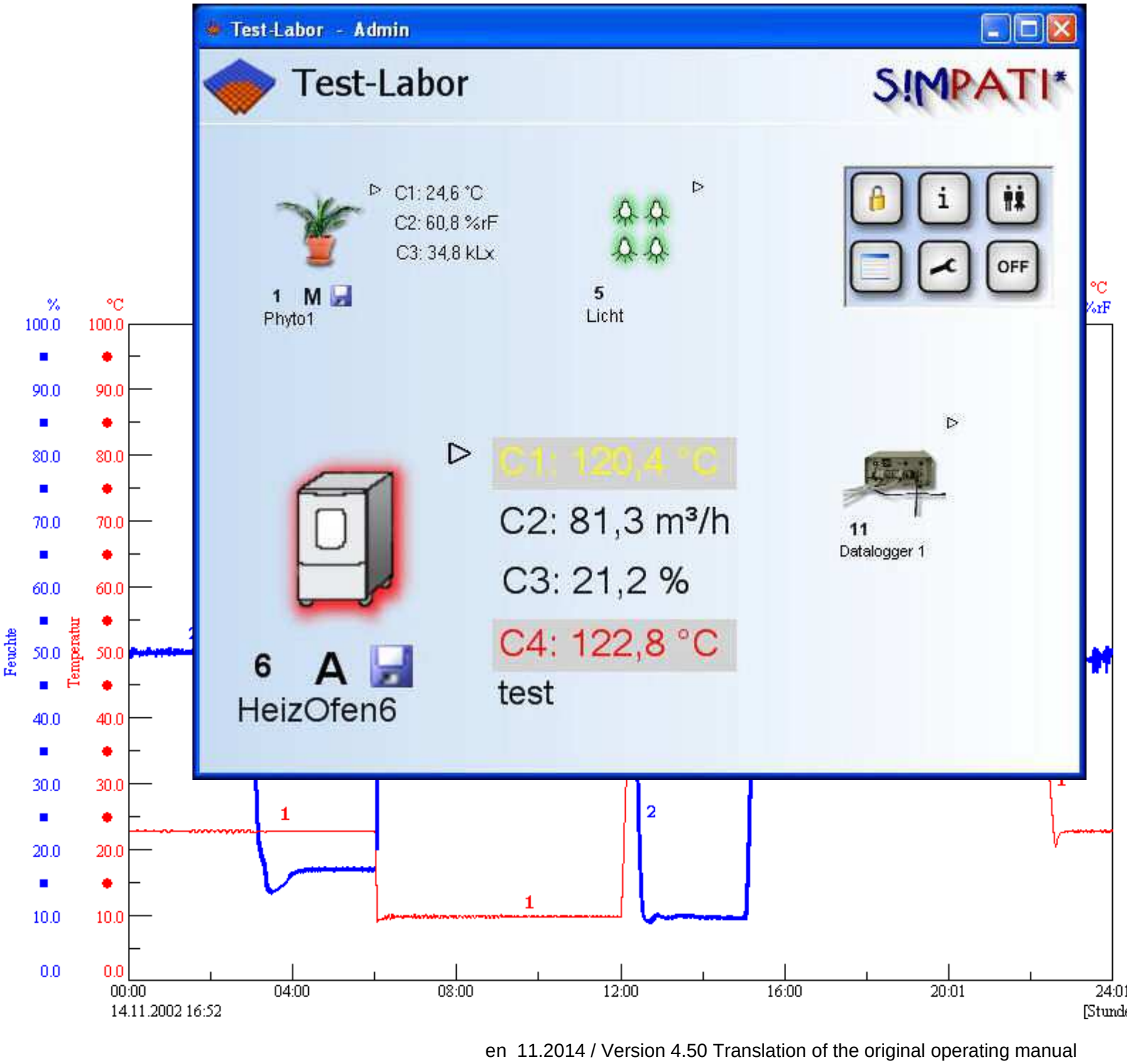
SIMPATI* SOFTWARE

Simulation pack for test system integration

Installation and Operation Manual



en 11.2014 / Version 4.50 Translation of the original operating manual

UPGRADE NEWS 4.06 → 4.50

- The configuration menu for registering the SIMPATI* licence was newly created.
  Changes in the licence key can be made by starting the SimConfig application in the SIMPATI* start menu.
- Administrator rights are no longer required for starting Setup3k to read chambers in. The previous read-in options were expanded by a "Almemo data logger" button.
- The SIMPATI* start window was substantially revised. SIMPATI* applications selected can be started or ended using this window and it is also possible to specify criteria for the operation.
- Program and measured data paths can now be re-entered in a text box in the chamber configuration as well.
- It is now also possible to set values in the start menu.
  For use in the pharmaceutical field, this always has to be confirmed with the user password.
- The previous SimEbo single user interface was removed owing to the new input options.
- User administration
  - User administration was changed over to databases and substantially revised in the process.
  - It is now possible to create groups according to your own requirements featuring freely configurable settings and rights and to group any users in them. The users are issued with the settings and rights configured for the group; changes can be made too.
  - By way of user synchronisation it is possible to transfer users present in SIMPATI*, including their rights, to the Lenze touchpanel of networked Simpac systems.
  - It is possible to define invalid passwords.
  - A list of the users created, incl. their group membership and rights, can be generated out of user administration by means of PDF export.
- Tabular editor
  - In addition to the 3 editors for program creation already available previously, there is now a tabular program editor for all chambers with a symbolic program transducer too.
  - The programs created with this editor can also be edited in the touchpanel later on
  - It is possible to create programs (e.d. according to test standards) that can be transferred to compatible systems via a program pool.
- Symbolic editor
  - When creating a new program, the standard channel is automatically set to "1".
  - Only programs are opened for which a 'chamber' exists and whose file name extension begins with p or b.
  - It is no longer possible to program ramps with »0« time.
- In the shock editor (energy mode) the time is now calculated correctly.
- Now only the currently active errors are displayed in the start window in the error overview.
  The message's alarm number is shown in the message texts as well.
- There is a new »SimDataNet« data logger driver that is provided with a simple means of changing and activating the inheritance.
- The sort order of the messages when exporting the report via PDF was corrected.
- Planner
  - The logic for processing and updating was changed.
  - If the user does not have the »Transfer programs« right, he cannot schedule a program start either.

1) Option

  - The edit window remains open after save conflicts.
  - Several e-mail recipients can be specified separated by a »comma«.
  - The report path specifically set is used for printing the report file.
- Mailer
  - It is now possible to send a test e-mail to any recipient to test the general settings.
  - E-mail texts were changed to accommodate customer requirements.
  - By activating the option in the settings measured data can now be sent along as well.
  - Start and end of the mailer are logged in the report
- In version 4.50 it is once again possible to run SIMPATI* as a service.
  - When an administrator quits SIMPATI* the service is ended as well.
  - All other users can only quit the main menu - on doing so, a LogOut is executed and SIMPATI* continues to run in the background.
- With SimDeviceDiscovery.exe a tool is available for automatic system search of devices with Simpac controller.

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1 INTRODUCTION AND GENERAL INFORMATION

Prior to installation

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, as well as the language used by the operating personnel.

