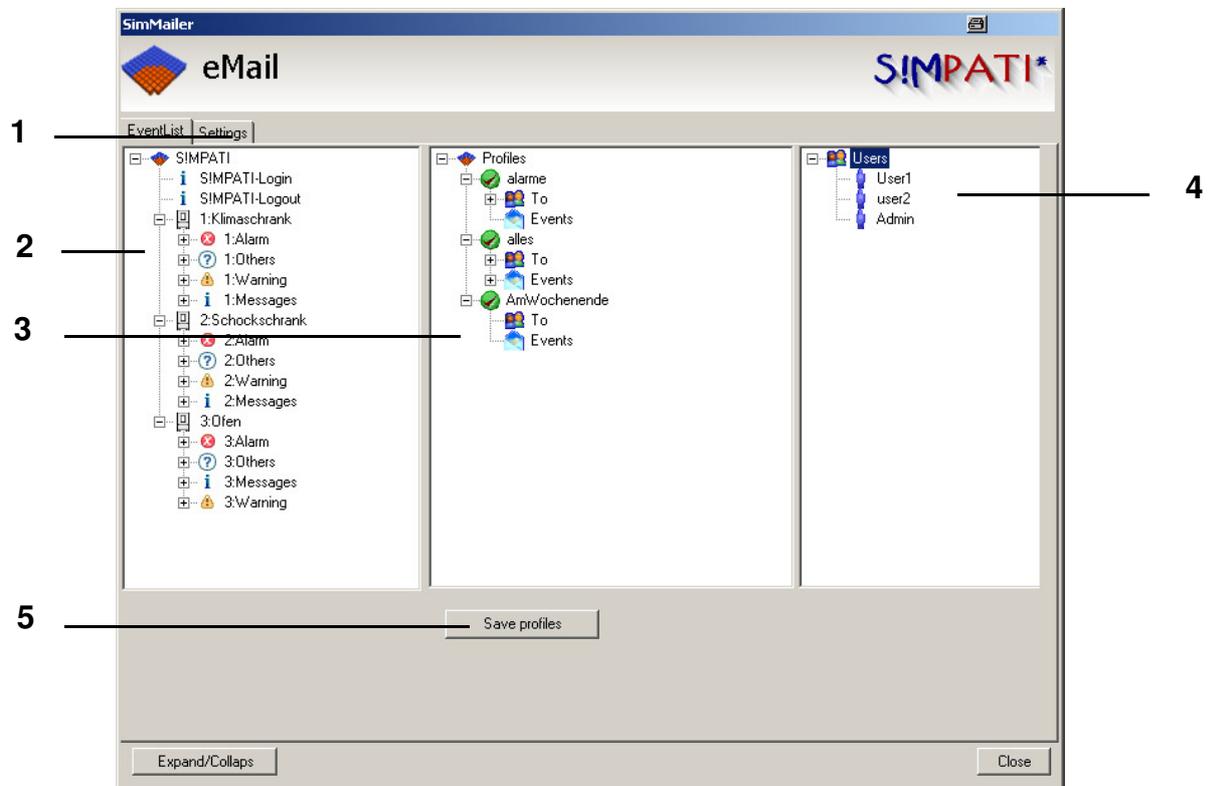
- 1 SimMailer

### 14.1 Requirements for operation

The software package SIMPATI from version 4.04 or higher is installed on a PC with network access. The connection to the SMTP server can be verified using Ping.

## 14.2 Configuring profiles

The messages that should be sent, the chamber from which they should be sent and the recipients to whom they should be sent can be configured via different profiles. A profile is composed of a message list (2) and a recipient list (4).



SimMailer base menu

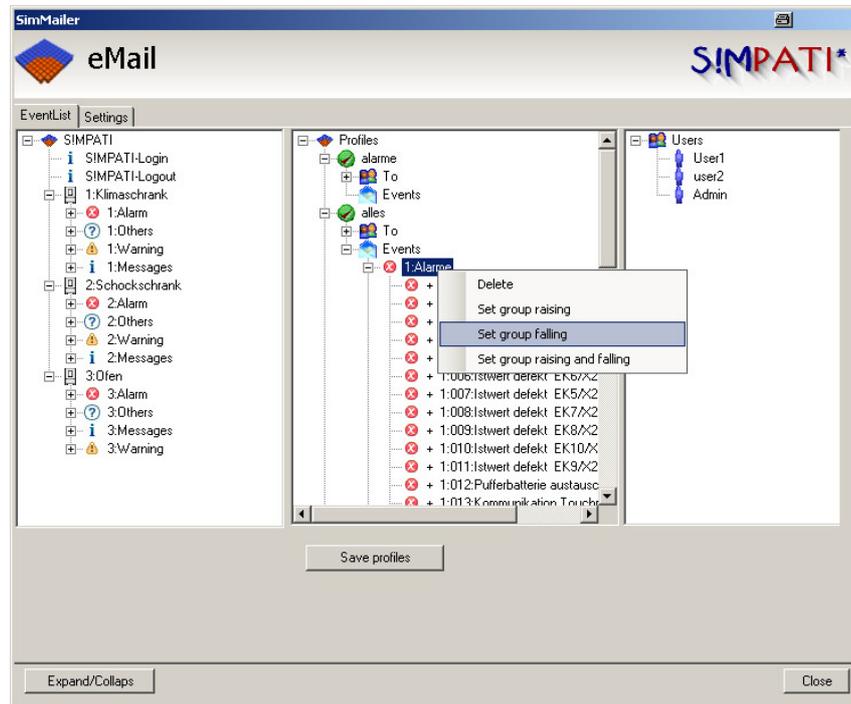
- 1 Additional settings → [14.4 Basic settings \(Page 161\)](#)
- 2 Message list: selection of the chambers and type of message
- 3 Profiles can be created here and the messages to be sent as well as the recipients can be configured here.
- 4 Recipient list: selection of recipients
- 5 Save profiles



### NOTE

The profile features are adopted by dragging and dropping the relevant messages and users into the profile.

The profiles can be set even more specifically.

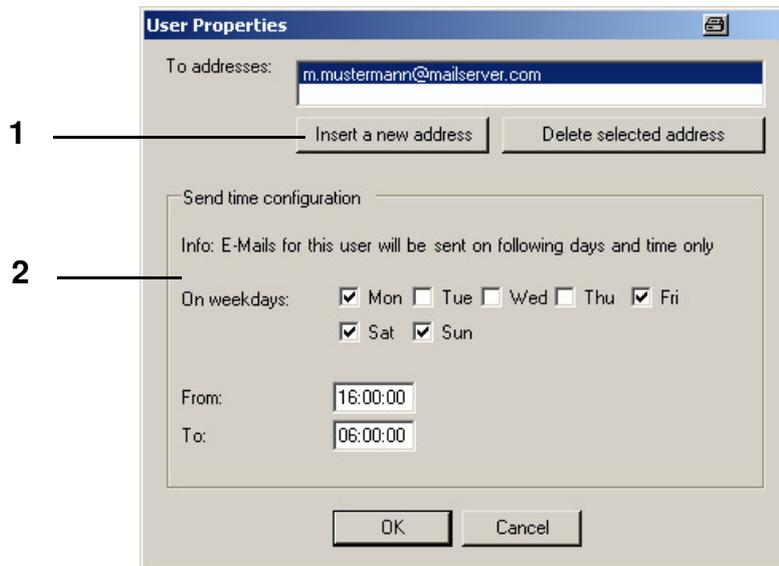


*Configuring events*

The events can be configured in groups or individually.

- |                  |                                 |
|------------------|---------------------------------|
| incoming         | only incoming messages are sent |
| outgoing         | only outgoing messages are sent |
| coming and going | all messages are sent           |

## 14.3 Configuring recipients

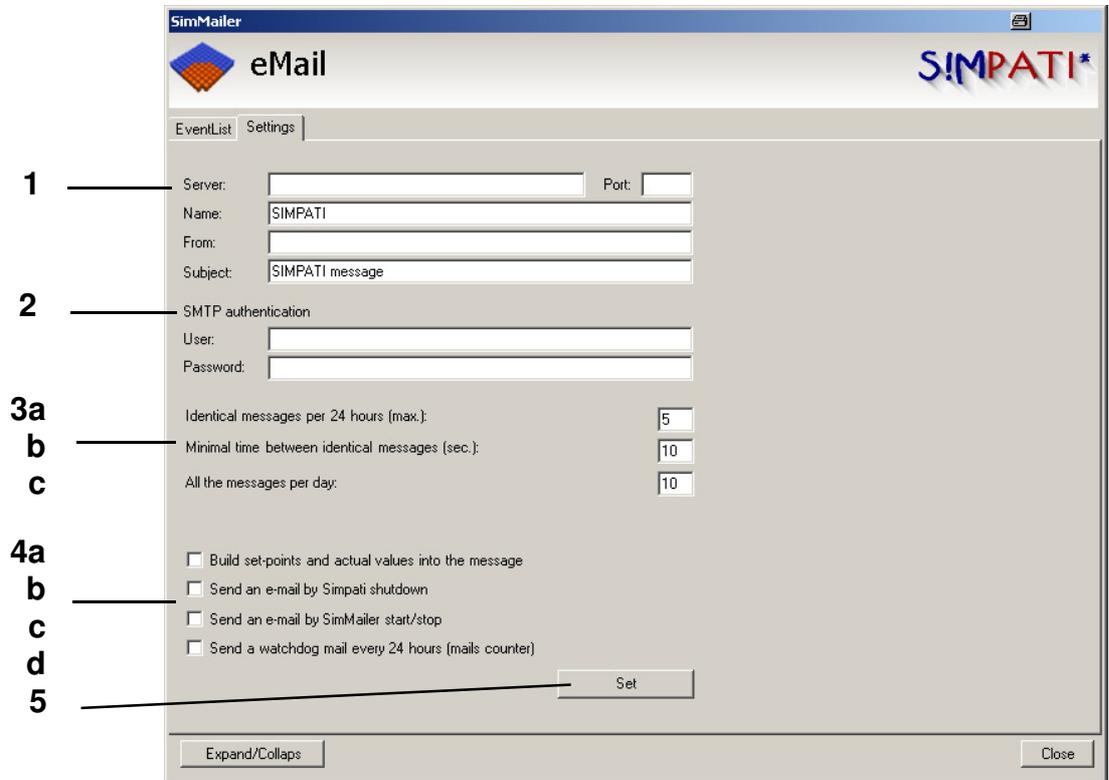


*setting up e-mail address*

- 1 Input e-mail address  
One recipient may have several addresses.
- 2 Configure reception time, the days and time of day at which messages should be sent to the above-mentioned e-mail address.

## 14.4 Basic settings

The basic settings for the SMTP server, as well as general message features are set via this menu.

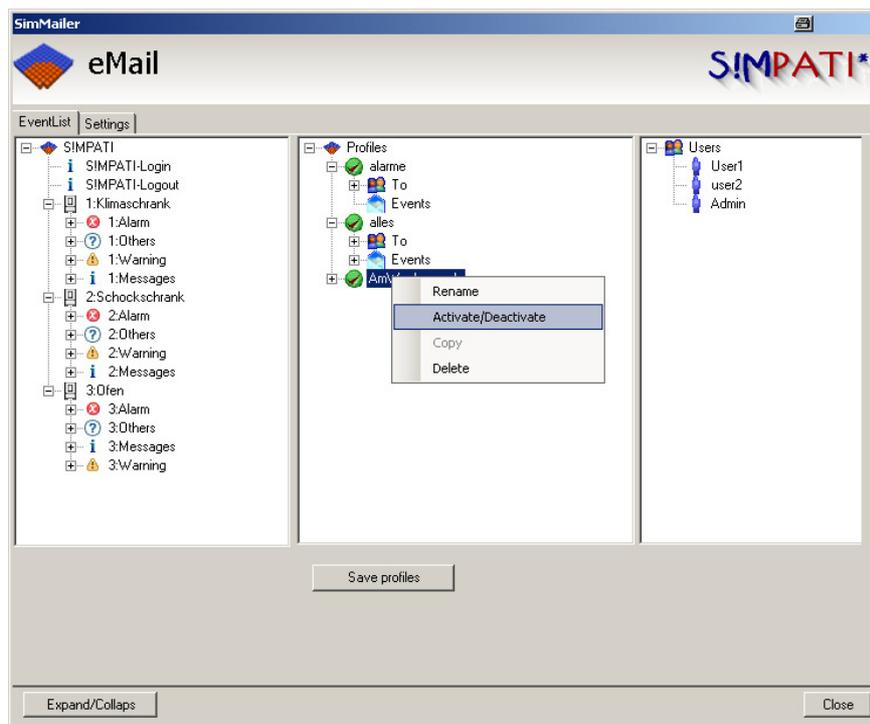


*Configuring mail settings*

- 1 Server: Name or IP address of the SMTP server  
Port: Port via which the e-mails are sent
- 2 SMTP: Authentication; if no authentication is demanded at the server, the fields remain empty
- 3 Set frequency of messages
  - 3a Number of identical messages within 24 hours (max.)  
A message occurring several times will only be sent within a 24 hour period as many times as are set here.
  - 3b Spacing between identical messages (sec)  
Time interval between the identical messages; all messages between them will be ignored.
  - 3c Number of messages in a day  
To avoid an overload of the server, the maximum number of messages during 24 h can be set.
- 4a  Build set-points and actual values into the message
- 4b  Send an e-mail by Simpati shutdown
- 4c  Send an e-mail by SimMailer start/stop
- 4d  Send a watchdog mail every 24 hours (mails counter)

- 4 Select additional message types
  - 4a Send current actual values and setpoints  
The current status of the actual and setpoint values of the selected chamber will be sent along with the message.
  - 4b Send an e-mail when SIMPATI is closed  
If SIMPATI is closed, an e-mail is sent.
  - 4c Send an e-mail when SimMailer is started/stopped  
An e-mail is sent if SimMailer is started or stopped.
  - 4d Send a monitoring e-mail every 24 h  
A collective message with the total number of sent e-mails is sent every 24 hours to all activated users.
- 5 The settings are saved by clicking on "Adopt".

Individual profiles can be activated and deactivated



If a profile is deactivated, no messages are sent to this profile.

## 14.5 Activation

For emails to be sent via the SimMailer, it must be activated in the task bar with the right mouse button and "Start Mailer". If SimMailer is activated, the symbol in the taskbar appears in green.

### 14.5.1 Automatic activation at the start of S!MPATI

To automatically activate the configured profiles when S!MPATI is started, the following entry must be made in the start file simpati.str.

```
98:01:simmailer:-start:
```



## 15 Malfunctions, warning messages/alarm messages/fault messages

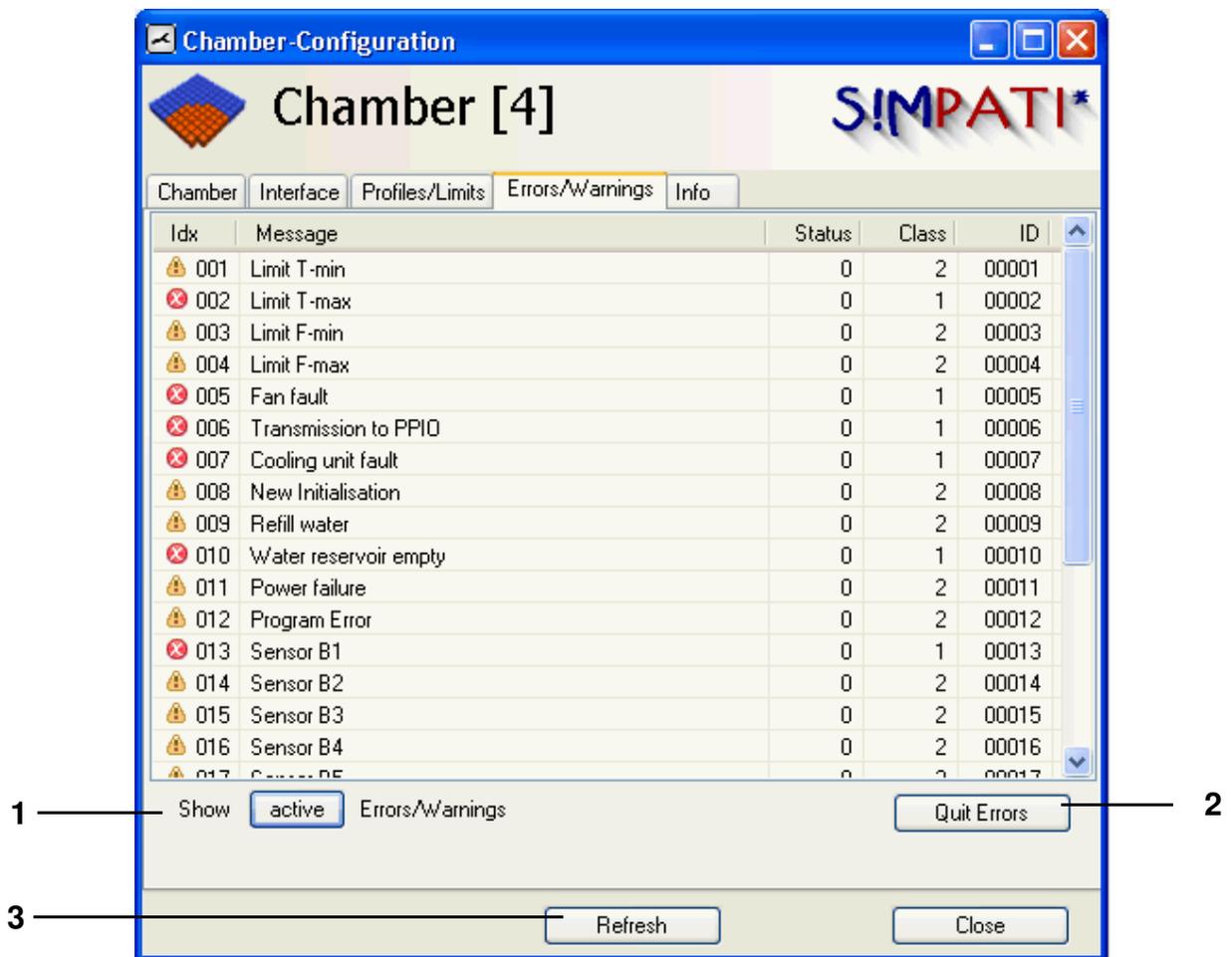
The menu for displaying warning messages/alarm messages/fault messages is accessed via the context menu of the chamber. → Fig. SIMPATI main menu Pos. 16 Page 25

### 15.1 Displaying a list of warning messages/alarm messages/fault messages

This menu is accessed via the context menu of the chamber or via the single user interface. → Fig. SIMPATI main menu Pos. 17 Page 25

Two different lists of messages can be displayed:

- all current warning messages/alarm messages/fault messages (→ Fig.)
- all messages configured for this chamber



Display current warning messages/alarm messages/fault messages

- 1 With the aid of this button you can switch between message lists.  
In the list containing all of the warning messages/alarm messages/fault messages configured for this chamber, different colours are used to highlight the current messages.
- 2 All current messages are acknowledged but not deleted; they appear in the overall list of messages.
- 3 Update the view.