1.1 Finding your way around

Explanation of the signs and symbols 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) Option

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 Prerequisites

Computer system	IBM-compatible PC
Central processing unit	Pentium or better
Operating system	Windows 8, Windows 8.1 Windows 7 (32 bit/64 bit) Windows Server 2008 (32 bit/64 bit) Windows Vista
Available hard drive capacity for SIMPATI*	1 GB
Graphic	≥ 800 x 600 pixels, 65536 colours with appropriate monitor
Supported interfaces	RS 232, RS422, RS 485, IEEE 488.2 with external converter, LAN 10/100 Mbit
Printer	All printers supported by the operating system
Software	.NET Framework 3.5 SP1 and 4.5 Windows feature .NET Framework 3.5 needs to be activated on the Windows 8 or 8.1 operating system PDF reader
Operating memory	≥ 8 Gbyte

Tab. 1-1: System requirements

CAUTION

- Use only the connecting cables supplied, 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) Option

1.7 Online help and operating manual

The operating manual and the online help complement each other.

Registration code	Hotline - Tel. No.
10 000 bis 19 999 45 000 bis 49 999	07433 / 303-4172
20 000 bis 44 999 50 000 bis 59 999	06408 / 84-6435

Documentation in the following format: *.pdf

The operating manual can be read using any standard PDF reader. You can find the operating manual on the enclosed CD.

1) Option

Online help and operating manual

1) Option

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: Simpati.

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".

  You will be guided through the installation process.

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. If a demo version of SIMPATI* is already installed on your computer, then it is overwritten in the process.

NOTE

In Windows Vista, Windows Server 2008, Windows 7 and Windows 8 SIMPATI must not be installed in C:\Programme or C:\Program files because in this context, changes in the S!MPATI-configuration are always saved under the Windows user logged in and cannot be viewed by other Windows users.*

Once installation has been successfully completed, the configuration program opens automatically (»SimConfig«).

Fig. 2-1: SimConfig

1 The licence conditions have to be accepted in order to continue the installation.

1) Option

Fig. 2-2: Registering

Once you have finished registering, you can start SIMPATI*. The program opens for reading in chambers and systems.

When SIMPATI* is started, the configuration program opens again automatically.

→ *3 Configuring SIMPATI* and the chamber (Simsetup) (page 7)*

The chamber first has to be configured before operation is possible.

NOTE

In Windows 8 the initial start of SIMPATI* has to be run as »Admin« via the desktop link.

1) Option

3 CONFIGURING SIMPATI* 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 has to be configured

→ *Appendix: Chamber controller settings (page 175)*

(Chamber address and interface protocols for the chamber have to be set.)

NOTE

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

Before you read the chambers in, we recommend that you check the settings of the chamber controllers, especially the assignment of the addresses:

→ *Appendix: Chamber controller settings (page 175)*

If you read chambers with controllers Mincon, Simcon, MOPS/CTC/TC or ISAR, a chamber number (address) needs to be assigned twice to assure that there are no gaps between the numbers in SIMPATI. This does not result in conflicts because a different 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 chamber controller type has to be known (→ Operating instructions for the chamber/control unit)

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

Once SIMPATI* started, configuration program »simsetup3K.exe« is opened automatically for chambers with a Mincon, Simcon or Simpac controllers.

Configuration program »simsetup.exe« has been installed for configuration of the remaining controllers. Start this via the shortcut in the start menu.

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 configuration program »simsetup.exe«.

→ *Fig. 3-3: System configuration (page 9)*

NOTE

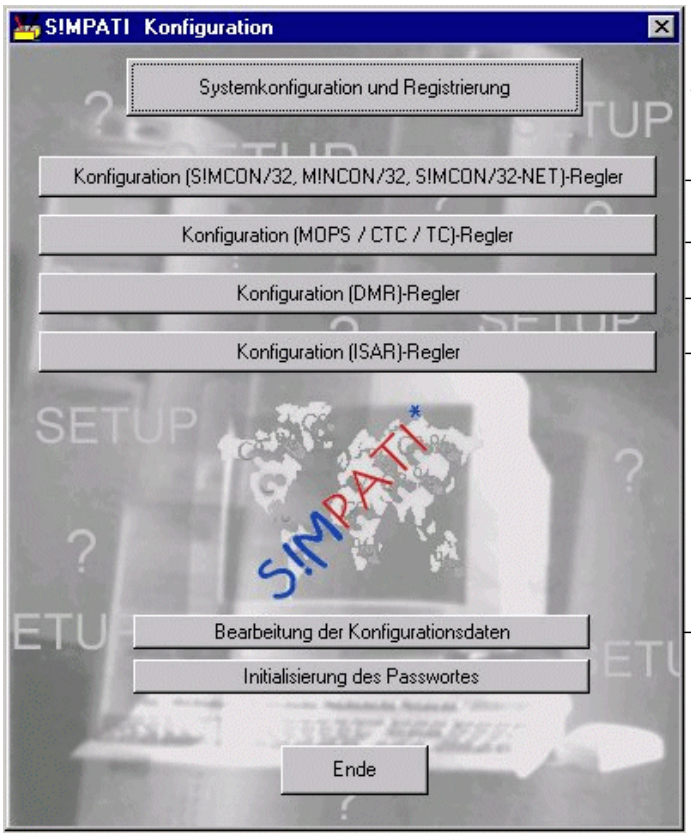
The Simpac controller (if connected in series) has to be read in via the Simcon/Mincon menu.

1) Option

→ *3.2 (page 10)*

→ *Fig. 3-8: (page 13)*

Fig. 3-1: Configuration program »Simsetup3K«



→ *Fig. 3-3: (page 9)*

→ *Fig. 3-5: (page 11)*

→ *Fig. 3-9: (page 14)*

→ *Fig. 3-11: (page 16)*

→ *Fig. 3-12: (page 17)*

→ *3.8 (page 18)*

Fig. 3-2: Configuration Simsetup

1) Option

3.1 System configuration and registration

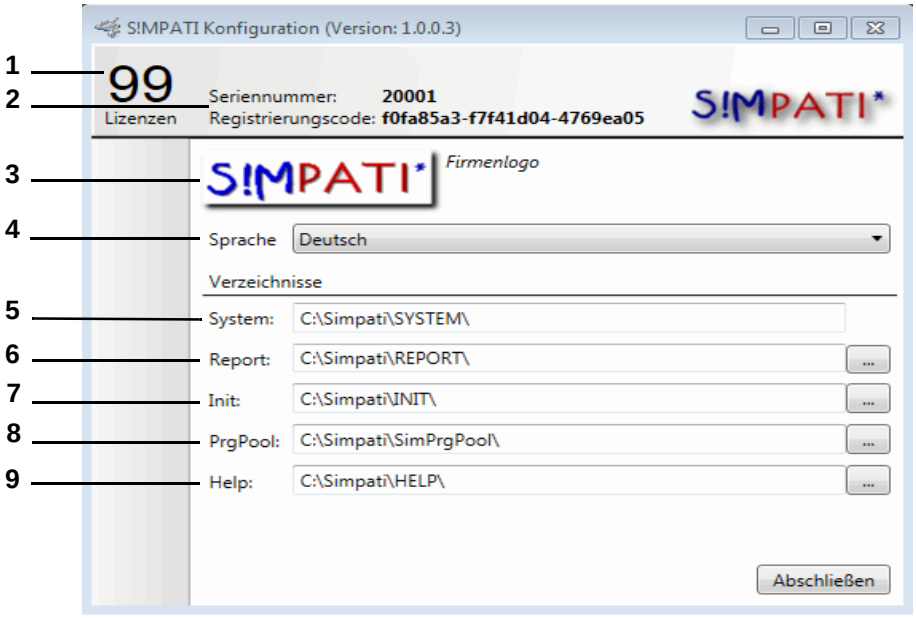


Fig. 3-3: System configuration

1 Number of licences available.

2 Registration code and serial number.
The registration code is inherited from the installation and can be changed here.
When purchasing additional licences you will need to enter the new registration code here.
The serial number is inherited from the installation and can be changed here.