**NOTE**

*In the case of messages which are generated as a result of a problem at the chamber, after rectifying the cause first acknowledge the message on the chamber and then in S!MPATI.*

A description of the error messages which can be generated by the chamber controller can be found in the operating manual of the chambers.

## APPENDIX: CHAMBER CONTROLLER SETTINGS

### 1. Chambers with the controllers MOPS, CTC and TC

The following settings must be entered in the terminal before the start of the configuration program:

#### E4 Terminal (Chapter 3.5 of the Terminal operating instructions)

Interface protocol OP 0	Selection: 4 (TSI protocol)
Interface type OP 2	Selection: 0 (RS 232)
Address selection OP 3	Selection: 0 to 31 – the address No. on the terminal is 1 digit smaller than the address No. in the SIMPATI software.

#### C Terminal (Chapter 3.2 of the Terminal operating instructions)

Interface protocol type	Selection: External TSI (ISAR controller: transparent)
Interface type	Selection: RS 232
Baud rate	Selection: 9600
Address selection	Selection: 0 to 31 – the address No. on the terminal is 1 digit smaller than the address No. in the SIMPATI software.

### 2. Chambers with a DMR controller

The following settings must be entered in the terminal before the start of the configuration program:

Basic operator panel	(→ Chapter »Open and closed loop control« in the operating instructions of the relevant chamber)
Address	1 . . . 9 (up to Version 38) 1 . . . 32 (from Version 39)
Baud rate	9600 Baud
The address corresponds to the address in SIMPATI	

### 3. Chambers with a Mincon/Simcon controller

SIMPATI supports the JBus protocol of this controller with a transfer rate of 19200 baud.  
Valid addresses: 1 to 32.

To check the settings of the interface parameters, press the following in the basic menu:



Then the following menu appears

Special functions				
Language		Protocol		
Englich		J-Bus		
Powerfailtime		Baud		
240 min		19200		
Powerfailtol.		Address		
20 K		1		
			INTERN	

The settings you have made become active after restarting the chamber.  
Configuration takes place automatically by reading the controller data in Simsetup.  
Chambers with a Mincon/Simcon controller have an RS 232 serial interface as standard.

## 4. Chambers with a Simpac controller

The chambers with a Simpac controller are equipped with an Ethernet interface as standard; they are always actuated via TCP/IP.

In order to be able to control the chamber via SIMPATI you will need to make the following settings on the control unit:

- Enter the TCP/IP address, subnet mask and standard gateway via the following menu:  
»Main menu« → »Settings« → »Configuration« → Interface«  
select DHCP« if the TCP/IP address is allocated automatically.



### NOTE

*The protocols are recognised automatically. The MAC address is located in the control cabinet on the frame of the control board.*

- Switch operating mode: »Basic menu« → »Settings« → to »External« Switch operating mode (via the »Internal« button). Chambers without a control unit are set to »External« operation at the factory.
- Please read the additional information in → [Appendix: Connecting cable pin assignment](#)  
→ [4. RS 232 interface for Mincon/Simcon/Simpac and DMR controllers](#).



---

## APPENDIX: SUPPORT FOR THE 8990-6C DATA LOGGER WITH CHECKSUM

In order to use the 8990-6C data logger with checksum with SIMPATI, proceed as follows:

### 1. Connect the interface cable to the PC

The interface cable supplied with the data logger has a 9-pin Sub-D connector. Connect this cable to a free RS 232 serial port. In some cases your free serial port may take a 25-pin Sub-D connector. If this is the case, use a commercially available adapter (not included).



#### NOTE

*Please ensure that this COM port is permanently available for SIMPATI and that no other applications access it.*

### 2. Configuring the start file

To activate communications, open the directory `..\simpati\system` and modify the file `Simpati.str` by adding the following entry:

```
30:01:simwutdata::
```

Alternatively, you can open the directory `..\simpati\system` on the configuration disk and copy the file `Simpati.str` to the directory `..\simpati\system` on your hard drive. Make sure that you exit SIMPATI before trying to copy this file, as you will not be able to copy the file otherwise.



#### NOTE

*Copying this file will overwrite any existing special configurations. If you have a modified `Simpati.str`, please call our service hotline for assistance. → [1.7 Online help and operating manual \(Page 3\)](#)*

### 3. Preparing the configuration file

The configuration file is made available by our service hotline.

→ [1.7 Online help and operating manual \(Page 3\)](#)

Copy the configuration file `Simpati.cxx` from the configuration diskette to the `simpati\INIT` directory. In the directory `\simpati\INIT`, please change the file extension from `.cxx` to match the appropriate chamber number (for example, if the data logger is the second device supported by SIMPATI, the extension should be changed to `c02`).

#### **4. Restarting S!MPATI**

Exit S!MPATI and restart S!MPATI.

#### **5. Checking the installation**

After S!MPATI is restarted, the task bar will contain the entry simwutdata.exe.

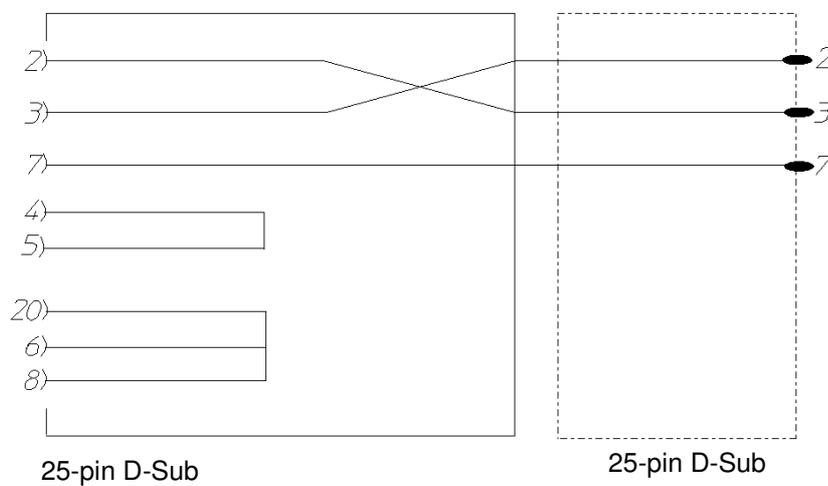
## APPENDIX: CONNECTING CABLE PIN ASSIGNMENT

The pin assignment for the various other cables can be found in Chapter → 3.8 (Page 17).

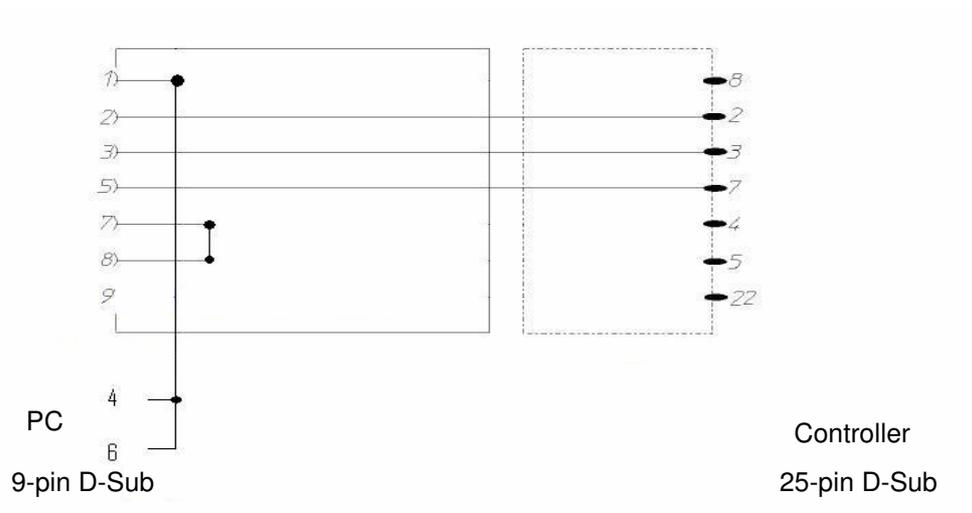
### 1. Ethernet interface for Simcon and Simpac controllers

For connection to the network you will require a standard twisted connecting cable of the following type: RJ45 patch cable, Cat.5, STP, 4 x 2

### 2. RS 232 interface for CTC/TC and MOPS controllers

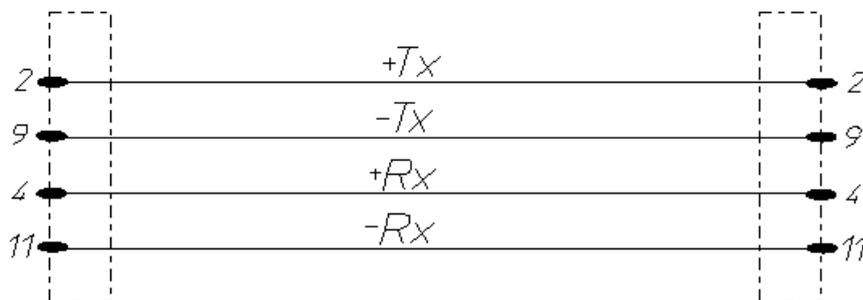


Pin assignment for RS 232 interface cable  
25/25 pole for CTC/TC and MOPS controllers



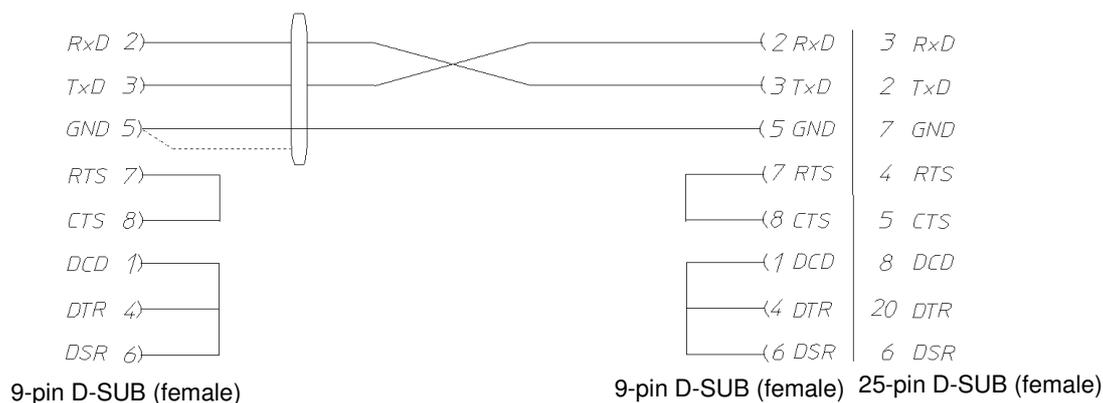
Pin assignment for RS 232 interface cable  
9/25 pole for CTC/TC and MOPS controllers

### 3. RS 485 interface for CTC/TC and MOPS controllers



*Pin assignment for RS 485 interface cable  
for CTC/TC and MOPS controllers*

### 4. RS 232 interface for Mincon/Simcon/Simpac and DMR controllers

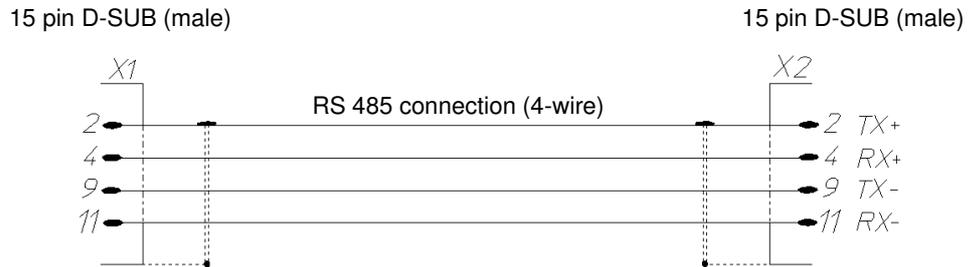


*Pin assignment for RS 232 interface cable for Mincon/Simcon/Simpac and DMR controllers*

If the RS 485 interface option is fitted (material number 63823119), the RS 232/RS 485 interface converter (material number 63823080) must be fitted to the PC.

If a chamber with Simpac controller is to be incorporated in a Simcon/Mincon network, then the connection is made via the RS 232 interface. In this case the same connection specifications and read-in methods apply as for Simcon/Mincon controllers. Please note that a minicombox and a SIMPATI version of 3.0 or higher are required for this.

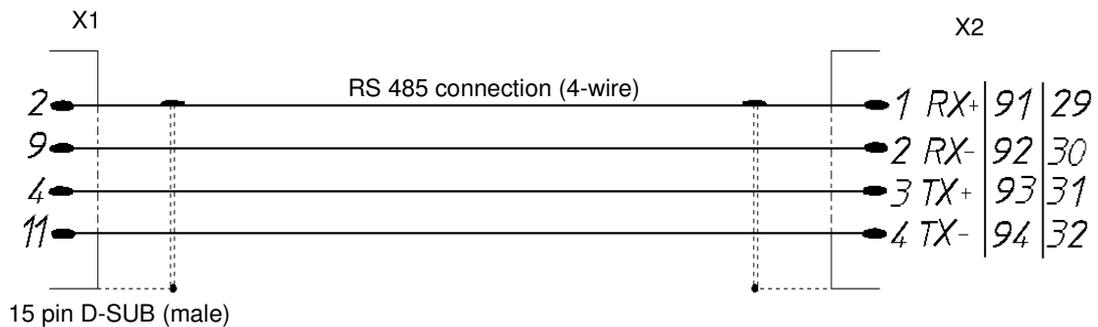
**5. RS 485 interface cable for Mincon/Simcon and DMR controllers**



*Pin assignment for RS 485 interface cable for Mincon/Simcon/Simpac and DMR controllers*

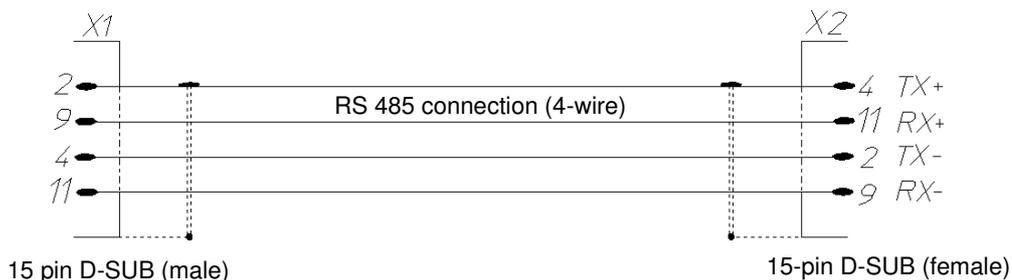
Bond the shielding over a wide area to the cable housing in each case.

**6. RS 485 interface cable for Dicon 50x/100x controllers and Imago 500**

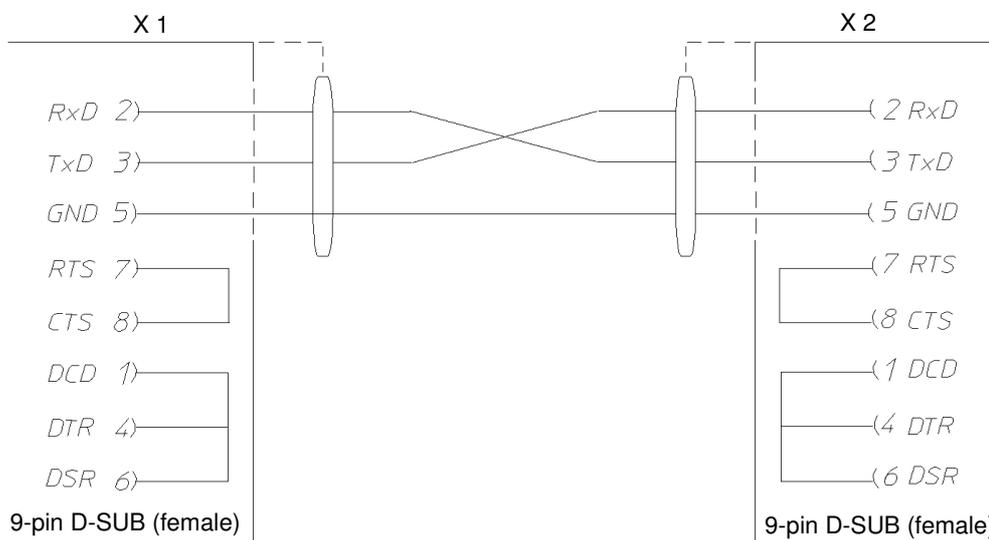


*Pin assignment for RS 485 interface cable for Dicon 50x/100x controllers and Imago 500*