3 Factory Bitmap 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.

4 This 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 chamber's configuration files are saved.

8 This shows the directory in which the program files created with the tabular editor are saved.

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

1) Option

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)*.

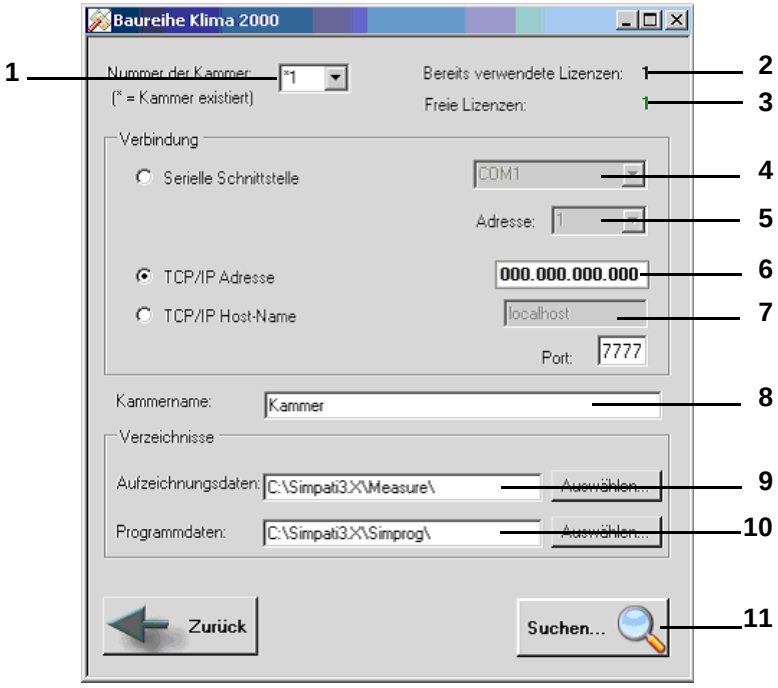


Fig. 3-4: Configuration Mincon/Simcon (»Simsetup3K«)

1) Option

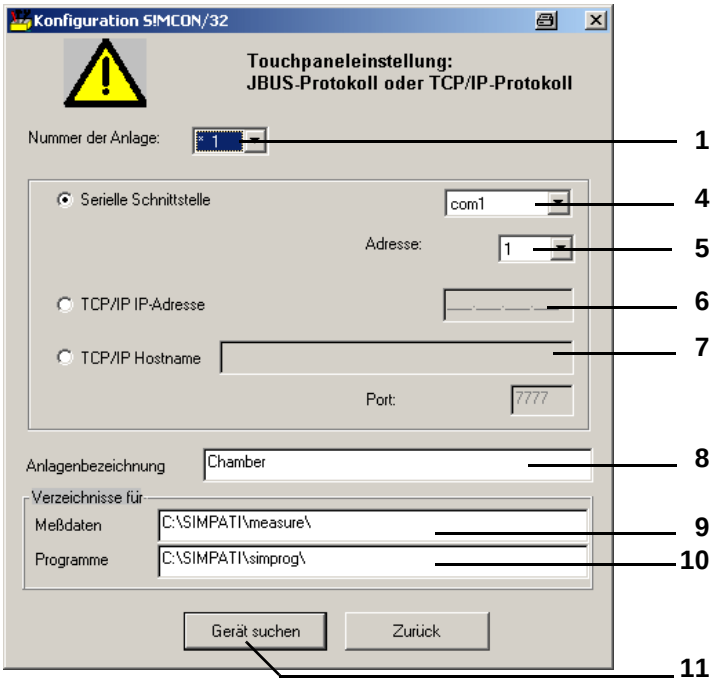


Fig. 3-5: Configuration Mincon/Simcon (Simsetup)

1 Chamber selection.
All previously configured chambers are marked with an asterisk.

2 Total number of licenses purchased

3 Licences not yet 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 (page 175)*

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. The name can be changed again later on.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)*.
→ *6.1 Defining general chamber specifications (page 43)*.

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 via the interface for the chambers connected.

Saving the configuration, see
→ *Fig. 3-3: System configuration (page 9)* Item 7

1) Option

3.3 Chambers with data logger

Make the settings for the chambers in the following menus:

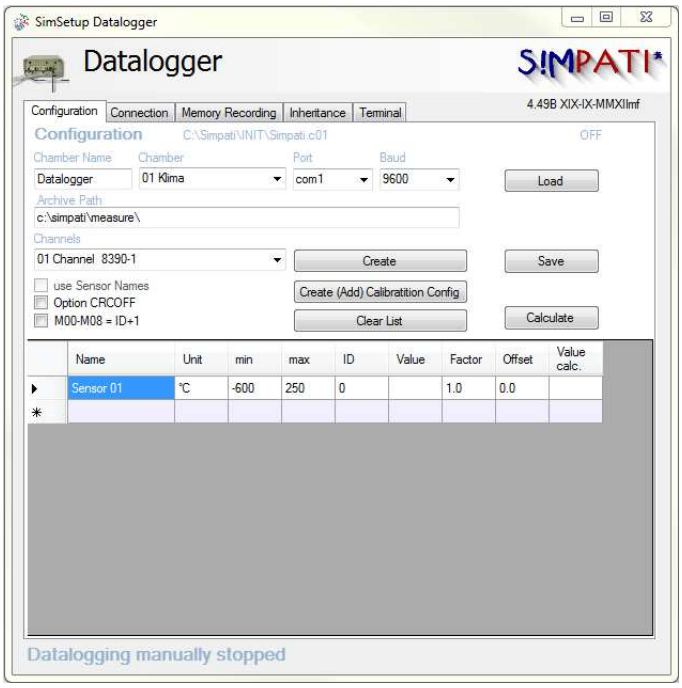


Fig. 3-6: Data logger - Chamber name

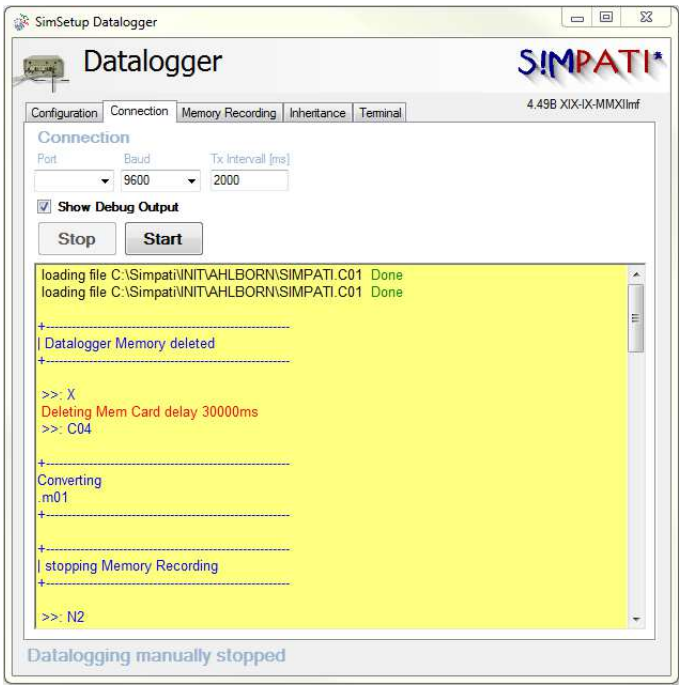


Fig. 3-7: Data logger - Connection

1) Option

3.4 Configuring chambers with a Simpac controller

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

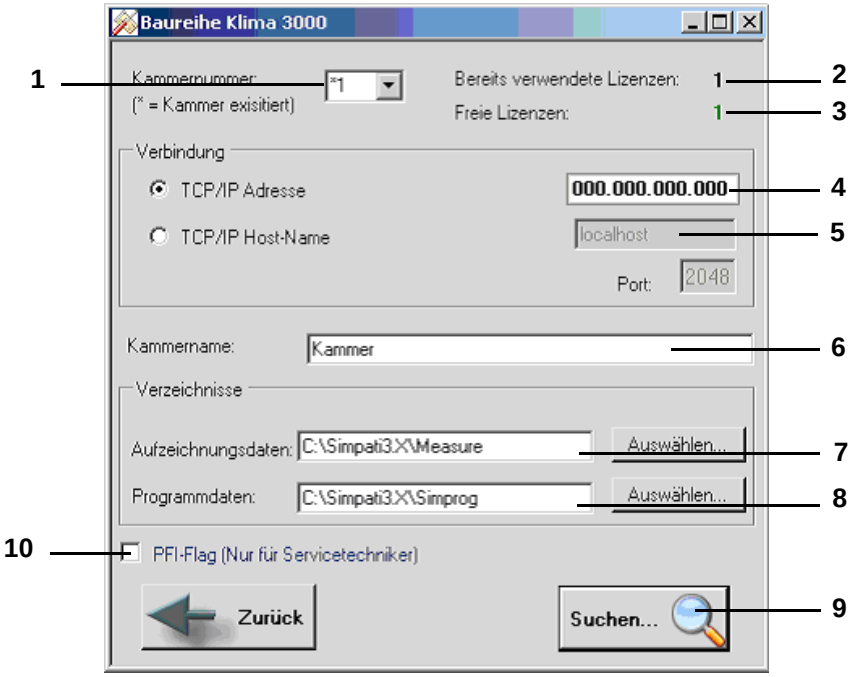


Fig. 3-8: Configuration Simpac (»Simsetup3K«)

1 Chamber selection
All previously configured chambers are marked with an asterisk.

2 Total number of licenses purchased

3 Licences not yet 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. 5-1: SIMPATI* Main menu (page 25)*. The name can be changed again later on → *6.1 Defining general chamber specifications (page 43)*.

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 via the interface for the chambers connected.

Saving the configuration → *Fig. 3-3: System configuration (page 9)* Item 7

10 PFI flag for service personnel only

NOTE
The serial number and the registration code can only be entered via configuration program »simsetup.exe«. → Fig. 3-3: System configuration (page 9)

1) Option

3.5 Configuring chambers with a MOPS/CTC/TC controller

Make the settings for chambers with a MOPS/CTC or TC controller in this menu.

→ *Appendix: Chamber controller settings (page 175)*

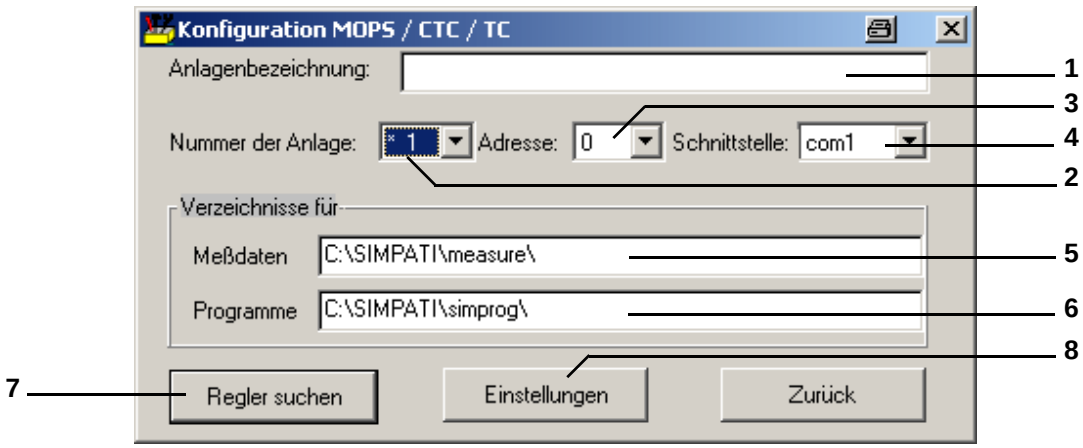


Fig. 3-9: Configuration MOPS / CTC / TC

1 Chamber designation

Define the name of the chamber here (max. 20 characters); it appears in the main menu.

→ *Fig. 5-1: (page 25)*. The name can be changed again later on
→ *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)*.

2 Chamber selection

All previously configured chambers are marked with an asterisk.

3 Address in the chamber controller → *Appendix: Chamber controller settings (page 175)*

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 via the interface for the chambers connected.

Saving the configuration:
→ *Fig. 3-3: System configuration (page 9)* Item 7

Specific settings of the chamber
→ *Fig. 3-10: Settings (page 15)*

1) Option

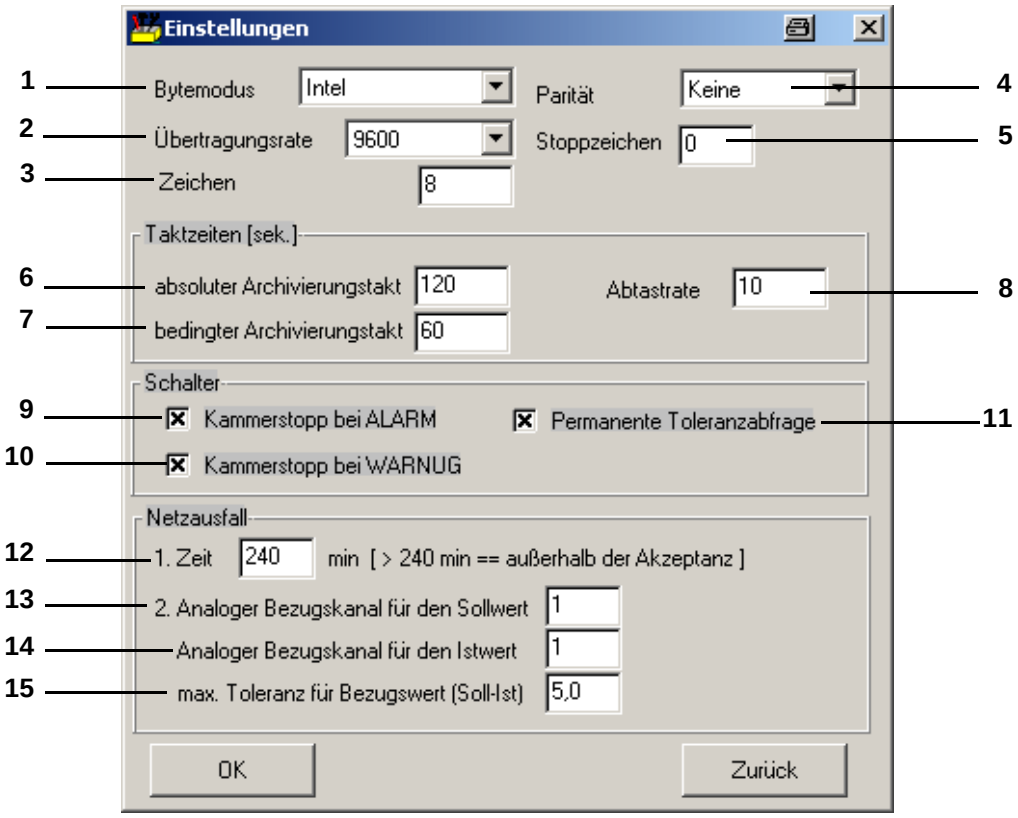


Fig. 3-10: Settings

1 Storage on hard drive; normally: Intel

2 Transfer rate; normally: 9600

3 Transfer byte size, normally: 8

4 Transfer check, normally: none

5 Transfer stop recognition, normally:

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 → *Fig. 3-10: Settings (page 15)*

7 Conditional archiving cycle

If the warning limits are exceeded, the absolute archive rate is switched to the conditional archive rate and recording continues at this rate.
→ *Fig. 3-10: Settings (page 15)*

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 query of the tolerance

1) Option

12 Maximum tolerable 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 nominal value 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 tolerable difference between nominal and actual values. If the difference between the nominal and actual value is higher, the test is not restarted.