7. RS 485 and RS 232 interface cables for Dicon SM

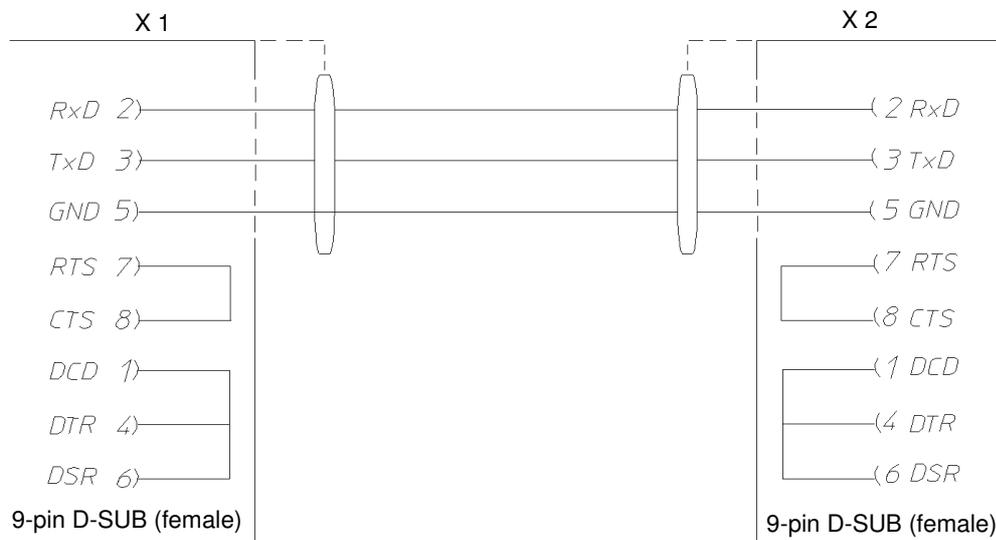


Pin assignment for RS 485 interface cable for Prodicon Plus and SBC controllers



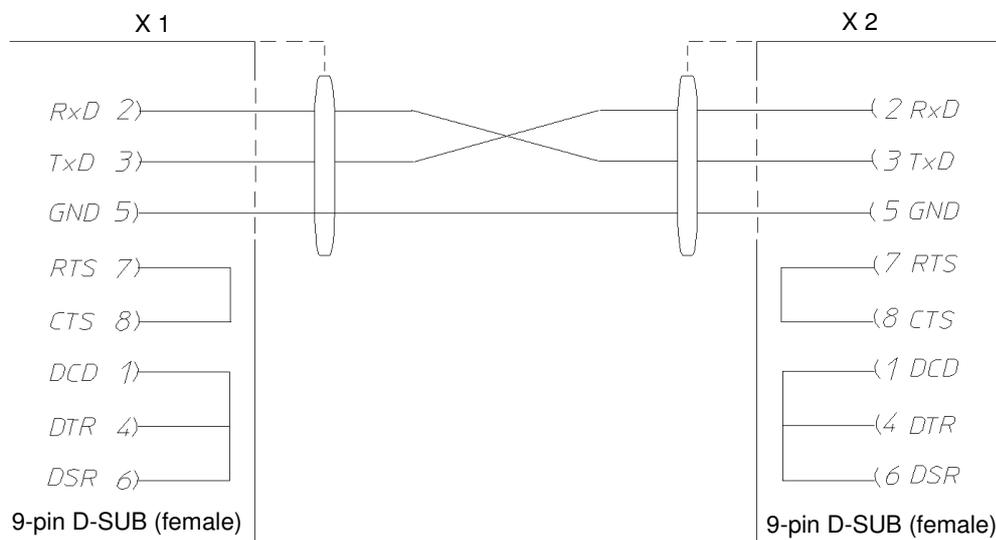
Pin assignment for RS 232 interface cable for Prodicon Plus and SBC controllers

**8. RS 232 interface cable for 2/3-channel process interface**



*Pin assignment for 232 interface cable for 2/3-channel process interface*

**9. RS 232 interface cable for Dicon PRS controllers**



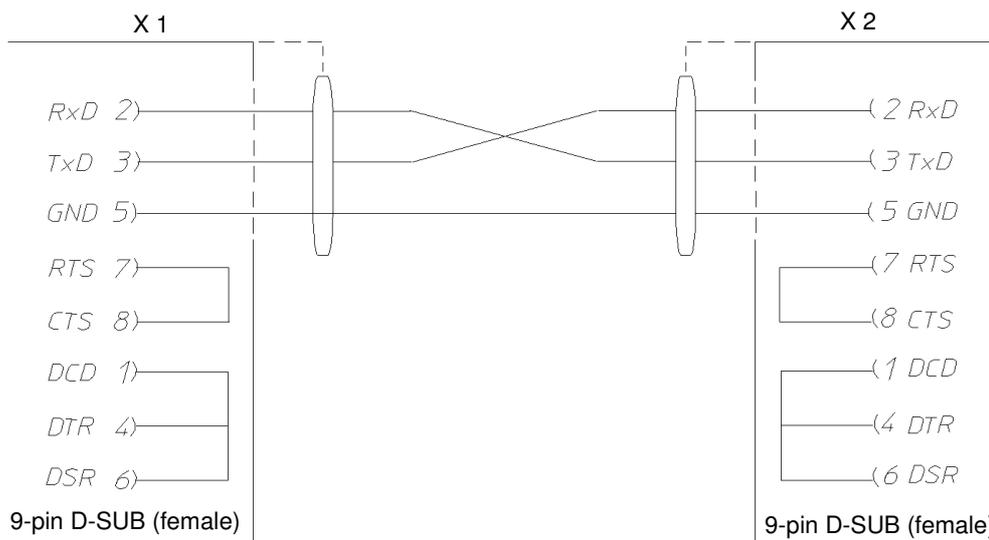
*Pin assignment for RS 232 interface cable for Dicon PRS controllers*

**10. RS 485 interface cable for Anaprog controllers**



*Pin assignment for RS 485 interface cable for Anaprog controllers*

**11. RS 232 interface cable for ZPG 2000/ZPR 2000 controllers**



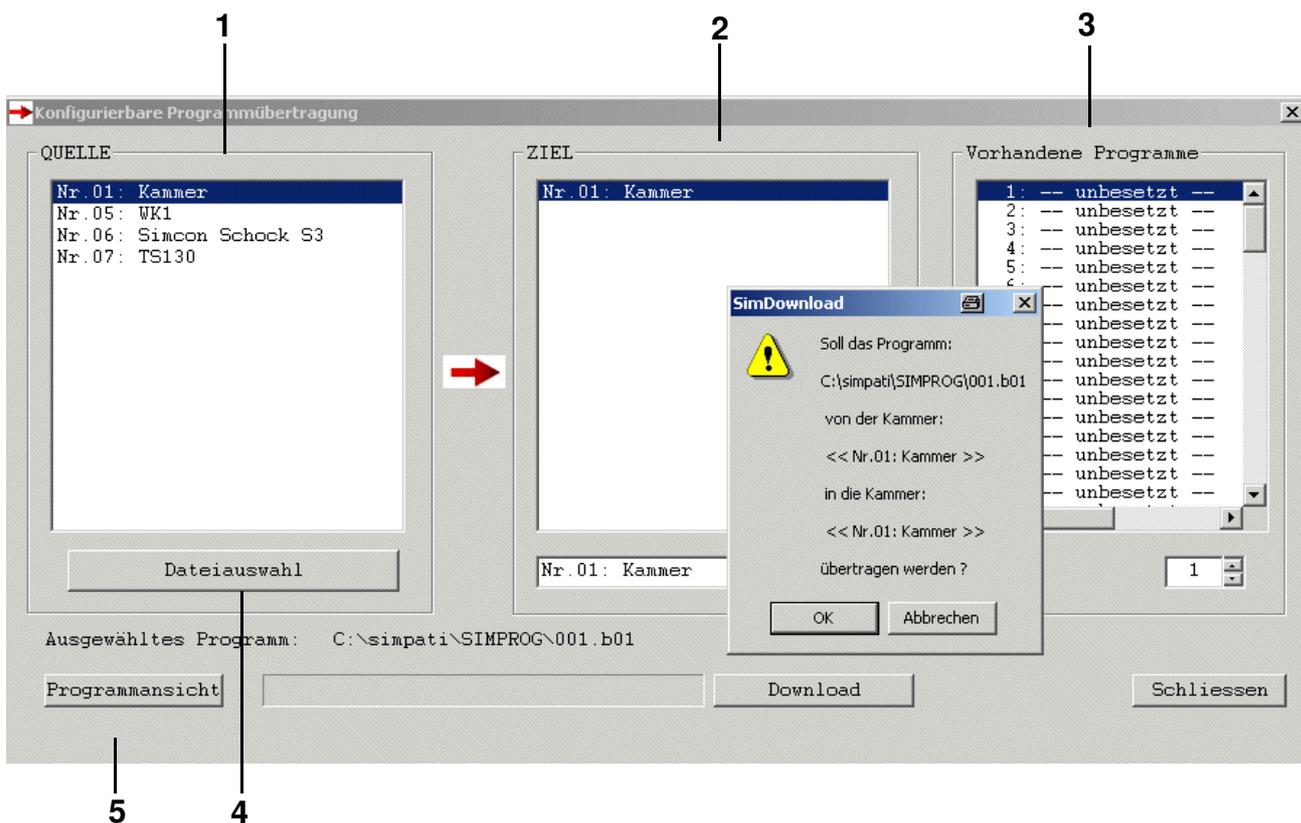
*Pin assignment for RS 232 interface cable for ZPG 2000/ZPR 2000 controllers*

## APPENDIX: THE APPLICATION »SIMDOWNLOAD.EXE«

This application can only be used for chambers with a Simcon, SImpac or Mincon controller. The interface is only available in German.

This application allows test programs created in SIMPATI for a chamber (*Pos. 1 Page 1*) to be uploaded to the chamber controller of this or a compatible chamber.

SIMPATI must be started, otherwise a download is not possible.



Main menu SimDownload

- 1 All chambers with a Simcon, SImpac or Mincon controller are shown.
- 2 Only the chambers which are compatible with the selected source chamber are shown here.
- 3 The test programs which are saved in the selected target chamber are shown here. Select the program no. under which the test program should be saved.
- 4 Select the test program which is to be uploaded to a chamber controller.
- 5 The symbolic editor opens. You can view the test program again.



---

## APPENDIX: HTTP SERVER

With the aid of this user interface it is possible to monitor the status of chambers from any PC via an intranet or Internet connection without needing to install SIMPATI.

The interface is only available in English.



### CAUTION

*Never install the HTTP server without consulting with your system administrator, as a free port and a valid IP address are required for the TCP/IP communication.*

## 1. Preconditions

### Monitoring PC

- Internet access
- Internet browser:
  - Opera
  - Netscape Communicator from version 4.xx
  - Microsoft Internet-Explorer from version 5.5
  - Mozilla Version 0.81
- The SIMPATI PC must be reachable via the hostname or IP address.

### Requirements for the SIMPATI PC to be monitored

- Administrator rights
  - Version 2.0 or higher must be installed and running on the SIMPATI PC.
  - The Web server simhttp.exe automatically generates html pages which can be loaded from any location in the network. This Web server must be running. It is located in the directory ..\simpati\system\
    - D1: an output window is opened on startup.
    - PXXXX: specification of the port XXXX which is accessed, the default value is port 7777.
- e.g.: c:\simpati\system\simhttp.exe -P7777 -D1

## 2. Starting the HTTP server

By default, the server uses port 7777.

### Manual start

- Activate the HTTP server via the file »simhttp.exe«.

### Automatic start?

To start the HTTP server with S!MPATI, make the following entry in the file »simpati.str«:

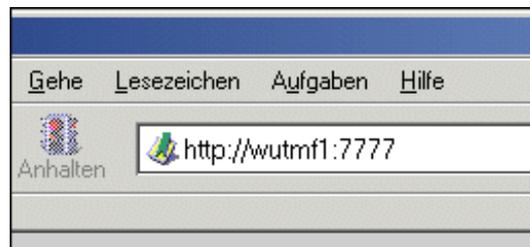
```
#
# httpServer running on Port 7000
70:01:simhttp:-P7000:
#71:01:simhttp:-P8000 -D1: running on Port 8000 and opens Debug Window
#
```

*Example of the file »Simpati.str«*

Various entries with different ports are possible at the same time.

## 3. Accessing S!MPATI

Enter the IP address or the hostname (with specification of the URL) of the S!MPATI PC.  
For instance, this may look as follows:



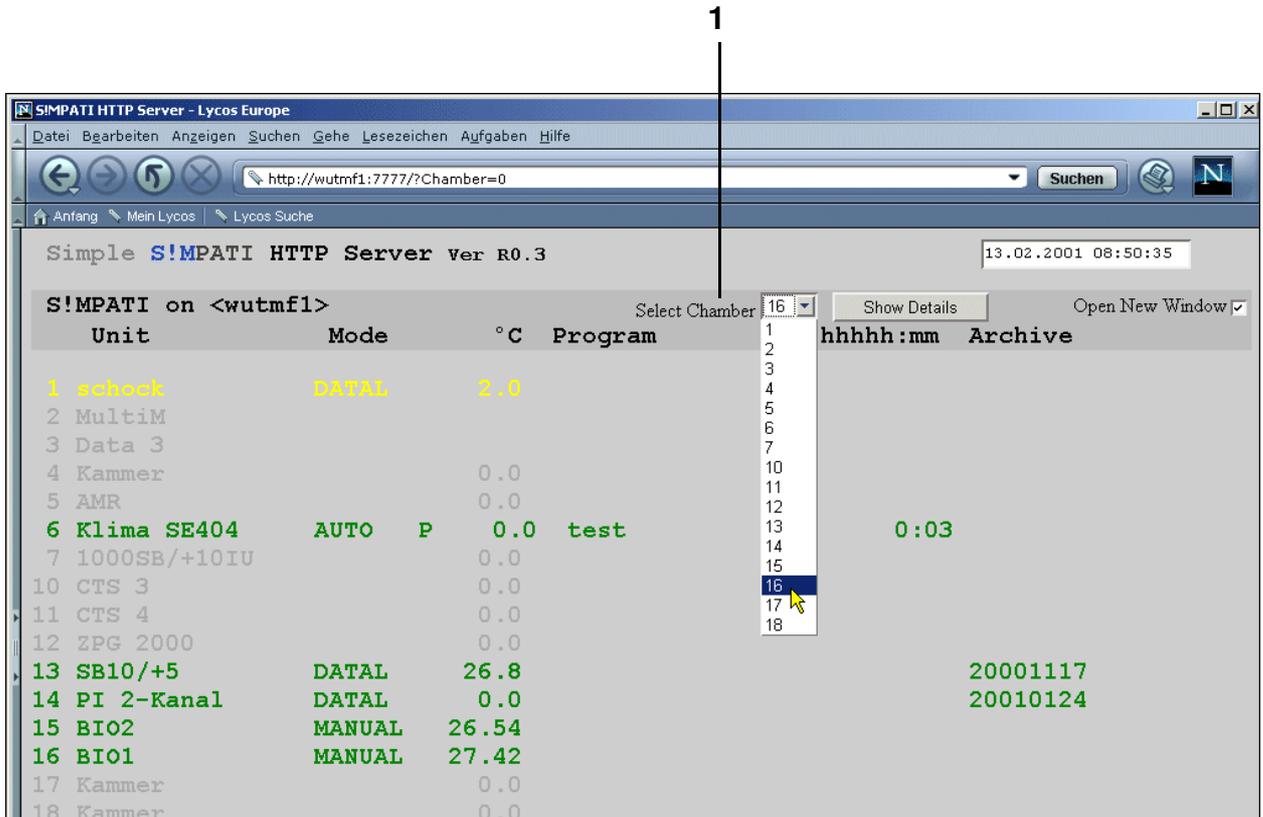
*Example S!MPATI PC address (here: Netscape 6)*

http:// - protocol (therefore the name of the server)?wutmf1 or 192.168.1.12 - hostname or IP address of the S!MPATI PC

:7777 standard port on the server, which expects inquiries from the client

The HTML page is then automatically generated and updated.

#### 4. HTTP server interface



Select the desired chamber from the list under *Pos. 1 Page 3* and you will receive the status display.

Simple S!MPATI httpServer Ver. R1.00 21.04.2004 13:49:37

S!MPATI on <wutmf3> Select Chamber 1 Show Details Open New Window

Unit	Mode	°C	Program	hhhh:mm	Archive
1 HeizOfen1	M	231.5			
2 HeizOfen2		24.2			
3 HeizOfen3		0.0			
4 HeizOfen4		0.0			
5 HeizOfen5		0.0			
6 HeizOfen6		0.0			
7 8990-6					
8 TS130	A		stress1	0:41	stress1
	[o]	B 190.0		Prog.End	Σ 10
	[ ]	H 219.0		20:04	Δ 2
		C -59.9			

Automatic Update every 120 Seconds, but I can't wait © TEDV - X.MMIIma

Example of the interface for a shock chamber

B 190.0: Temperature in the lifting basket  
 H 219.0: Temperature in the hot chamber  
 C -59.9: Temperature in the cold chamber

[o] Lifting basket position

0:41: elapsed time since the start of the test

Prog. End 20:04: the test is expected to end at this time (if necessary with date). This is an average value calculated from the duration and the number of elapsed cycles and the remaining cycles.

Σ 10: 10 more cycles must be run

Δ 2: 2 cycles have been rn

## APPENDIX: SIMPATIWEB SOFTWARE<sup>1)</sup>

The SIMPATIWeb application enables the following activities:

- Information requests relating to, e.g., chamber status or chamber configuration
- Starting or stopping tests in manual and automatic/program mode, i.e. changing set values and control variables, starting the test programs stored in the chamber controller
- View as line graphs

### 1. Installation and configuration

#### 1.1 Server requirements

**Operating system:**

**Windows Server 2003 or Windows Server 2003 Standard Edition**

**Windows components:**

**Internet Information Services (IIS) 6.0**

Standard configuration of the IIS server is assumed. If further security settings are configured on the server, the web application configuration may also changed as a result.

**Software:**

**SIMPATI 3.0 (implies the installation of .Net-Framework 1.1, if not already present)**

NET Framework 1.1 → CD in the directory: ..\netframe\.

**The following software can be useful for function tests:**

- Microsoft Internet-Explorer 7.0 / Mozilla Firefox 1.5.x.xx (the use of alternative browsers or versions may affect the display and available functions)
- Adobe FlashPlayer

**Computer Administrator rights**

The user who installs the SIMPATIWeb application must have Administrator rights.

#### 1.2 Client requirements

**Internet browser**

Microsoft Internet Explorer 7.0 / Mozilla Firefox 1.5.x.xx;

The use of alternative browsers or versions may affect the display and available functions.

**Adobe FlashPlayer**

as a browser extension, required for line graph displays

## 1.3 Installation

- Launch Setup.exe, follow the instructions in the dialog, finish installation.

### Installation protocols

The installation protocol can be found in the directory %windir%/Temp:

- InstallProtocol.txt: General log file in which the success of the main installation steps can be verified.
- ProtocolUser.txt: Log of the SimpatiUser creation and the account configuration
- ProtocolACL.txt: Log of the assignment of rights to the individual folders

### Configuration

- Verify whether the correct version of Framework is set for the S!MPATIWeb application:
  - Open: Manager / Computer Manager / Services and Applications / Internet Information Services and the installed web application (»SimpatiWeb«) under WebSites / Standard Website by right-clicking the mouse. In the Properties dialog, click on the ASP.NET tab entry and set the ASP.Net version to 2.0.50727.
- The user »SimpatiUser« will be created during installation. This user must have the right to "log in interactively" and to execute the programs required for S!MPATI → [1.2 \(Page 1\)](#) on the server.

### Configuring interactive login for SimpatiUser

Server configured as a domain controller

The Administrator must belong to the Domain Admin Group:

- Open: Manager / Security Guidelines for Domain Controller / Security Settings / Assign User Rights.
- Open the "Allow local login" menu option.
- Add SimpatiUser and adopt the settings.
- Restart the server.

Server not configured as a domain controller

Configuration is identical, but work with local security guidelines:

- Open Manager / Local Security Guidelines or run Gpedit.msc from the command console.

The S!MPATIWeb application can be started in the browser:

**Server:** [http\(s\)://localhost/SimpatiWeb](http(s)://localhost/SimpatiWeb)

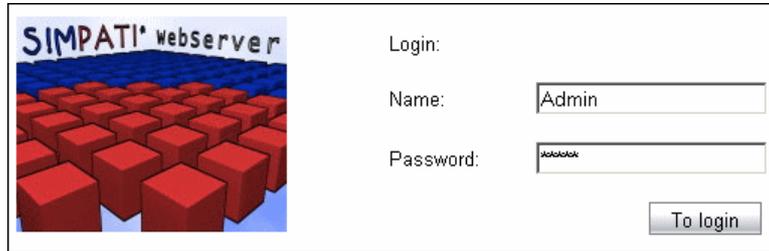
**Client:** [http\(s\)://IP\\_ADRESSE\\_SERVER/SimpatiWeb](http(s)://IP_ADRESSE_SERVER/SimpatiWeb)

### Server / Page certificate

The security configuration in the S!MPATIWeb application can be expanded by an encrypted transmission of confidential data. This would be for example passwords or user rights which authorise the user for certain actions at the chambers. This requires a Secure Socket Layer (SSL) connection (encrypted data transmission via a secure channel), which in turn requires a valid server certificate. It may be possible, depending on the security level to which the local Intranet is configured, to install a self-created certificate on the server. If no server certificate is installed, the confidential data are transmitted unencrypted and this allows chamber manipulation.

## 2. S!MPATIWeb login

Once the S!MPATIWeb home page has been opened, a login form will appear.



*S!MPATIWeb login*

The login requires the name and password of a valid S!MPATI user  
→ [Password \(Page 22\)](#).

Potential causes of login failure:

- Incorrect user name/password
- User has been deactivated in S!MPATI → [5.5 User administration \(Page 31\)](#)
- S!MPATI has not been started on the server
- S!MPATI is running on the server in the wrong context, i.e. S!MPATI is not executed by the SimpatiUser.

## 3. Logging off in S!MPATIWeb:



### **DANGER**

*The user must log out correctly to ensure that the S!MPATIWeb software runs without problems and to prevent unauthorised manipulation of the chambers. Once the user has completed his work, he must log out using the logout button → [Fig. S!MPATIWeb main menu, Page 5](#).*

If the browser is not used for more than 20 minutes, the user will automatically be logged out. He must log back in again to continue his work.

After closing S!MPATI, it is also important to terminate the S!MPATIWeb application. This prevents clients from being provided with obsolete information. The following steps are required in order to do this:

- Start Task manager (key combination: Ctrl+Alt+Del)
- Locate and close w3wp.exe.

#### 4. Main menu in SIMPATIWeb

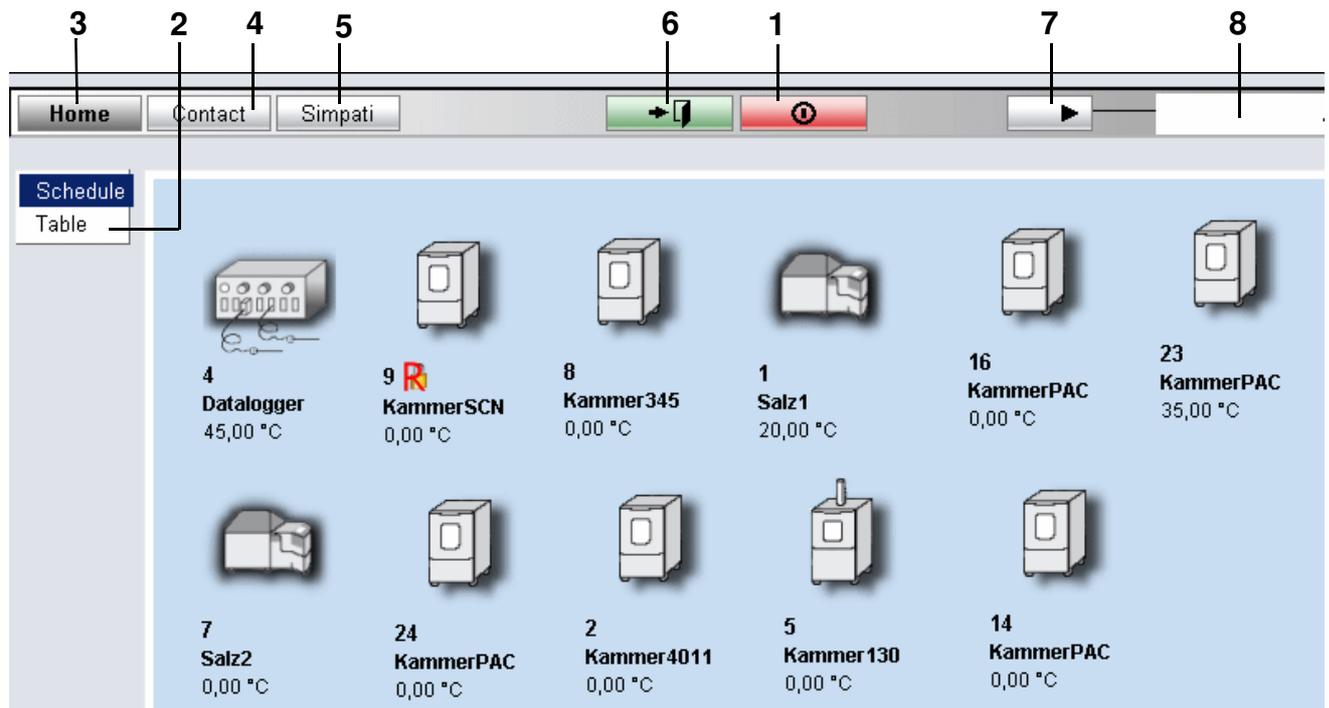
The main menu shown below appears after a successful login. The chamber symbol arrangement corresponds to the arrangement in SIMPATI.

Only those chambers for which the user has rights are displayed.



**NOTE**

We recommend that the access rights are assigned specifically for this user.  
 → Fig. User management – rights for the chamber Pos. 12



SIMPATIWeb main menu

- 1 Logout button
- 2 Toggle between table view → 4.2 (Page 7) and symbolic view
- 3 Navigates to the main menu
- 4 Navigates to the contact page containing company data
- 5 Navigates to the SIMPATI info page
- 6 Navigates to the previous page
- 7 Navigates to the info page where the user rights to each chamber in SIMPATI can be queried, description → Fig. User management – rights for the chamber
- 8 Name of the user who is currently logged in

The chambers are identified with the symbols according to the chamber and/or processing status.  
 → 5.1 Chamber symbols – function and representation (Page 27)

---

## 4.1 Changing the background image

You can change the background for the S!MPATIWeb application as follows. To do this, you will need to have access to the directories on the S!MPATIWeb server.

The default directory path is `..\inetpub\wwwroot\SimpatiWeb`.

Save your background image (bmp format) in the directory `..\inetpub\wwwroot\SimpatiWeb\Images\Symbols\` under the name `»simmain1.bmp«`

We recommend you use the same background image as in S!MPATI.

## 4.2 Table view

Alternatively, you may display the chambers in table form. → [Pos. 2 Page 5](#)

1	2	3	4	5	6	7	8	9
unit-ID	chamber-ID	Name	temperature [°C]	mode	status archiving	archive name	program name	time stamp
1	1	Salz1	20,00	online	<input type="checkbox"/>	20070724		25.07.2007 10:58:20
1	2	Kammer4	0,00	online	<input type="checkbox"/>			25.07.2007 10:58:20
1	3	Kammer40	0,00	online	<input type="checkbox"/>			25.07.2007 10:58:20
1	4	Datalogger	45,00	online	<input type="checkbox"/>			25.07.2007 10:58:20
1	5	Kammer130	0,00	online	<input type="checkbox"/>			25.07.2007 10:58:20
1	6	KammerP34	0,00	online	<input type="checkbox"/>			25.07.2007 10:58:20
1	7	Salz2	0,00	online	<input type="checkbox"/>			25.07.2007 10:58:20

*SIMPATIWeb in table view*

- 1 SIMPATI chamber number
- 2 Chamber number
- 3 Chamber name in SIMPATI
- 4 First control variable, usually temperature
- 5 Operating mode
- 6 Archive status
- 7 Archive name
- 8 Test program name
- 9 Time of last data update

The chambers are sorted by chamber number in SIMPATI. The lines are shown using the following colours according to chamber status:

grey	Chamber switched off
white	Chamber in standby mode
green	Test running
yellow	Warning signal
red	Alarm signal

## 4.3 Chamber operation



### NOTE

Please note that the data in the S!MPATIWeb application are queried and displayed with a time delay and/or at appropriate intervals.

To open the chamber operation menu, click the chamber symbol and/or the chamber name in the table → [Pos. 3 Page 7](#).

The screenshot shows the S!MPATIWeb interface with a left sidebar listing chambers (1-21) and a main content area. The main area has a top navigation bar with 'Home', 'Contact', 'Simpati', and 'Admin'. Below this are control buttons for 'auto', 'man', 'graf', 'info', and 'unlock'. A 'Datalogger' section shows a temperature of 45,00 °C. Below the controls is a sub-menu with options: 'controllers', 'set values', 'meas.values', 'counters', 'dig.outputs', 'dig.inputs', 'messages', and 'maintenance'. A table displays chamber data with columns for Index, Name, setpoint, act.value, unit, active, valid, alarm (min/max), warning (min/max), tolerance range (min/max), and time stamp.

Index	Name	setpoint	act.value	unit	active	valid	alarm (min)	alarm (max)	warning (min)	warning (max)	tolerance range (min)	tolerance range (max)	time stamp
1	Temperatur	45,00	45,00	°C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-118,00	218,00	-118,00	218,00	0,00	100,00	25.07.2007 11:03:01
2	Rel. Feuchte	50,00	50,00	%rF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-10,00	110,00	-10,00	110,00	0,00	100,00	25.07.2007 11:03:01

### S!MPATIWeb chamber information

- 1 Chamber selection
- 2 Navigates to the automatic/program mode page → [4.5 Automatic/program mode \(Page 10\)](#)
- 3 Navigates to the manual mode page → [4.4 Manual mode \(Page 9\)](#)
- 4 Navigates to the line graph display → [4.6 Generating line graphs \(Page 11\)](#)
- 5 Chamber information → [4.7 Chamber information \(Page 13\)](#)

[Pos. 7 Page 8](#) enables you to display parameter information (control variables, setpoints, measurement values, counters, digital outputs, digital inputs, messages).

5.1 Maintenance documentation → [4.7.1 Maintenance documentation \(Page 13\)](#)

- 6 Cancelling the disable

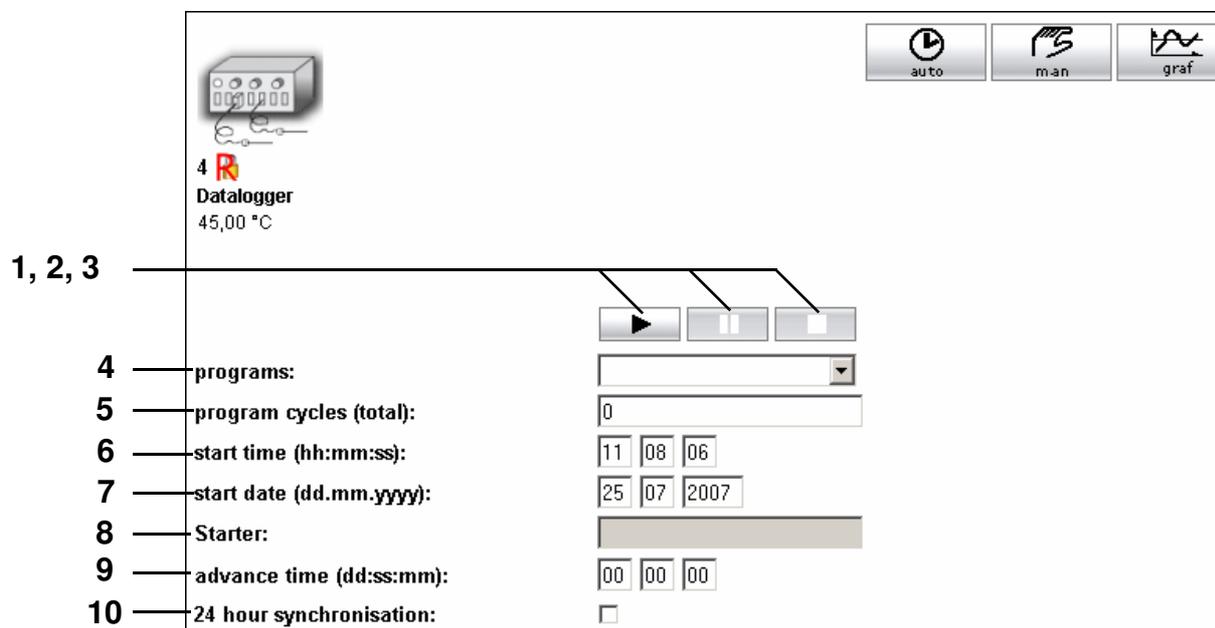
The disable may be cancelled by the user who has disabled the chamber or by a user who belongs to the Administrator Group in the S!MPATI User Manager.



## 4.5 Automatic/program mode

When changing into the mode for operating a chamber, chamber access is disabled for other users.

- Please refer to the description → [11 Starting/stopping a test program \(Page 115\)](#).



*S!MPATIWeb automatic/program mode*

1, 2, 3 Test program start, pause, stop

4 Test program selection

5 Number of loops

6 Start date of the test program

7 Start time of the test program

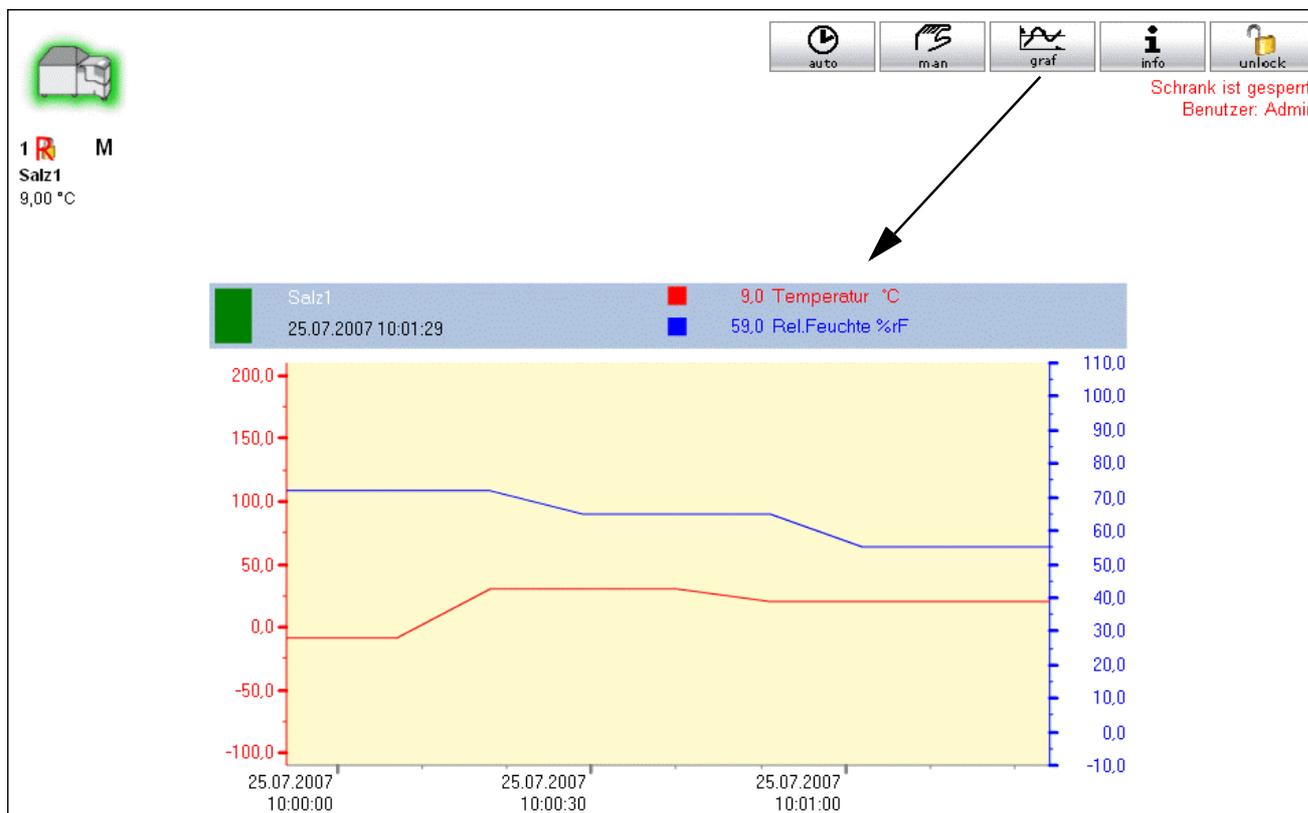
8 The test program starter is automatically accepted.

9 Program advance by the time entered here

10 Start with 24 hours synchronisation → [Fig. Starting/stopping a test program Pos. 11 Page 115](#)

## 4.6 Generating line graphs

To generate a line graph (control variables shown in graphic format), an additional module called »SimFlashGraph.exe« must be started.



→ 4.6.1 Starting the line graph and SIMPATI simultaneously (Page 12)

The last 24 hours of the test program can be displayed as a line graph.

The line graph of each chamber is saved in the corresponding chamber directory under ..\simpati\measure (\*.swf).

- Make sure that these directories are available.  
The directories for the first 10 chambers are created automatically. If the corresponding folder does not exist you will need to create it.

The data are updated while SIMPATI is running. After this they are kept but are no longer up-to-date.

#### 4.6.1 Starting the line graph and S!MPATI simultaneously

To start SimFlashGraph and S!MPATI simultaneously, the file `..\simpati\system\simpati.str` must be expanded accordingly.

If the SimFlashGraph is started without parameters (i.e. without a chamber number here), then this program will generate a line graph for all chambers.