3.6 Configuring chambers with a DMR controller

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

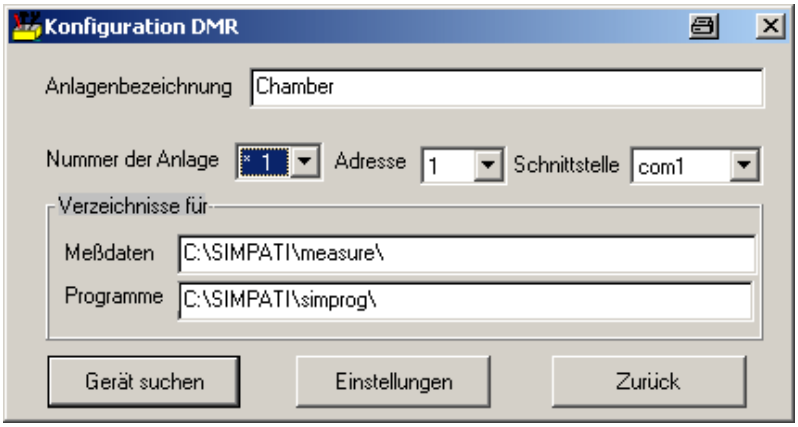


Fig. 3-11: Configuration DMR

The description of this menu corresponds to the descriptions in chapter:

→ *3.5 Configuring chambers with a MOPS/CTC/TC controller (page 14)*

Specific settings of the chamber:

→ *Fig. 3-10: Settings (page 15)*

1) Option

3.7 Configuring chambers with an ISAR controller

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

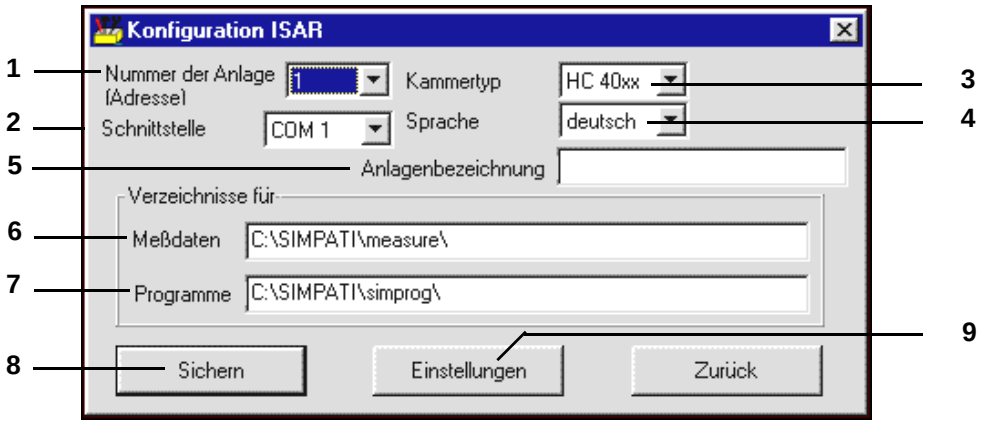


Fig. 3-12: Configuration ISAR

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. 5-1: SIMPATI* Main menu (page 25)*. The name can be changed at a later time
→ *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)*

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 Save the settings

9 Specific chamber settings

→ *Fig. 3-10: Settings (page 15)*

1) Option

3.8 Manual editing of the configuration data

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

CAUTION

The changes must only be made by trained service personnel or by arrangement with our Hotline.

→ *1.7 Online help and operating manual (page 3)*

3.8.1 Initialising the password

No function defined.

3.9 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 (page 181)*.

An additional diskette containing the appropriate configuration files and an installation manual is supplied with the SIMPATI* software for this purpose. Please ensure that you follow the instructions in the manual carefully. The following points also apply:

The download and upload functions (transfer of test programs from chamber → PC or PC → chamber) are not supported; in other words, only online operation 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 SIMPATI*.

3.9.1 MOPS / CTC / TC controller

Software test specimen protection can only be manually set with EPROM version 1.73 or higher.

3.9.2 Gateway with CTC controller

- Automatic test programs cannot be uploaded
- No background programs possible
- No fast program advance possible
- Software test specimen protection cannot be manually set

3.9.3 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 set.
- No error acknowledgement possible
- No program advance possible
- No test program upload possible
- No background programs possible
- Software test specimen protection cannot be manually set
- The chamber status can become desynchronised as a result of the chamber being operated from SIMPATI* and from the chamber control unit. Recommendation: The chamber controller should usually be controlled from the control unit or only via SIMPATI*.
- The wait function can only be assigned to one channel.
- Protocol: transparent

3.9.4 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 65)*

3.9.5 DMR controllerler

– Test programs can only be uploaded with DMR version »R2-38« or higher
→ *10 Test program transfer between the chamber and SIMPATI* (page 123)*

3.9.6 Prodicon controller

Make the following settings:

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

1) Option

3.9.7 Dicon 50x/100x controller and Imago 500

Make the following settings on the controller:

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

3.9.8 Rotronic Hygroflex 3

Make the following settings on the controller:

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

3.9.9 Testa FID2000MP

Make the following settings on the controller:

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

NOTE

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

3.9.10 Stange SE-4xx and 5xx

Make 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.*

1) Option

3.9.11 Prodicon Plus controller

Make the following settings:

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

    The address set corresponds to the address in SIMPATI*.
- Press »START«; the graphics screen is enabled

3.9.12 2/3 channel process interface

Make the following settings:

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

3.9.13 QNX controllerler

Make the following settings:

- Start external mode (display = External OFF)

3.9.14 Anaprog controller

Make 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«.

3.9.15 SBC controller

Make the following settings:

- Baud rate: 9600
- Data bits: 8
- Parity: none
- Stop bit: 1
- Address: any

  After switching on the master switch, you need to press the »EXT« button on the controller.

1) Option

3.9.16 Eurotherm 900 EPC

Make the following settings:

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

3.9.17 Data logger 8590-9C, 8990-6C and 8390-1, 8990-1

→ *Appendix: Support for the type 8990-6C data logger with checksum (page 179)*

1) Option

4 SIMPATI*-PROGRAM STARTUP

NOTE

If you want to use the SIMPATI web software[1)], please note the requirements. Log in as a »Simpati User«!*

→ *Appendix: SIMPATI* web software[1)] (page 195)*

After you have started the program, the start menu appears; following a successful startup, the program is automatically displayed as an icon in the taskbar in the bottom section of the screen. This makes it possible to query the status of SIMPATI* operating processes at any time.