Example:           60:01:SimFlashGraph:

With a large number of chambers this can therefore lead to delays in data acquisition and therefore inaccuracies. As a result, we recommend starting the SimFlashGraph in groups of 10 chambers.

Example:           60:01:SimFlashGraph:1 10:  
                    60:01:SimFlashGraph:11 20:

In this example, SimFlashGraph is started twice: once for the first 10 chambers (1 to 10) and once for the second 10 chambers (11 to 20).

## 4.7 Chamber information

### 4.7.1 Maintenance documentation

SIMPATIWeb maintenance

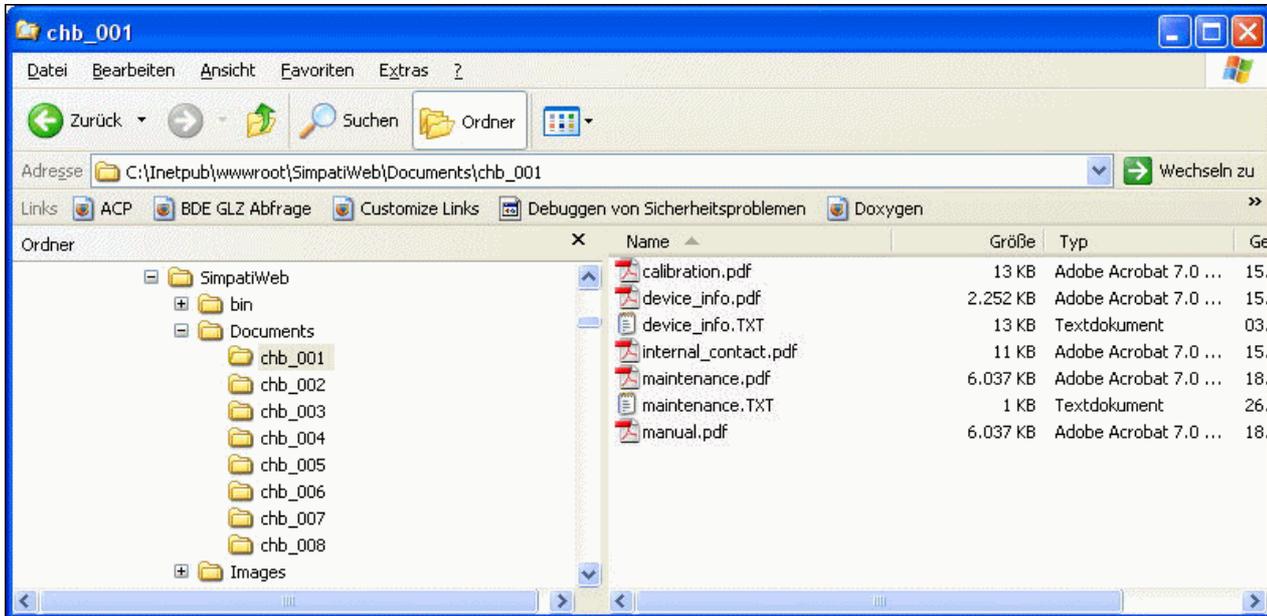
	The document is saved with the correct name on the server, the link is active.
	Document missing, the link is not active.

Some documents have defined names:

- 1 General chamber information (e.g. inventory number, device number, supported protocols etc.) in PDF format, required name: device\_info.pdf
- 2 Supplementary information about the chamber which can be created using any editor, required name: device\_info.txt
- 3 Operating manual for the chamber, required name: manual.pdf
- 4 Maintenance report which was created using any editor after the last maintenance, required name: maintenance.txt
- 5 General maintenance documentation, required name: maintenance.pdf
- 6 Calibration certificate for the chamber, required name: calibration.pdf
- 7 Contact data for the service personnel, required name: internal\_contract.pdf

**Storage of the documents on the server:**

The documents are saved as follows according to the assigned chamber numbers in the directory of the S!MPATIWeb application:



The directories for the first 10 chambers are created automatically. If the corresponding folder does not exist you will need to create it.

chb_	Stands for chamber
00X	Chamber number

---

## APPENDIX: ETHERNET INTERFACE

The Ethernet interface is intended solely for use with the SIMPATI software package.

**NOTE**

*If SIMPATI networking is implemented in the LAN, it must be ensured that no conflicts with other network users arise when using the communication paths and addresses (e.g. double connections). We strongly recommend that you have your network administrator set up the network.*

**NOTE**

*Improper configuration may adversely affect network operation even outside the SIMPATI networking.*

**NOTE**

*The MAC address can be found on the processor if you have a Simcon controller, or on the frame of the control board if you have a Simpac controller.*

### 1. Preparation

- Configure the chamber.
- Assign each chamber its own IP address and make sure that the IP address has only been assigned once in the entire network. The IP address is configured using the control unit. If this option is not available, the Ethernet interface will not be enabled. Please contact the hotline.

The preset port 7777 can usually be used as the port. Ports in the range 7001 – 7999 can be chosen as an alternative.

**NOTE**

*When uploading and starting the driver, the appropriate port also has to be entered.*

### 2. Making the network connections

- Connect the controller to the nearest intended hub or switch using a suitable network cable.

### 3. Checking the network connection to the PC

- Make sure that the intended PC is connected to the network and that the TCP/IP installation has been carried out correctly.
- The connection to the appropriate chamber can be tested via »Execute Start«.

Example: → 5. »[Checking the network connection](#)« (Page 3)

If the test was successful, the chamber configuration can be read in the next step.

### 4. Reading the configuration file »Scanning«

- Make sure that SIMPATI has not been started.
- Start the scanning process in the directory ..\simpati\system by entering the following:
- `Simc2k /SCAN_TCPIP#[IP address]#7777#[Index]#[logical address]`  
Index: SIMPATI chamber number, e.g. 1, 2, 3, 4 etc.  
Logical address between 51 and 99  
Example: → 5. »[Reading the configuration file »Scanning](#)« (Page 4)

Use a different logical address for each chamber.

The chamber configuration is now read out. The following window is shown if the readout was successful.

An entry in the directory ..\simpati\system is generated for each chamber in the process.



→ [Reading the configuration file »Scanning](#)« (Page 4)

Repeat this step in the event of an error. If this does not work, check the IP address and port on the control unit.

- Check the connection again using the command: ping [IP address].
- Also upload the configuration for all of the other chambers which are to be networked via Ethernet.

### Adapting the file "Simpati.str"

The Simpati.str file contains e.g. the following entry:#30:01:simc2k:/Com#TCPIP\_XX:

(XX logical address in the range 51 – 99)

Generate a line for each chamber connected via Ethernet, replacing XX with the appropriate logical chamber address assigned during scanning.

- Start SIMPATI via the short cut on the desktop.

## 5. Example of networking two chambers via Ethernet

Assigned IP addresses:

1st chamber: 192.168.121.36

2nd chamber: 192.168.121.37

The directory is: ..\simpati\system

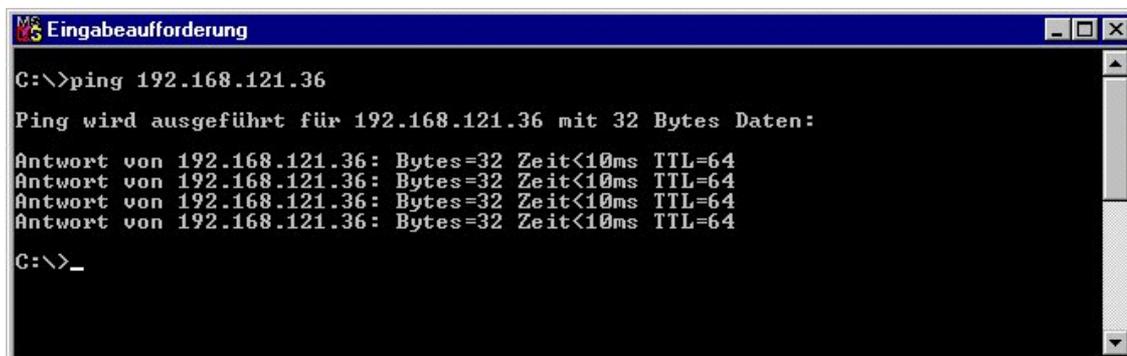
### Checking the network connection

- Open the file "cmd.exe":



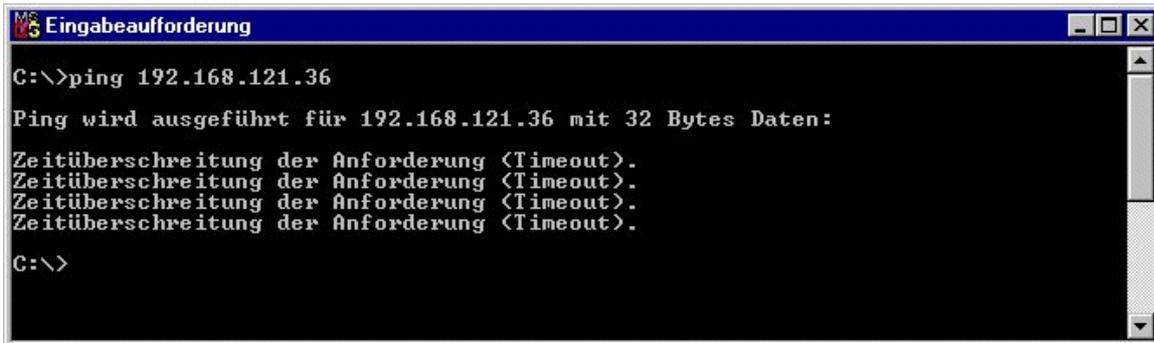
- Input: ping 192.168.121.36

Response:



The connection is OK.

Response:



```
C:\>ping 192.168.121.36
Ping wird ausgeführt für 192.168.121.36 mit 32 Bytes Daten:
Zeitüberschreitung der Anforderung <Timeout>.
Zeitüberschreitung der Anforderung <Timeout>.
Zeitüberschreitung der Anforderung <Timeout>.
Zeitüberschreitung der Anforderung <Timeout>.
C:\>
```

- Check the communication path.

### Reading the configuration file »Scanning«

The directory is: ..\simpati\system

- → [Open the file "cmd.exe": \(Page 3\)](#)
- Entries:



```
C:\WINNT\system32\cmd.exe
C:\>c:
C:\>cd simpati\system
C:\simpati\system>
```

- Input: simc2k /SCAN\_TCPIP#192.168.121.36#7777#1#51

Response



Upload OK.

This function uploads the chamber connected via the LAN with the IP address 192.168.121.36, port 7777 as chamber no. 1 with the logical address 51

Storage of the configuration → [Fig. System configuration Pos. 7 Page 9](#)

Response:

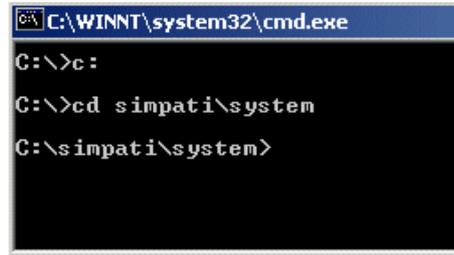


- Check the protocol selection and port on the control unit and adjust them if necessary, → [Checking the network connection, Page 3](#)

## Chamber 2

Repeat these steps for the second chamber with the address 192.168.121.37

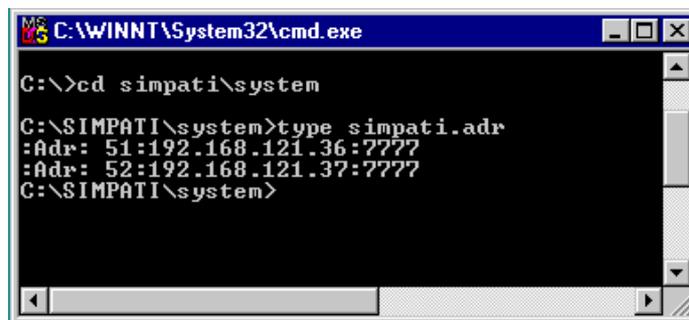
## 6. Checking the address table



```
C:\WINNT\system32\cmd.exe
C:\>c:
C:\>cd simpati\system
C:\simpati\system>
```

- Input: type simpati.adr

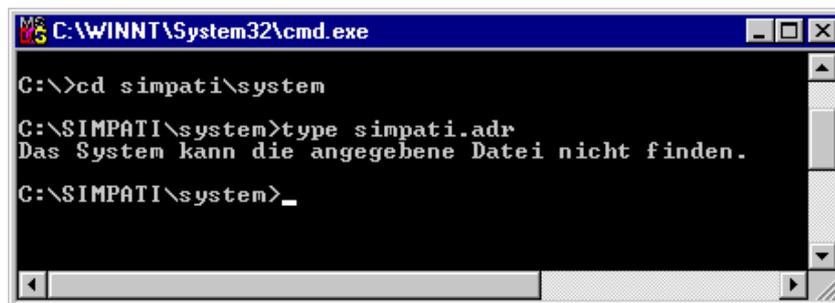
Output:



```
C:\WINNT\System32\cmd.exe
C:\>cd simpati\system
C:\SIMPATI\system>type simpati.adr
:Adr: 51:192.168.121.36:7777
:Adr: 52:192.168.121.37:7777
C:\SIMPATI\system>
```

OK.

Output:



```
C:\WINNT\System32\cmd.exe
C:\>cd simpati\system
C:\SIMPATI\system>type simpati.adr
Das System kann die angegebene Datei nicht finden.
C:\SIMPATI\system>_
```

Error: The file Simpati.adr has not been created.

Repeat steps → [Checking the network connection, Page 3](#) and → [Reading the configuration file »Scanning«, Page 4](#)

- Start SIMPATI

## APPENDIX: TCP/IP INTERFACE

Other applications such as LabView or HP VEE Lab can communicate across platforms with SIMPATI via the Windows TCP/IP socket interface and can therefore exchange all relevant process data with SIMPATI.

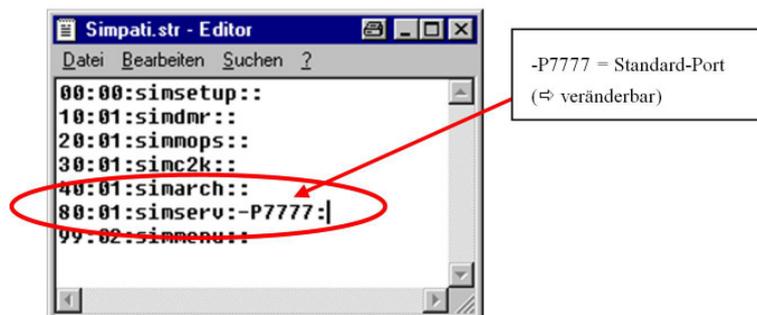
### 1. Installation

The TCP/IP server software is started with the entry (80:01:simserv:-P7777:) in the file simpati.str, which is located in the directory c:\simpati\system.



#### NOTE

*Never install the TCP/IP server software without consulting your system administrator!*



#### CAUTION

*Exit SIMPATI before you make changes to the configuration. The Notepad program contained in Windows must be used to open the file.  
For the entries, make sure to use running numbering.  
Incorrect entries can lead to a crash of SIMPATI!*

## 2. Command structure

Command function No.	TZ	Chamber index	TZ	Argument 1	TZ	Argument 2	TZ	etc, up to 4 arguments, depending on the function	CR
----------------------	----	---------------	----	------------	----	------------	----	---	----

TX=Z = separator character = "¶" (ASCII 182)

CR = CarriageReturn (\r) end of command

EXAMPLE:

Command – set temperature setpoint

SET SETPOINT

Command function No.	TZ	Chamber index 1-23	TZ	Control variable index 1 = temperature	TZ	Setpoint	End of command
11001	¶	2	¶		¶	25.0	CR

## 3. Response

1	TZ	23.90	CR
---	----	-------	----

General structure

ErrorCode	TZ	Value 1	TZ	Value 2	TZ	etc. depending on the function up to 4 return values	CR
-----------	----	---------	----	---------	----	--	----

or in case of error

ErrorCode	CR
-----------	----

where the following error codes are possible:

1	Success
-1	The data string was empty
-2	Missing chamber ID
-3	Chamber ID is in an invlaid range
-4	Chamber not present
-5	Unknown command ID
-6	Too few or incorrect parameters
-7	No server (for server service functions)

**NOTE**

*It is not possible to establish a permanent socket connection to the server.  
Thereby a server can serve several clients simultaneously.*

*The following structure must consequently be observed for every command*

- Set up connection
- Transmit command
- Read response
- Close connection

#### 4. Available functions

Command	Command function No.	Argument 1	Argument 2	GET response
<b>CHAMBER INFORMATION</b>				
GET CHAMBER NAME	10006			CHAMBER NAME
GET CHAMBER TYPE	10017			VÖTSCH 10001 WEISS DMR 20001
GET CONTROL VARIABLE_COUNT	11018			Count CONTROL VARIABLE
GET DIGITAL CHANNEL_COUNT	14007			Count DIGITAL CHANNEL
GET COUNTER_COUNT	16001			Number of COUNTERS
GET ERROR_COUNT	17002			Number of ERRORS
GET OPERATING STATUS	10012			PRESENT 0x1 RUN 0x2 WARNING 0x4 ERROR 0x8
GET OPERATING MODE	10010			DATA LOGGING 0x01 MANUAL 0x02 AUTOMATIC 0x04 PAUSE 0x08 BUSY 0x10
GET SCANNING CYCLE TIME	10034			SCANNING CYCLE TIME
GET ARCHIVE PATH	10024			Text
GET PROGRAM PATH	10026			Text
<b>CONTROL VARIABLE</b>				
GET NAME	11026	Index		NAME
GET UNIT	11023	Index		UNIT
SET SETPOINT	11001	Index	Value	
GET SETPOINT	11002	Index		SETPOINT
GET ACTUAL VALUE	11004	Index		ACTUAL VALUE
GET INPUT LIMIT MIN	11007	Index		MIN
GET INPUT LIMIT MAX	11009	Index		MAX
GET WARNING LIMIT MIN	11016	Index		MIN
GET WARNING LIMIT MAX	11017	Index		MAX
GET ALARM LIMIT MIN	11014	Index		MIN
GET ALARM LIMIT MAX	11015	Index		MAX

<b>SETPOINT</b>				
GET NAME	13011	Index		NAME
GET UNIT	13010	Index		UNIT
GET SETPOINT	13005	Index		SETPOINT
SET SETPOINT	13006	Index	Value	
GET INPUT LIMIT MIN	13002	Index		MIN
GET INPUT LIMIT MAX	13004	Index		MAX
<b>MEASUREMENT VALUE</b>				
GET NAME	12019	Index		NAME
GET UNIT	12016	Index		UNIT
GET ACTUAL VALUE	12002	Index		ACTUAL VALUE
GET WARNING LIMIT MIN	12010	Index		MIN
GET WARNING LIMIT MAX	12011	Index		MAX
GET ALARM LIMIT MIN	12008	Index		MIN
GET ALARM LIMIT MAX	12009	Index		MAX
<b>DIGITAL CHANNELS output</b>				
SET DIGITALOUT	14001	Index	1 / 0 ON/OFF	
GET DIGITALOUT	14003	Index		DIGITALOUT, 0/1
<b>DIGITAL CHANNELS input</b>				
GET DIGITALIN	15002	Index		DIGITALIN, 0/1
<b>COUNTER</b>				
GET NAME	16015			NAME
GET ACTUAL VALUE	16003			COUNTER value
<b>ERROR</b>				
GET ERROR TEXT	17007	Index		ERROR TEXT
GET ERROR STATUS	17009	Index		ERROR STATUS, 0/1
GET ERROR CLASS	17005	Index		Controller 1 = alarm 2 = warning 4 = note  SIMPATI 5 = alarm 6 = warning

<b>AUTOMATIC MODE</b>				
SET STARTZPGPRGNUMMER	19014	Program No.	Loops	
SET STOPZPGPRG	19015			
SET DOWNLOAD	19001	Program name	Program slot	
GET PROGRAM STATUS	19062	0		TRUE / FALSE (1/0)
SET PROGRAM mode	19050	PAUSE 0x20 STOP 0x40		
<b>ARCHIVING</b>				
SET ARCHIVE NAME	18011	Archive name		
SET ARCHIVING	18050	START 0x20 STOP 0x40		
SET ARCHIVE COMMENT	18023	Text		
GET ARCHIVE COMMENT	18024			Text
GET ARCHIVE NAME	18012			Text

---

## APPENDIX: OPERATION OF A TYPE TS 130 SHOCK CHAMBER WITH SIMCON/32 CONTROLLER UNDER THE SIMPATI SOFTWARE PACKAGE

### 1. General

In the program representation via SIMPATI, care must be taken that a setpoint of at least 15 minutes is input for control value No.3 "Max.Umtemp.Zeit" [maximum temperature change time].