1 Menu via right mouse click - show display

2 Browse list of SIMPATI* activities

3 Export process list to a .txt file

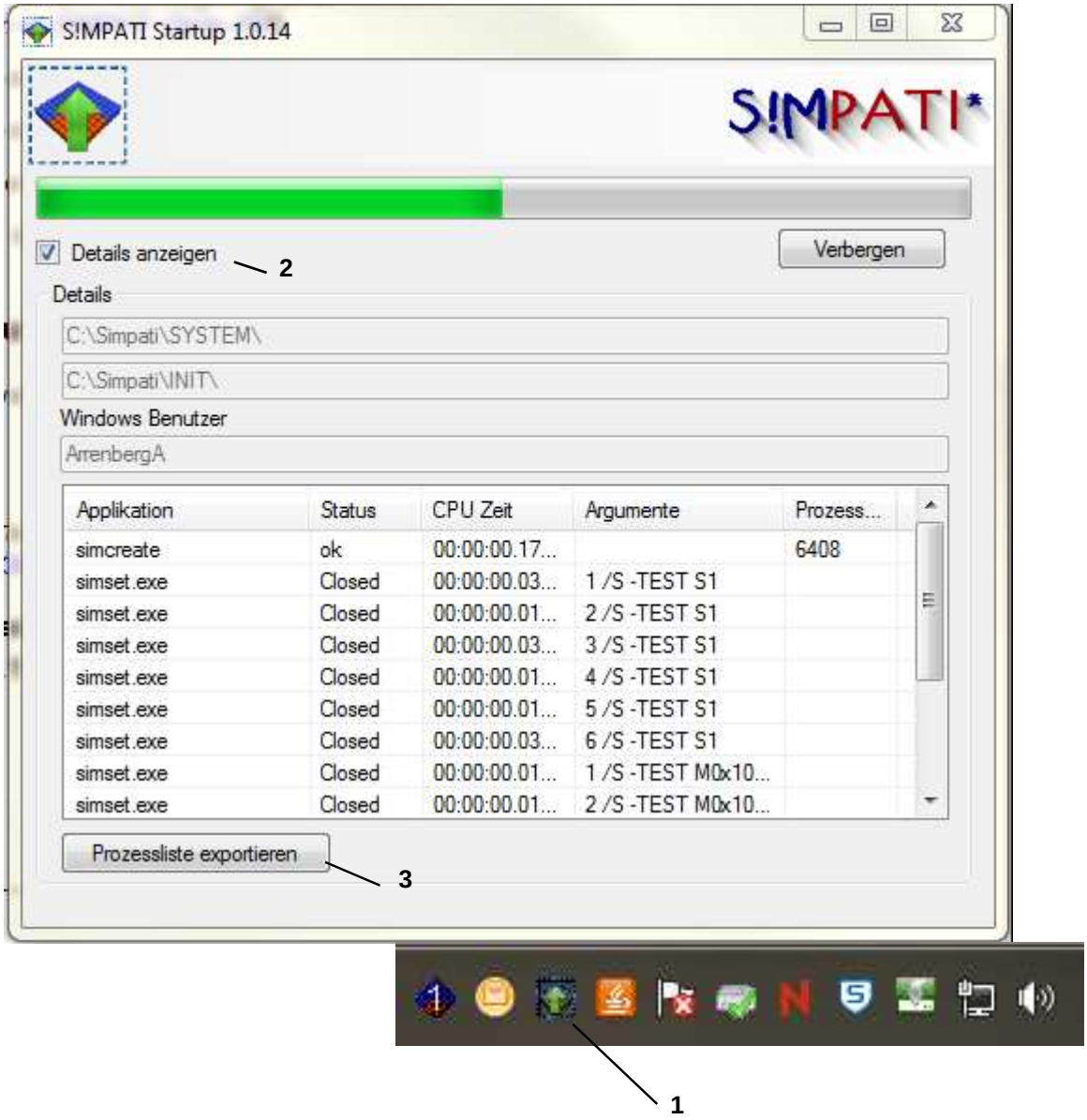


Fig. 4-1: SimStart

1) Option

4.1 SIMPATI* password and user name

Access is not possible without a password.

Upon new installation or delivery the status is as follows:

User group	Factory user name → *Fig. 4-2: Password*	Factory password → *Fig. 4-2: (page 24)*
	Please note that user names and passwords are case-sensitive.	
Admin	Admin	admin

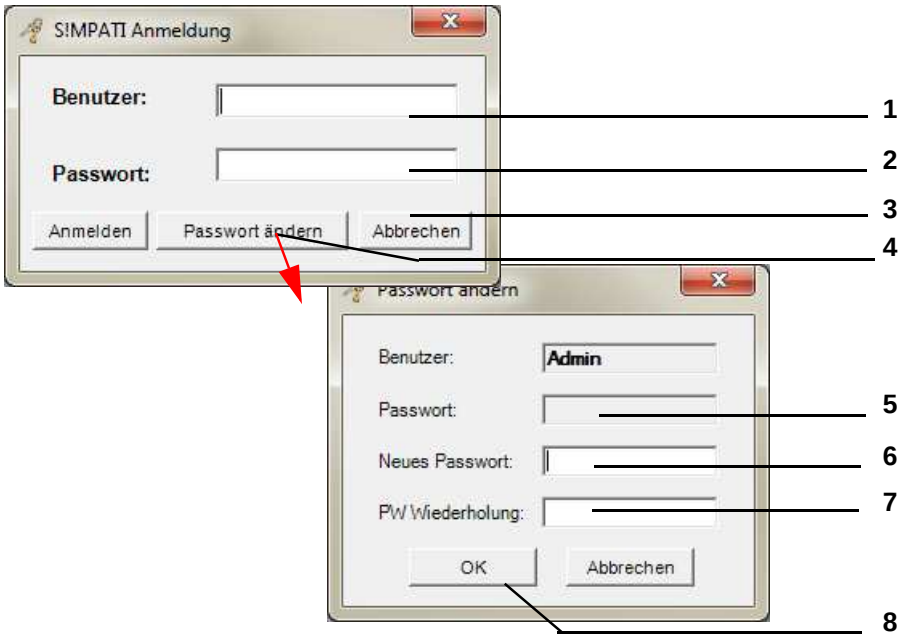


Fig. 4-2: Password

1 User name
2 Password
3 Cancel process
4 Window for changing the password
5 Old password
6 New password
7 Repetition of the new password
8 Confirm new password

Detailed description of the password function → *5.5 User administration (page 31)*