If the control value is not programmed (target value = 0) this leads immediately after the program starts to error message "A031: Wait function time exceeded".

In order that the control value is always initialised to at least 15 minutes, the steps below must be performed once during installation (or later as well).

### 2. Exit SIMPATI

Exit the SIMPATI software package

### 3. Editing the configuration file

Open the configuration file (impat.cxx) of the corresponding system with a text editor (e.g., Notepad) and change the MIN value of control value 3 from 0.0 to 15.0 The files can be found in the directory c:\simpati\init.

```
/** analog output ** short/long/unit/Min-Max/ID *****/
```

```
:ST:001:Dreh:Vent.Drehzahl :% : 30.0: 100.0:1:
```

```
:ST:002:ABT :Abtauen      : : 0.0:1000.0:2:
```

```
:ST:003:MUZ :Max.Umtemp.Zeit :Min : 15.0: 100.0:3:
```

Close and save the file.

### 4. Delete shared memory

- 

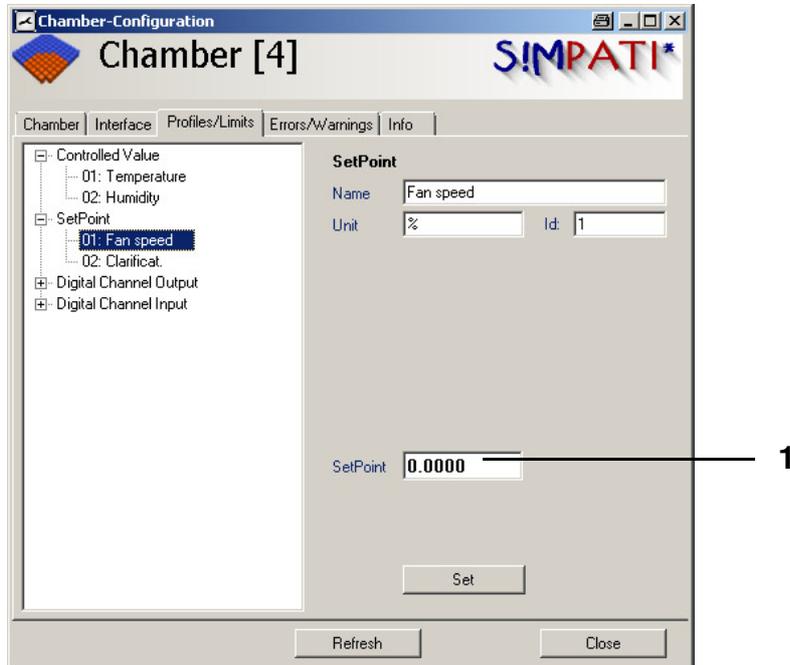
- Delete the hidden files sim.cxx in the directory c:\simpati\system.  
(xx = system number)

### 5. Start SIMPATI

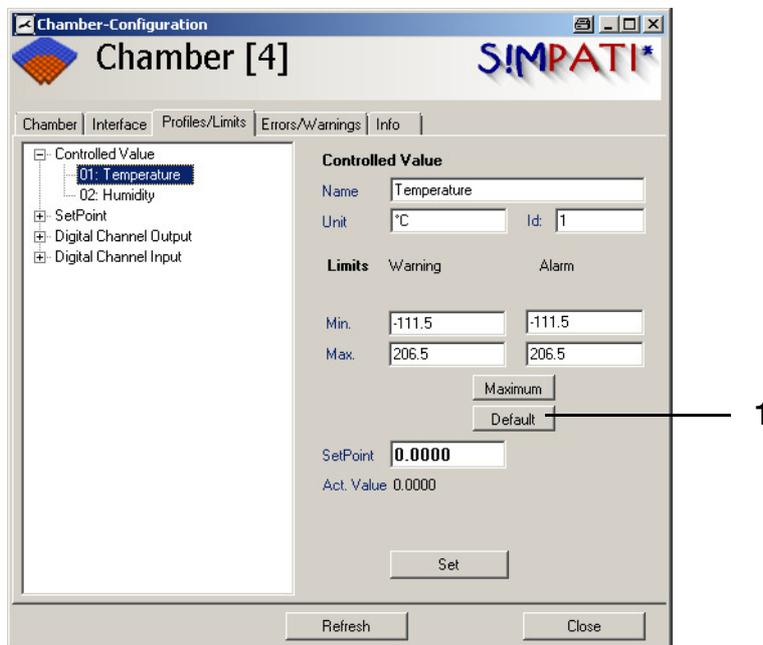
- Start the SIMPATI software package.

## 6. Initialise limit value

- Click with the right mouse button on the relevant system in the SIMPATI main menu and select the "Limits" menu.



- Set the setpoint (1) of the control value to "15.0".



- Click on "Default" (1) for a control variable and then on "Set".

---

## APPENDIX: ADVANCED INSTALLATION FOR OPERATION IN THE PHARMACEUTICAL FIELD

This application is compliant with: 21 CFR (Code of Federal Regulations) Part 11.

### 1. Objectives

The SIMPATI software package is installed on the PC of the computer administrator in such a way that installation, configuration and starting can be carried out with SIMPATI administrator rights.

The users work on the PC with restricted standard user rights only. This hides the SIMPATI installation (installed files and folders) from the user, and it is not possible for the user to manipulate or delete files or processes.

### 2. User administration in SIMPATI and enabling 21 CFR Part 11

- To start with, the system needs to be configured. This is done by running the application MakeXML.exe once. This program can be found in the directory `..\simpati\system`. This will ensure that the user administration (created users and passwords) is only valid on this PC, as a direct connection to the registry is created. A file called "XMLDefaultCrypt.xml" and a file called "NonValidPasswordsCrypt.xml" are created. We recommend asking the system administrator to make backup copies of these files, as they can be used to restore the user administration to its original status.
- When logging on to SIMPATI for the first time, enter the password »admin«. You will then be prompted to change the password. The new password must be at least 8 characters long (the minimum length can be configured between 8 and 15 characters, but 8 is selected by default). In addition, the chosen password must have a certain degree of complexity. It must contain three of the following character categories:
  - Upper case letter (A, B, C ... Z)
  - Lower case letters (a, b, c ... z)
  - Numbers (1, 2, 3 ... 9)
  - Special characters, symbols, punctuation marks ( { } [ ] , . < > ; : , " ? / \ | ` % ^ & \* ( ) \_ - + = )
- The password cannot be entered from the clipboard via cut & paste or via keyboard/mouse events.
- Passwords expire after 60 days (40 days for guests, but this can be increased to up to 999 days by the administrator) and must be renewed. You will be prompted to do this automatically when you log on. Once passwords have been used, they are no longer valid and are stored in an encrypted file which cannot be viewed.
- Individual user passwords cannot be viewed by the administrator, including ones which have expired.
- The administrator can block and enable individual users.
- Only one user at a time can be logged on.

- The number of unsuccessful log-on attempts after which an individual user is blocked is set to 3 attempts by default (this can be configured between 1 and 10 attempts).
- The administrator assigns system and chamber-specific rights to the individual users; the administrator can change these rights at any time.
- Individual users can be managed and grouped in various user groups (administrators, users and guests). It is also possible to define users independently of groups.
- The user is automatically logged off if there is no activity in the system for a period of five minutes. He or she will then need to log back on again in order to continue working.

### 3. System prerequisites

- Windows operating system Microsoft 2000
- Windows operating system Microsoft XP Professional
- ServicePack 1 or higher
- Uninterruptible power supply to the PC

### 4. System configuration by the computer administrator

The computer administrator must make sure that the following requirements have been met:

- The folder option (under Tools in Explorer) »Simple file sharing« is inactive. This makes advanced security settings available to the appropriate folders.
- The monitoring function of objects must be active.  
The success or failure of object accesses to the directory "..\simpati" and its subdirectories is monitored.
- The SIMPATI administrator must not delete any objects in the directory ..\simpati and its subdirectories after installing SIMPATI.
- Users must not be able to shut down the system.

### Access permissions

- Create a SIMPATI administrator »simpatiadmin« who has the sole permission to access the directory ..\simpati and its subdirectories but cannot delete directories or objects.
- Create a restricted account for each user.  
Choose the settings in such a way that the directory ..\simpati is not accessible. The user can access SIMPATI applications only with these access rights.  
Also observe the instructions → [The user logs out. \(Page 3\)](#)

## 5. The user logs out.

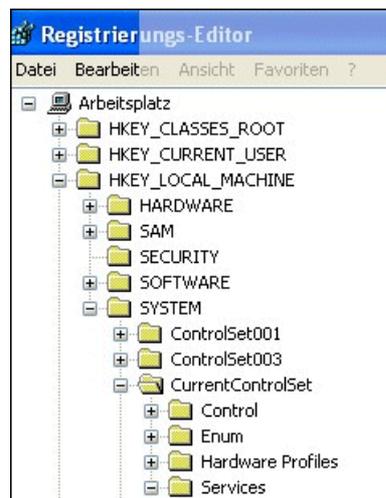
If SIMPATI is started with "Simstart.exe" as a collection of applications via the shortcut on the desktop, all SIMPATI applications including communications and archiving are stopped when the user logs out.

As an alternative, the SIMPATI core processes can be started as Windows services (by the SIMPATI administrator) which continue to run when a user logs out (not yet possible under Windows 7 and Windows Server 2008).

The following procedure describes the installation of the SIMPATI standard services "Simcreate.exe", "Simarch.exe" and "simc2k.exe".

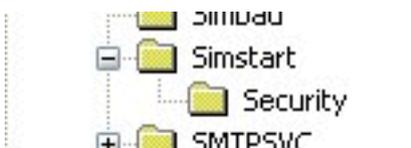
## 6. Starting SIMPATI as a service (not yet possible under Windows 7 and Windows Server 2008)

- Switch to the directory ..\simpati\services.
- Create the Simstart service in the registry;, the command reads: `Instsrv Simstart ..\simpati\services\srvary.exe` and appears under `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services`

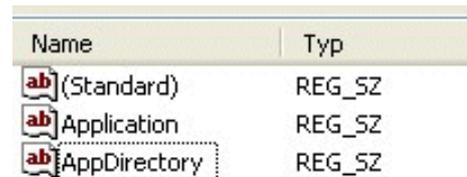


As shown in the following, a registry key must be added:

- Open the registry, the command is: `regedit`
- Switch to the directory `...HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Simstart`, create a new key »Parameters« by right-clicking.



- Create an »Application« string in »Parameters«.
- Create an »AppDirectory« string in »Parameters«.



The value for the application is C:\simpati\system\simstart.exe if SIMPATI has been installed in c:\simpati.



The value for »AppDirectory« is C:\simpati\system if SIMPATI has been installed in c:\simpati.

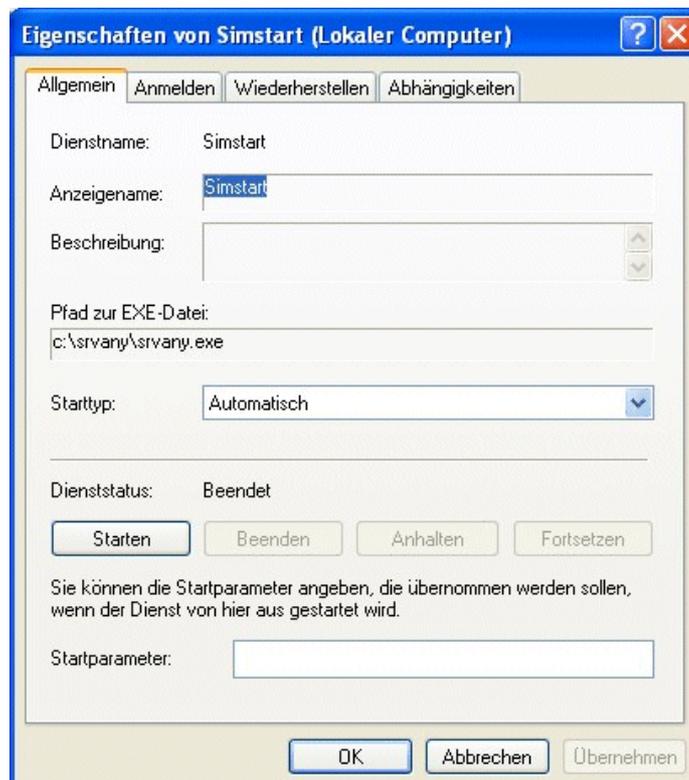
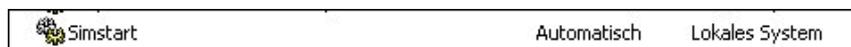


This results in the following entries in the registry (example):

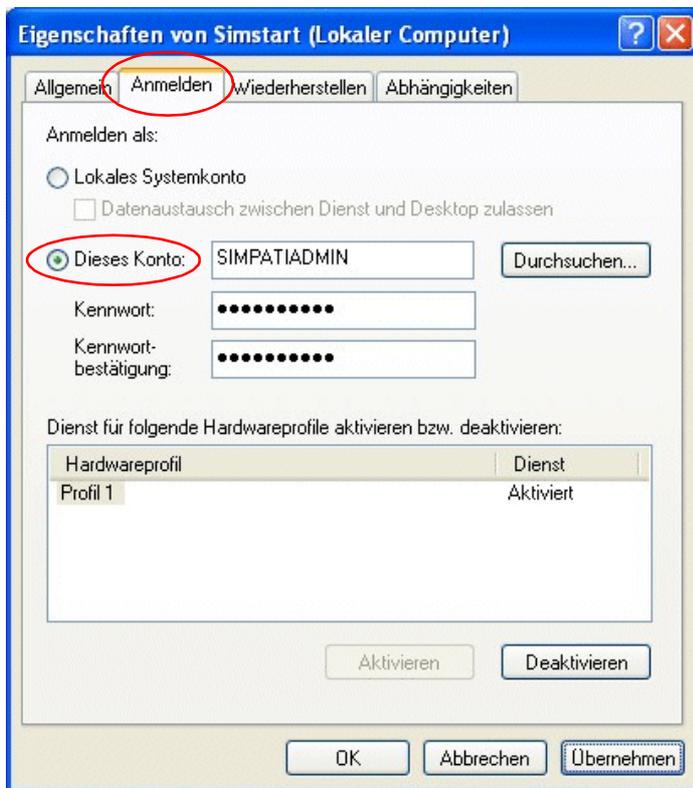
Name	Typ	Wert
(Standard)	REG_SZ	(Wert nicht gesetzt)
Application	REG_SZ	C:\Simpati\System\simstart.exe
AppDirectory	REG_SZ	C:\Simpati\System

The Simstart service still has to be subsequently linked to the Windows user account of the SIMPATI administrator. This happens under Control Panel/Services (Windows 2000 and Windows NT) or under Control Panel/Performance and Maintenance/Services (Windows XP).

Double-clicking on the service Simstart opens the following window:



Under the »Logon« tab select »This account«. The user name »Simpatiadmin« and the appropriate password are entered there.



**NOTE**

*In order for the mechanism shown below to run, a special start file (simpati.str) must have been implemented in SIMPATI.*

For the Simcon, Simpac and Mincon controllers, the file ..\simpati\system\simpati.str must contain the following process calls:

```
00:00:Simsetup::
10:01:Simc2K::
20:01:Simarch::
```

The existing and valid file »simpati.str« can also be adapted. The process call for the SIMPATI main menu is commented out or disabled with »#«.

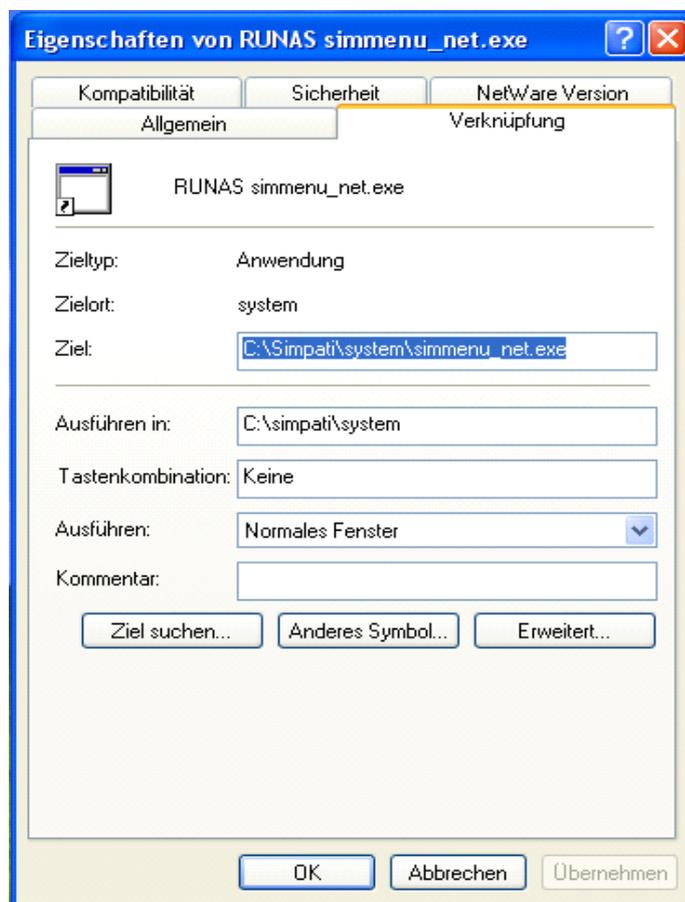
```
00:00:Simsetup::
10:01:Simc2K::
20:01:Simarch::
# 99:01: simmenu_net::
```

A shortcut is then created on the interface to start the SIMPATI main menu. Prior to starting, the password for »Admin« is requested in case the logged on Simpati user is not the Simpati administrator.



Shortcut

Systempted\ runas /env /user:Simpatiadmin simmenu\_net.exe



**NOTE**

*Copy this shortcut to the profile for the default user. The shortcut is then available for all users.*



**NOTE**

*The SIMPATI main menu started via this shortcut (see above) must only be stopped by deleting the process »simmenu\_net.exe« from the task bar. If you stop SIMPATI the usual way, the services are also stopped.*

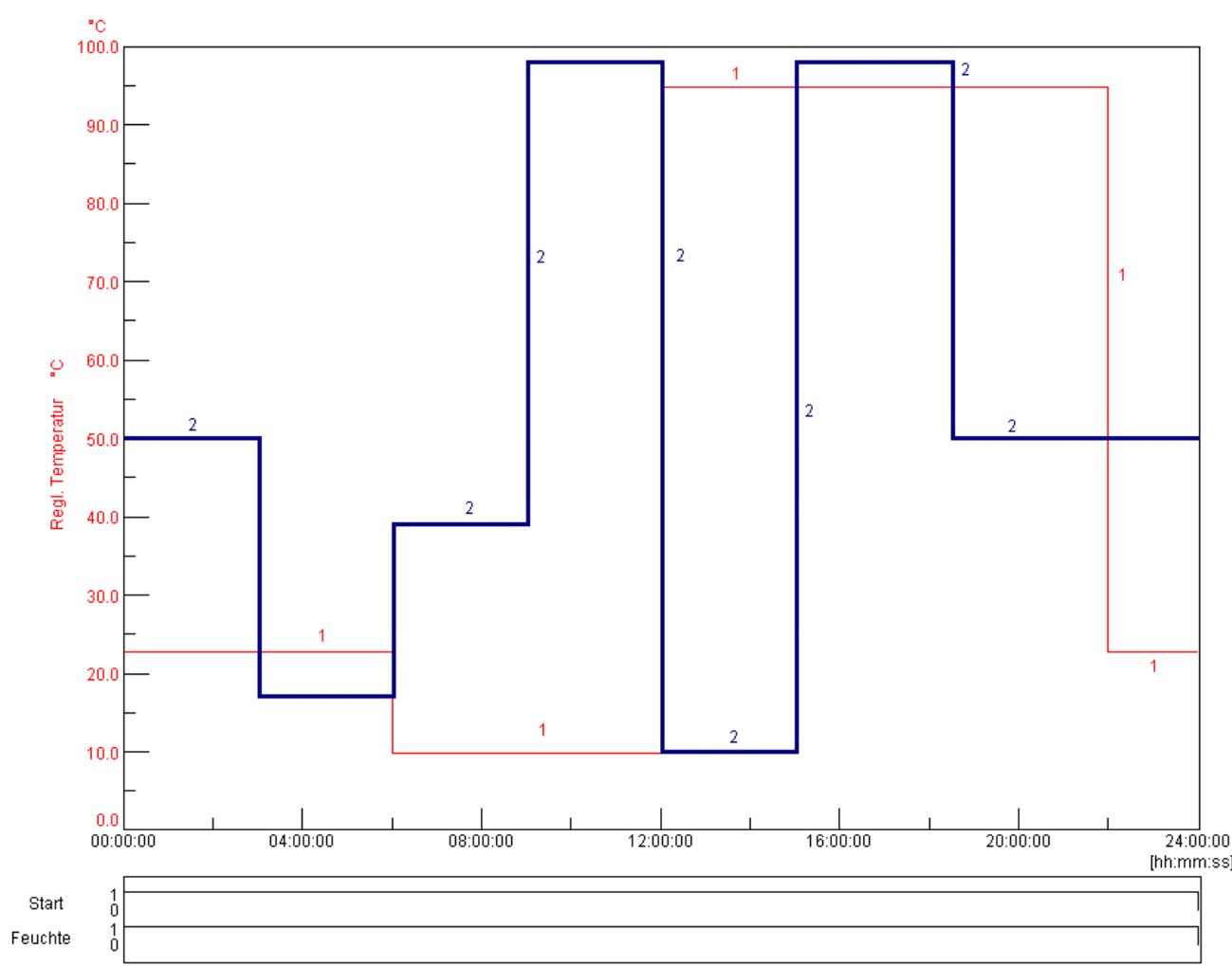


## APPENDIX: EXAMPLES

### 1. Programming example for a temperature and climate test cabinet with a Simcon controller

This example explains step by step how to create a temperature and climate program in the symbolic editor.

General descriptions of the basic editor functions can be found in chapter 9.2 (Page 62).



Program preview

- 1 Control variable "rel. humidity % RH"
- 2 Control variable "temperature °C"

**Programming the »Start« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 1 → Page 66	Activate this digital channel to start the chamber.
	24 hours constant → Page 69	The previously set status of the digital channel is retained for 24 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel.	

**Programming the »Humidity« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 1 → Page 66	Activate this digital channel to switch on the humidity controller.
	24 hours constant → Page 69	The previously set status of the digital channel is retained for 24 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel: the humidity is no longer controlled.	

**Programming the »Humidity« control variable**

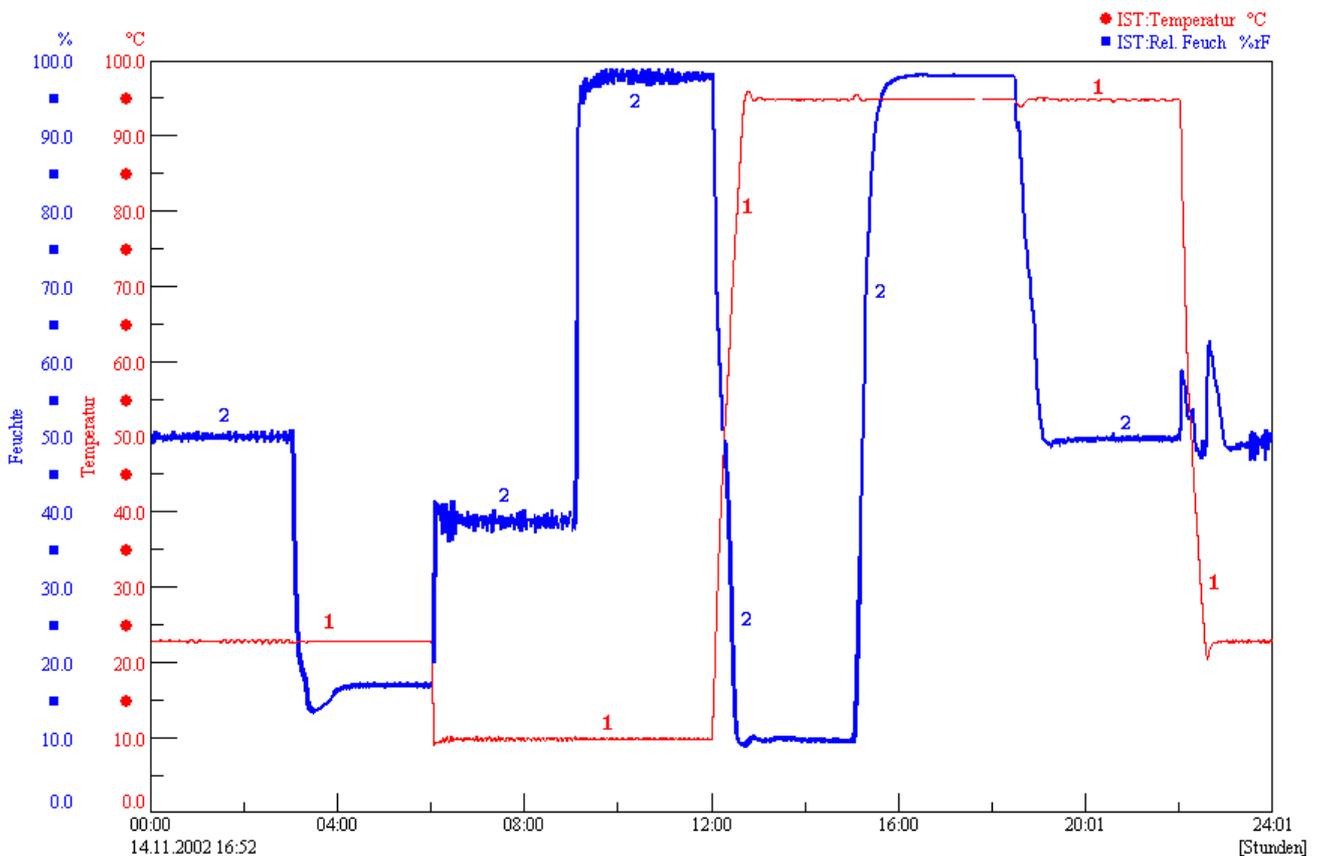
Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 50 % → Page 66	The rel. humidity is set to 50 %.
	3 hours constant → Page 69	The previously entered setpoint is retained
	17 %	There is a jump down to 17 % RH, the humidity is reduced as quickly as possible
	3 hours constant	The previously entered setpoint is retained
	39 %	There is a jump up to 39 % RH, the humidity is increased it as quickly as possible
	3 hours constant	The previously entered setpoint is retained
	89 %	There is a jump up to 89 % RH, the humidity is increased as quickly as possible
	3 hours constant	The previously entered setpoint is retained
	10 %	There is a jump down to 10 % RH, the humidity is reduced as quickly as possible
	3 hours constant	The previously entered setpoint is retained
	89 %	There is a jump up to 89 % RH, the humidity is increased as quickly as possible
	3 hours constant	The previously entered setpoint is retained
	50 %	There is a jump down to 50 % RH, the humidity is reduced as quickly as possible

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Programming symbol/input → explanation of programming symbol	Explanation
 6 hours constant	The previously entered setpoint (50 % RH) is retained until the program has ended.

**Programming the »Temperature« control variable**

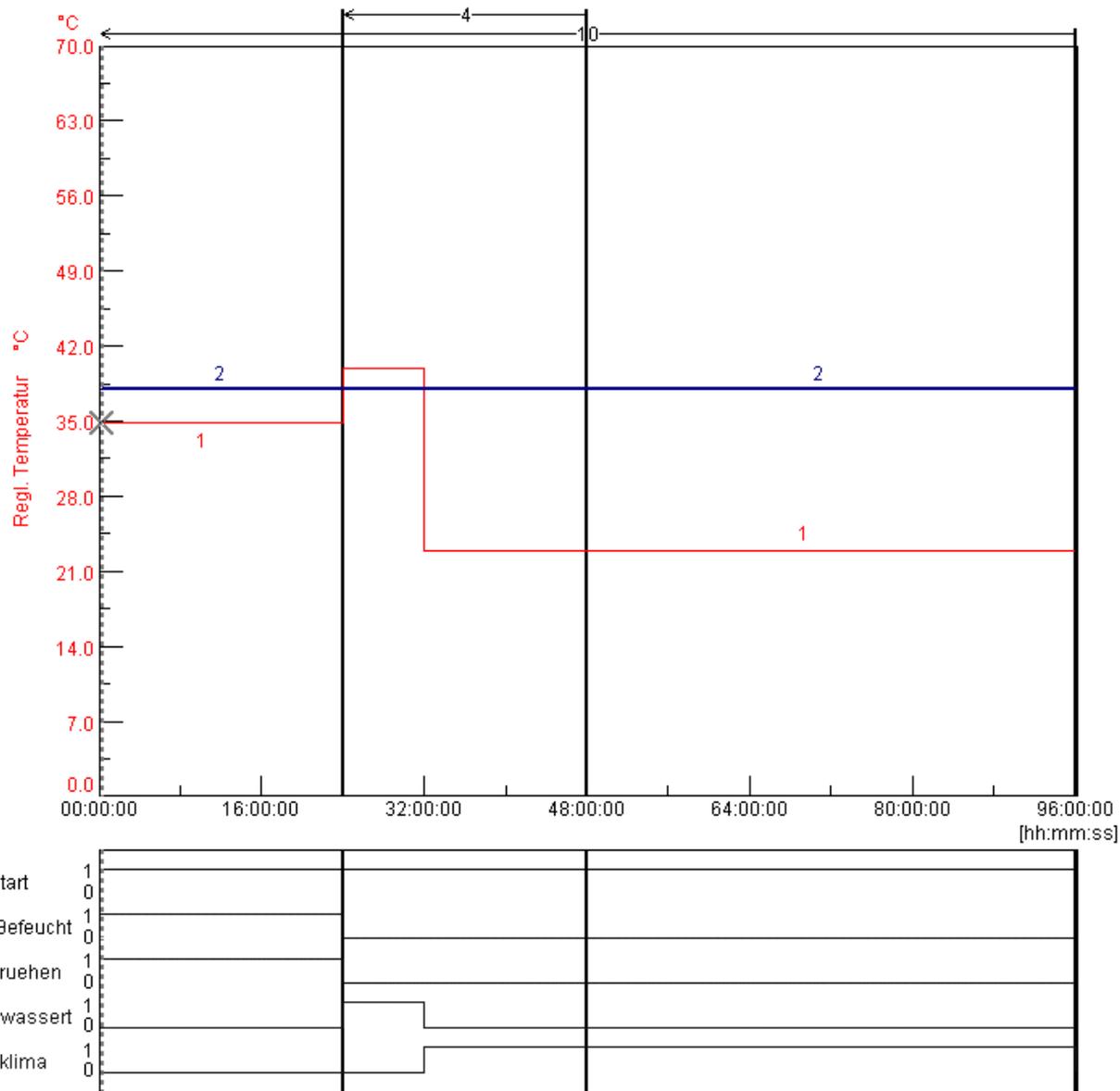
Programming symbol/input → explanation of programming symbol	Explanation
 Start value: 23 °C → Page 66	The temperature is set to +23 °C.
 6 hours constant → Page 69	The previously entered setpoint is retained
 Jump down to 10 °C → Page 70	There is a temperature change to +10 °C the setpoint is approached as quickly as possible
 6 hours constant	The previously entered setpoint is retained
 Jump up to 95 °C → Page 70	The temperature is increased to +95 °C the setpoint is approached as quickly as possible
 10 hours constant	The previously entered setpoint is retained
 Jump down to 23 °C → Page 70	There is a temperature change to +23 °C the setpoint is approached as quickly as possible
 2 hours constant	The previously entered setpoint is retained



Program sequence

## 2. Program example for a salt spray chamber with humidity with Simcon controller

The following example shows a climate change test in accordance with VDA 621-415.



Program preview

**Programming the »Start« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 1 → <a href="#">Page 66</a>	Activate this digital channel to switch on the chamber.
	24 hours constant → <a href="#">Page 69</a>	The previously set status of the digital channel is retained for 24 hours.
	24 hours constant	The previously set status of the digital channel is retained for 24 hours; this symbol has to be placed within the loop several times because the first symbol »Constant« is not taken into account when there is a jump to the loop start
	48 hours constant	The previously set status of the digital channel is retained for 48 hours.

**Programming the »Humidifier Temp.« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 1 → <a href="#">Page 66</a>	Activate this digital channel to switch on the temperature setpoint of the humidifier.
	24 hours constant → <a href="#">Page 69</a>	The previously set status of the digital channel is retained for 24 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel.	
	24 hours constant	The digital channel has no effect on the testing sequence for the next 24 hours.
	48 hours constant	The digital channel remains inactive for another 48 hours.

**Programming the »Salt Spray« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 1 → <a href="#">Page 66</a>	Activate this digital channel to switch on the salt spray test.
	24 hours constant → <a href="#">Page 69</a>	The previously set status of the digital channel is retained for 24 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel.	
	24 hours constant	The digital channel has no effect on the testing sequence for the next 24 hours.
	48 hours constant	The digital channel remains inactive for another 48 hours.

**Programming the »Condensation Water« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	0 → <a href="#">Page 66</a>	Activate this digital channel to switch on the condensation water test
	24 hours constant → <a href="#">Page 69</a>	The digital channel has no effect on the testing sequence for the next 24 hours.
	Add this programming symbol to the symbol chain to reactivate the digital channel.	
	8 hours constant	The digital channel is switched on for 8 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel.	
	16 hours constant	The digital channel has no effect on the testing sequence for the next 16 hours.
	48 hours constant	The digital channel remains inactive for another 48 hours.

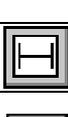
**Programming the »Standard Climate« digital channel**

Programming symbol/input → explanation of programming symbol		Explanation
	0 → <a href="#">Page 66</a>	Activate this digital channel to switch on the standard climate test.
	24 hours constant → <a href="#">Page 69</a>	The digital channel has no effect on the testing sequence for the next 24 hours.
	8 hours constant	The digital channel is switched on for 8 hours.
	Add this programming symbol to the symbol chain to reactivate the digital channel.	
	16 hours constant	The digital channel is switched on for 16 hours.
	48 hours constant	The digital channel remains switched on for another 48 hours.
	Add this programming symbol to the symbol chain to deactivate the digital channel.	