All other users can be created → *5.5 User administration (page 31)*

1) Option

5 THE MAIN MENU AND THE TOOLBOX

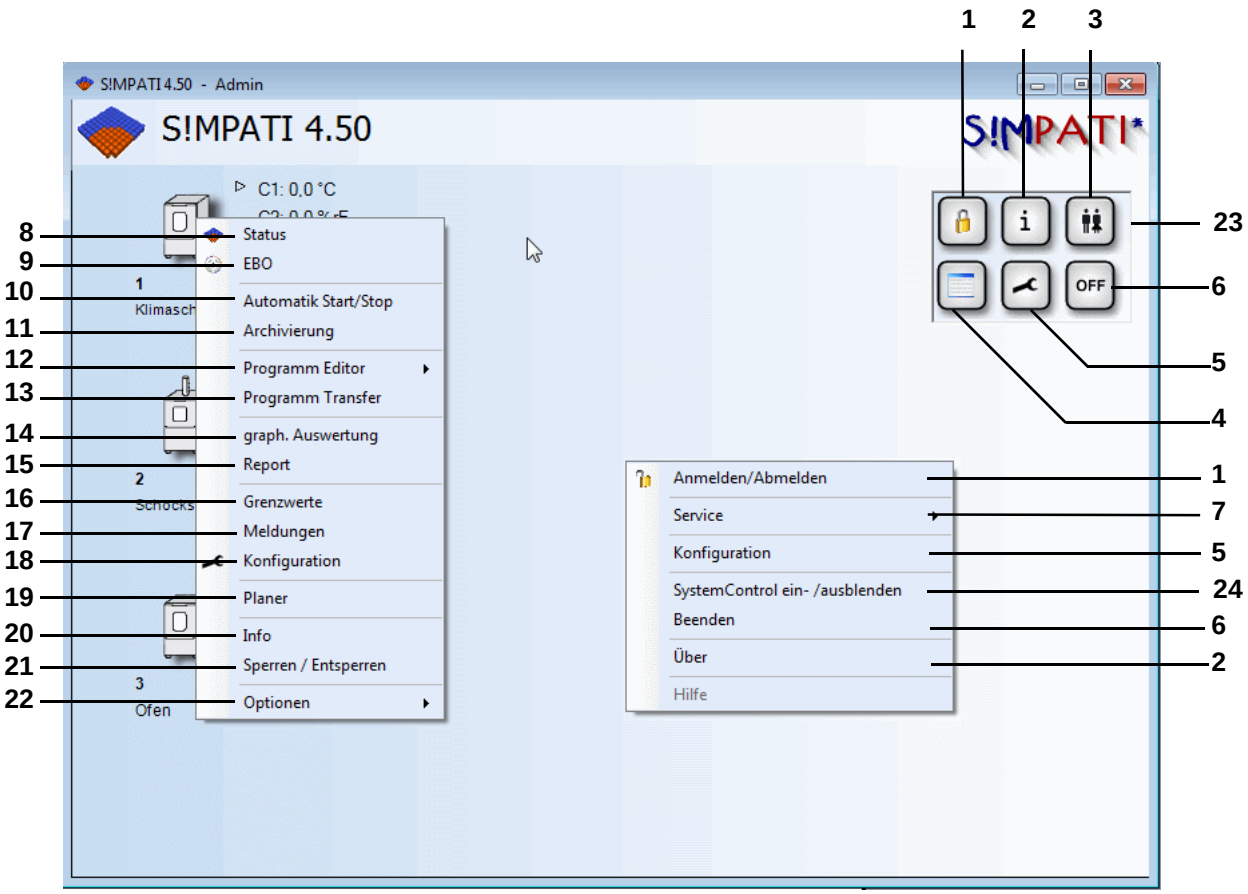


Fig. 5-1: SIMPATI Main menu*

Functions of the toolbox and the main context menu

With the aid of the toolbox you can access every menu that enables you to make settings and administer SIMPATI* to all intents and purposes.

1 The user is logged out in SIMPATI*. Clicking this button again opens up the login menu
→ *Fig. 4-2: Password (page 24)*

2 Information about the SIMPATI* version and licences
→ *5.6 Version information (page 41)*

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 service tools »MTP« and »CTC«

1) Option

Chamber context menu for chamber configuration

8 → *7 Status display for the chamber status (page 49)*

9 → *8 Tests in manual mode via the single user interfaces (page 53)*

10 → *11 Starting/stopping a test program (page 125)*

11 → *13 Archiving, recording and evaluation of a test (page 143)*

12 Creating test program
→ *9.3 Creating a test program with the graphical editor (page 82)*
→ *9.5 Creating a test program for a shock chamber (page 110)*
→ *9.4 Creating a test program with the tabular editor (page 98)*
→ *9.2 Creating a test program with the symbolic editor (page 65)*

13 → *10 Test program transfer between the chamber and SIMPATI* (page 123)*

14 → *13.2 Graphical evaluation (page 145)*

15 → *13.4 Chamber reports, message list (Simreport) (page 165)*

16 → *8.1 The single user interface (Simhand1.exe) (page 53)*

17 → *15.1 Displaying a list of warning messages/alarm messages/error messages (page 173)*

18 → *6.1 Defining general chamber specifications (page 43)*

19 → *12 The Planner (Scheduler) (page 127)*

20 → *6.5 Displaying chamber information (page 47)*

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

23 System control field

24 Show/hide system control field

5.1 Chamber symbols: function and representation

The number of chamber symbols for which a licence was purchased appears in the main menu.

The form of the chamber symbol can be selected via the chamber configuration menu

→ *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)* Item 2.

The size of a chamber symbol can be changed via the chamber context menu.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 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
→ *Fig. 5-2: Configuration Main menu (page 28)*. A description for this can be found under Item 1 to Item 4.

1) Option

Chamber symbol	Explanation
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
M	Test running in manual mode
A	Test running in automatic/program mode
P	Test program paused
B	Busy (status display), e.g. download or upload
D	SIMPATI* is used only for data acquisition purposes
W	Wait for start mode
 or *	Archiving is activated
	Disable symbol Chamber operation has been disabled in SIMPATI* by the user logged in
	Remote disable symbol Chamber operation has been disabled by a client (via web software)[1]. 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 the name of the disabler
	Chamber disabled by Scheduler (chamber cannot be operated at this time) Tool tip and chamber information display the name of the disabler
	Chamber is in internal mode

Tab. 5-1: Symbols

1) Option

5.2 Configuration of the main menu

With the aid of this symbol in the toolbox/context menu you can make the following settings for the main menu

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 5.