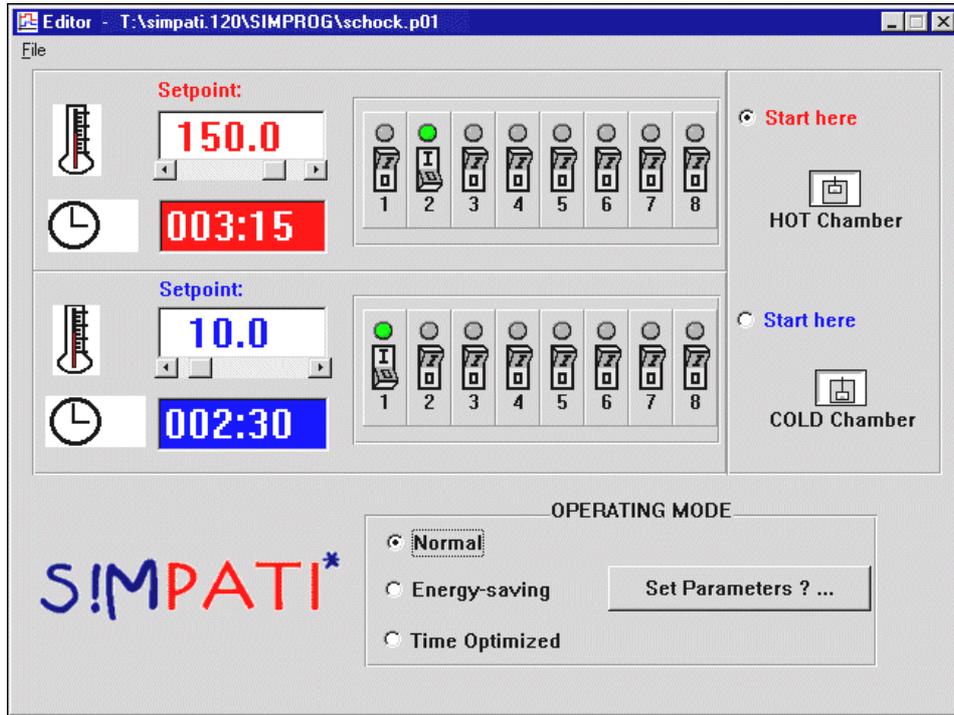
**Programming the »Temperature control variable«**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 35 °C → <a href="#">Page 66</a>	The temperature is set to +35 °C.
	24 hours constant → <a href="#">Page 69</a>	The previously entered setpoint is retained
	Jump up to 40 °C → <a href="#">Page 70</a>	The temperature is increased to +40 °C, the setpoint is approached as quickly as possible
	8 hours constant	The previously entered setpoint is retained
	Jump down to 23 °C → <a href="#">Page 70</a>	There is a temperature change to +23 °C, the setpoint is approached as quickly as possible
	16 hours constant	The previously entered setpoint is retained
	48 hours constant	The previously entered setpoint is retained

**Programming the control variable »Contr. humidifier«**

Programming symbol/input → explanation of programming symbol		Explanation
	Start value: 49 °C, → <a href="#">Page 66</a>	The temperature setpoint of the humidifier is set to 49 °C.
	Repeat 10 → <a href="#">Page 74</a>	Loop start: all program steps that follow this loop start are repeated 10 times after they have reached the end of the loop; Note: insert the program symbol for the end of the loop in order to be able to input the repetition factor! The loop is automatically added to all profiles.
	24 hours constant → <a href="#">Page 69</a>	The previously entered setpoint is retained
	Repeat 4	Loop start: all program steps after the start of this second loop are repeated 4 times; Note: insert the program symbol for the end of the loop in order to be able to input the repetition factor! The loop is automatically added to all profiles.
	24 hours constant	The previously entered setpoint is retained
	Repeat 4 → <a href="#">Page 74</a>	Loop end: at this point, the routine jumps back to the loop start 4 times; processing of the test program is not resumed until this has been done.
	48 hours constant	The previously entered setpoint is retained
	Repeat 10	Loop end: at this point, the routine jumps back to the loop start 10 times and the test program is executed again from the start.

### 3. Program example for a shock chamber with DMR controller

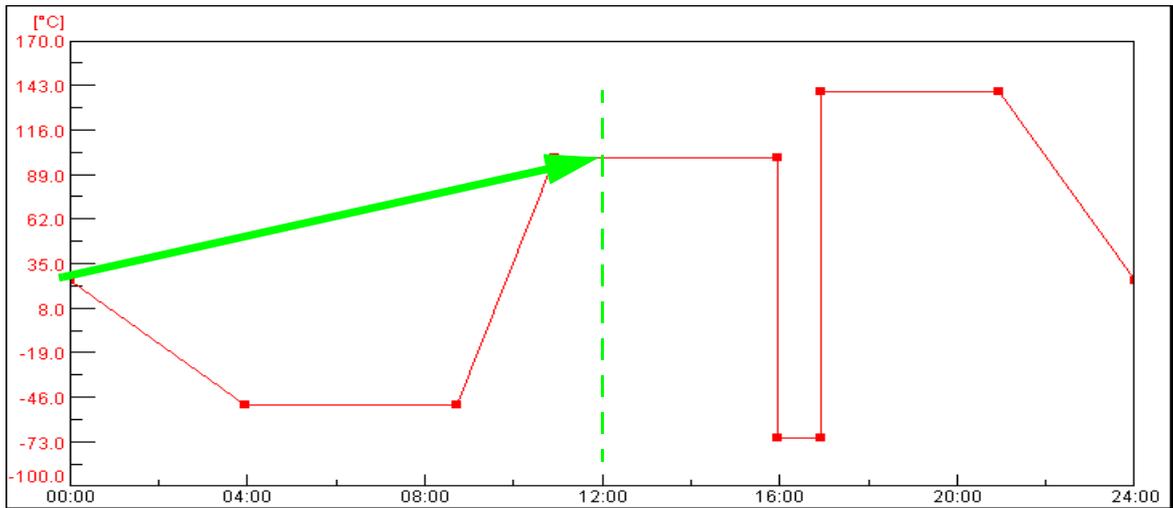


Example: Shock chamber editor (DMR controller)

In the example shown above, the lifting basket is to remain in the hot chamber for 3 hours, 15 minutes and in the cold chamber for 2 hours, 30 minutes. The test program starts in the hot chamber and is to run in normal operation.

In addition, the 2nd customer output is set in the hot chamber and the 1st customer output is set in the cold chamber.

4. Example of a test program with program advance



Example »Program advance«

Start time: 12:00 PM

The function → [Starting/stopping a test program \(Page 115\)](#) is active, after the start the test program immediately goes to the status which would have been reached after 12 hours according to the test program.

## 5. Program example in the Shock Chamber Editor for a shock chamber with CTC controller

Control variable				
		Nominal value	Lower alarm limit	Upper alarm limit
Hot Temp	°C	120.0	-90.0	230.0
Cold Temp	°C	-40.0	-90.0	230.0
PretmpHot	°C	130.0	0.0	240.0
PretmpCld	°C	-50.0	-90.0	80.0
TempLift	°C	0.0	-100.0	250.0
Pt100Mov	°C	0.0	-100.0	250.0

Before the loop		
Time [min]	1	Before the loops start (cycles), a time of 1 minute is executed.
Start	ON	Unit status is ON
Hot Temp	ON	Hot chamber temperature adjustment is active.
Cold Temp	ON	Cold chamber temperature adjustment is active.
Lift. Bask. Up	ON	Lifting basket to start in hot chamber
Lift. Bask. Down	OFF	Lifting basket not in cold chamber
Defrosting	OFF	Cold chamber should not defrost.
Pre-heat	ON	If the chamber is not used, it should be temperature equalized to the pre-heating temperatures.
Start Low	OFF	Test program should not start in cold chamber.
WaitActive	OFF	This digital channel has no function. If the test program is to be executed with the Wait function, this must be programmed subsequently in the graphical editor → <a href="#">Wait (Page 98)</a> .
CO2/LN2	OFF	CO2 or LN2 cooling is not active.
Contr./lifting basket	OFF	Closed loop control from the lifting basket is not active.
Lamp test	OFF	Lamp test is switched off.
Cust. OUT1	OFF	Customer output 1 is switched off.
Cust. OUT2	OFF	Customer output 2 is switched off.

Cycles		
Cycles	100	In total, 100 cycles (i.e. 100 times Sector 1-3 or 1-2) are executed.

After the loop		
Time [min]	30	Once the loops have finished (cycles), a period of 30 minutes is executed.
Start	ON	Unit status is ON
Hot Temp	OFF	Temperature adjustment in the hot chamber is inactive.
Cold Temp	OFF	Temperature adjustment in the cold chamber is inactive.
Lift. Bask. Up	ON	Lifting basket at end in hot chamber
Lift. Bask. Down	OFF	Lifting basket not in cold chamber
Defrosting	ON	Cold chamber is defrosted
Pre-heat	OFF	Unused chamber is not temperature adjusted.
Start Low	OFF	Test program should not start in cold chamber.
WaitActive	OFF	This digital channel has no function. If the test program is to be executed with the Wait function, this must be programmed subsequently in the graphical editor → <a href="#">Wait (Page 98)</a> .
CO2/LN2	OFF	CO2 or LN2 cooling is not active.
Contr./lifting basket	OFF	Closed loop control from the lifting basket is not active.
Lamp test	OFF	Lamp test is switched off.
Cust. OUT1	OFF	Customer output 1 is switched off.
Cust. OUT2	OFF	Customer output 2 is switched off.

1rd section		
Time [min]	60	Dwell time in hot chamber 60 min
Start	ON	Unit status is ON
Hot Temp	ON	Hot chamber temperature adjustment is active.
Cold Temp	ON	Cold chamber temperature adjustment is active.
Lift. Bask. Up	ON	Lifting basket in hot chamber
Lift. Bask. Down	OFF	Lifting basket not in cold chamber
Defrosting	OFF	Cold chamber should not defrost.
Pre-heat	ON	If the chamber is not used, it should be temperature adjusted to the to the pre-heat temperature.
Start Low	OFF	Test program should not start in cold chamber.
WaitActive	OFF	This digital channel has no function. If the test program is to be executed with the Wait function, this must be programmed subsequently in the graphical editor → <a href="#">Wait (Page 98)</a> .
CO2/LN2	OFF	CO2 or LN2 cooling is not active.
Contr./lifting basket	OFF	Closed loop control from the lifting basket is not active.
Lamp test	OFF	Lamp test is switched off.
Cust. OUT1	OFF	Customer output 1 is switched off.
Cust. OUT2	OFF	Customer output 2 is switched off.

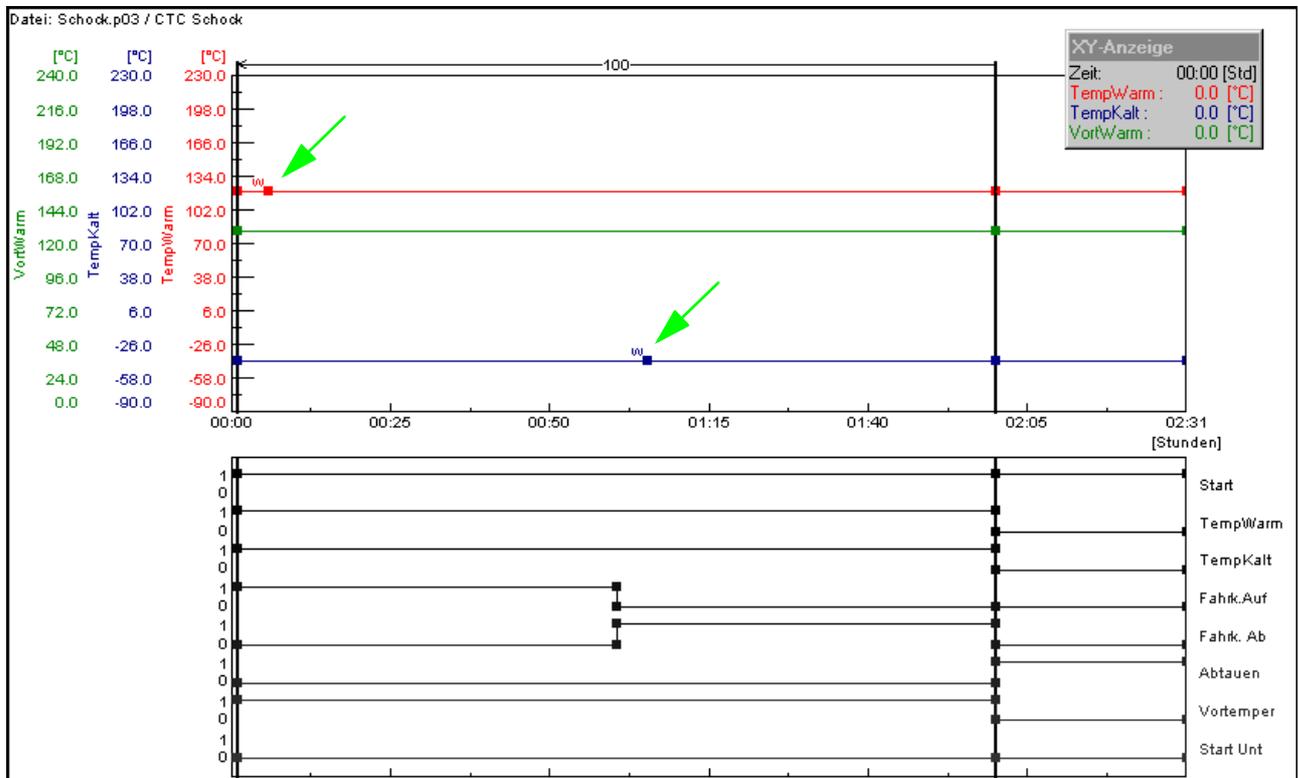
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2rd section		
Time [min]	60	Dwell time in hot chamber 60 min
Start	ON	Unit status is ON
Hot Temp	ON	Hot chamber temperature adjustment is active.
Cold Temp	ON	Cold chamber temperature adjustment is active.
Lift. Bask. Up	OFF	Lifting basket not in hot chamber
Lift. Bask. Down	ON	Lifting basket in cold chamber
Defrosting	OFF	Cold chamber should not defrost.
Pre-heat	ON	If the chamber is not used, it should be temperature adjusted to the to the pre-heat temperature.
Start Low	OFF	Test program should not start in cold chamber.
WaitActive	OFF	This digital channel has no function. If the test program is to be executed with the Wait function, this must be programmed subsequently in the graphical editor → <a href="#">Wait (Page 98)</a> .
CO2/LN2	OFF	CO2 or LN2 cooling is not active.
Contr./lifting basket	OFF	Closed loop control from the lifting basket is not active.
Lamp test	OFF	Lamp test is switched off.
Cust. OUT1	OFF	Customer output 1 is switched off.
Cust. OUT2	OFF	Customer output 2 is switched off.

3rd section		
Time [min]	0	This section is skipped as it is a program example for a double shock chamber which requires no programming.

**Representation of the shock test program in the graphical editor:**

Wait function inserted in graphical editor in Hot Temp and Cold Temp nominal value profile.



*Graphical representation of the shock test program*

The insertion of the Wait functions ensures that the set cycle time is only executed once the lifting basket temperature is within the adjustable Wait tolerance limits of +/-5 K (standard value set in the factory).

Set the data point »Hot Temp« or »Cold Temp« approx. 1 minute after moving the lifting basket and then activate the Wait function.



## APPENDIX: GLOSSARY AND TIPS

### Archive name

The file name of the measurement recording is called the archive name. If no archive name is assigned, SIMPATI automatically uses the date of the start of recording (Year, Month, Day).

### Automatic/program mode

The testing process used a test program.

### EPROM version

The EPROM version number briefly lights up on the E4 terminal after starting. On the C terminal, press the softkey »SYSTEM PARAM.« in the start menu.

### Flash version

The Flash version number can be found on the »Touchpanel« in the menu window »KAMMER-INFORMATION«, (»CHAMBER INFORMATION«) in the second line.

It can be reached from the main menu via the following symbols:



### Manual mode (hand mode)

Selection of setpoints and control values as well as the switching on and off of digital channels, without the test sequence being based on a test program.

### Background program → Foreground program

### Control variables

Analogue channel. Contains a measured value (actual value) and a set value (setpoint). Usually the first control variable is the temperature and the second control variable is the humidity.

### Context menu

The context menu is displayed by a single click with the right mouse button on the object which is to be processed.



### NOTE

*Availability of the context menu commands may depend on the chamber controller, and may therefore vary.*

### Measurement value

Actual value, analogue input

## Test program names / Program numbers`

Each test program has a test program name under which the test program is saved in SIMPATI. The test program is given a number when it is downloaded. The test program is loaded into the chamber controller and saved under this test program number.

Use only letters, numbers and the understroke key for the test program name.

Test program locations 0 to 99 are available in the chamber controller (DMR controller 1-100).

In chambers with CTC/TC/MOPS controllers, the test program positions 100 to 120 are assigned standard programs (→ chamber operating manual).

\*= any number of characters, **xx** = chamber number

### – Format \*.cfg

The test program name for programs written for shock chambers with DMR controllers in the text editor have the format \*.cfg and are automatically saved in the format \*.pxx .

### – Format \*.pxx

A test program name has the format \*.pxx when it has been compiled in the graphical editor → 9.3 (Page 85).

#### \*cp.pxx

If a test program is copied from another chamber and the file name is not manually changed by the user, then »cp« is added to the original file name and the number of the destination chamber is changed.

### – Format \*.bxx

A test program name has the format \*.bxx when it has been compiled in the symbolic editor → 9.2 (Page 62) or in the shock chamber editor → 9.4 (Page 101).

### – Format \*.rpt

A report file has the format \*.rpt The report files store daily reports.  
File names defined by SIMPATI have the following structure:  
Year / Month / Day.

### – Format \*.rptb

Encrypted report file

### – Format \*.hxx / \*.rxx

A measurement file consists of a header file (\*.hxx) and a body file (\*.rxx).

The header file contains data on the configuration and structure of the measurement file.

The body file contains the measurement values. When a measurement file is loaded, the header file is loaded and the measurement values in the corresponding body file are accessed at the same time.

If the body file cannot be accessed, the loading process is interrupted with a message.

The program automatically processes header and body files in all operations.

### – Format \*.dxx

The test program can be displayed step by step, printed and saved in a written format as a program list (\*.dxx). However, no changes can be made here to the test program.

**Control value**

Analogue output

**Foreground / background program**

A background program can be executed in parallel with another test program.

Several foreground programs run successively. A total of at most 3 test programs can run simultaneously.

These settings only affect the test sequence if the Wait function and the function »*Call Program*« (Page 99) are being used.

Please ensure that you follow the instructions for the various types of controllers in Chapter → 3.8 (Page 17).

**Counter**

Displays counter values



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