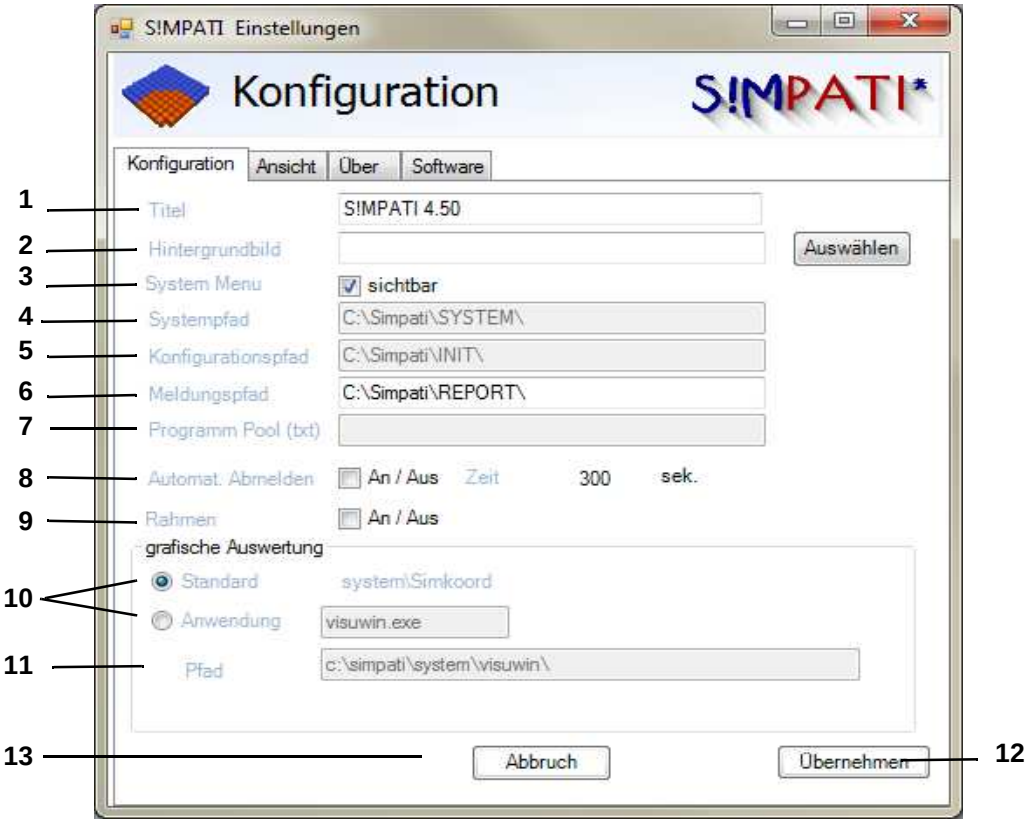


Fig. 5-2:
Configuration Main menu

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 shows/hides the toolbox

4 SIMPATI* program directory

5 This shows the directory in which the chamber's configuration files are saved

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

7 Program pool

8 The user will be logged off automatically after this time if no input is received.

9 The chamber symbols are framed.

10 The graphical evaluation can be opened in standard mode or with Visuwin.exe

11 Path with VisuWin

12 Save settings

13 The menu is closed

1) Option

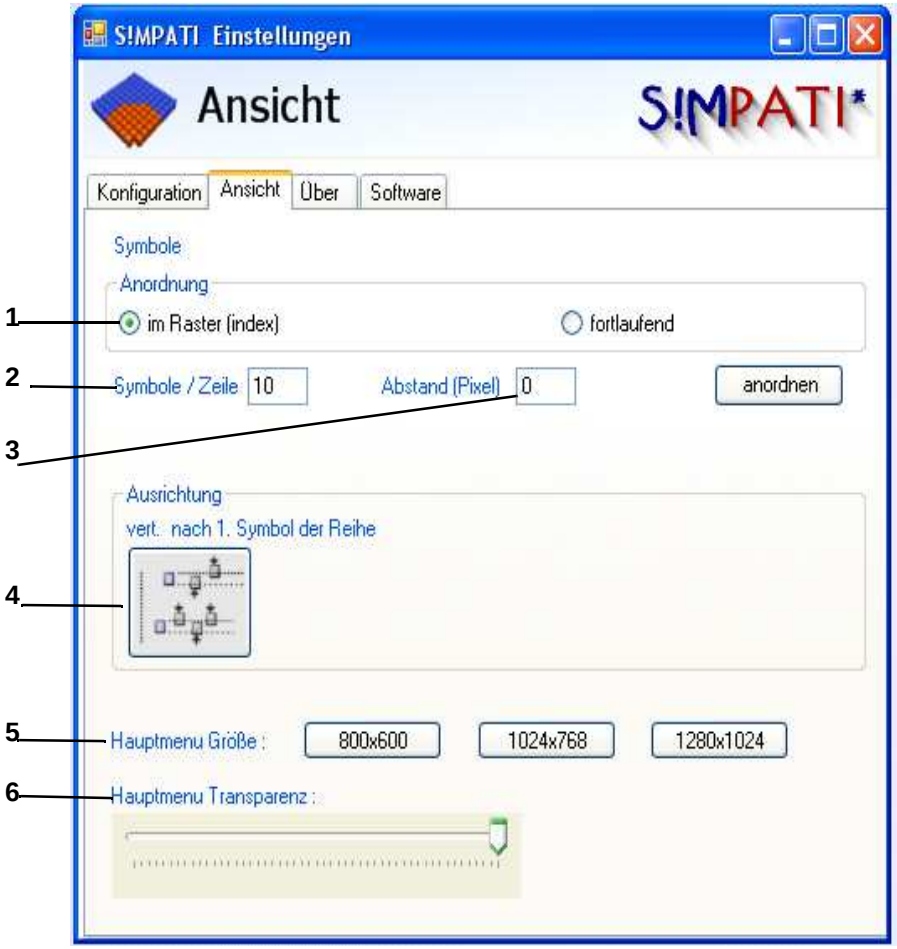


Fig. 5-3: Configuration Main menu "View"

1 The number of chamber symbols Item 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 Main menu size can be configured

6 Transparency in the main menu can be configured

1) Option

5.3 Chamber representation in table form in the main menu

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

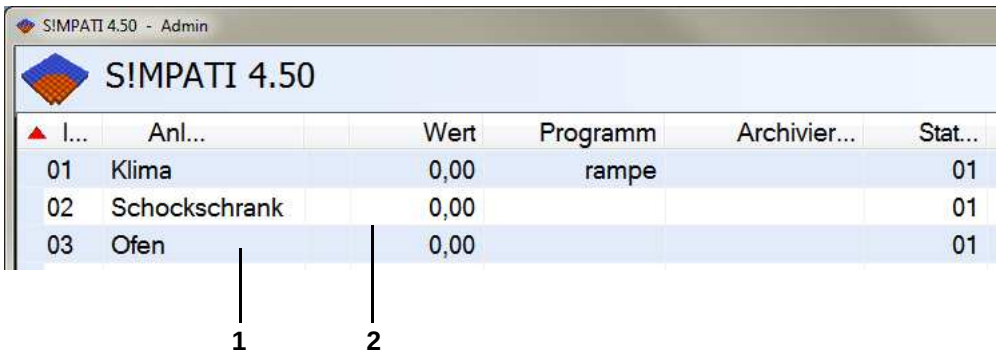


Fig. 5-4: Chambers in the main menu

1 Using the numeric pad 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 table sheet desired and the table sheet can be displayed larger or smaller depending on the contents.

5.4 Logging SIMPATI* users in/out

The SIMPATI* user is logged out via this symbol in the toolbox/context menu.

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 1.

SIMPATI* continues to run.

The user has to log back in again. → *Fig. 4-2: Password (page 24)*

This function provides protection against access by unauthorised persons.

1) Option

5.5 User administration

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 3.

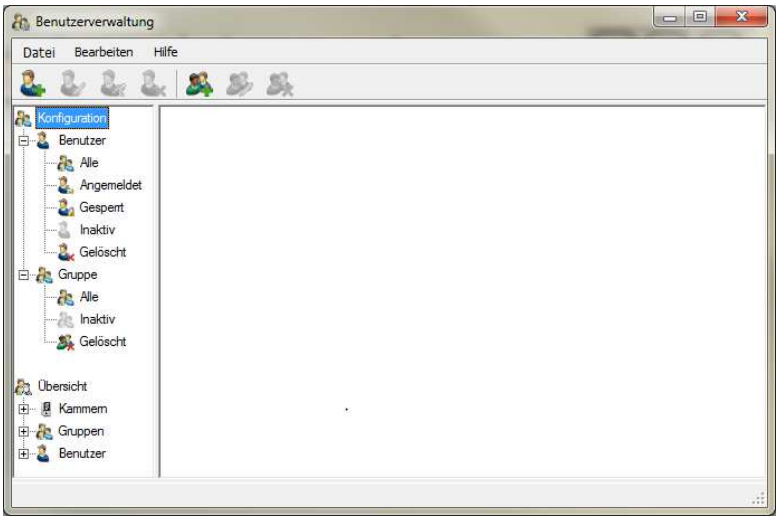


Fig. 5-5: User administration - Start screen

NOTE

Passwords in SIMPATI are administered independent of the access rights on the PC, i.e. the SIMPATI* administrator does not automatically have the rights of a PC administrator.*

General notes

- The administrator does not see passwords; he is allowed to set and assign new ones.
- The administrator is allowed to disable/enable users.
- The user logged in can be seen in the header of the SIMPATI* main menu.
- Logins/logouts are documented in the report file.
- Only one user can be logged in at a time in SIMPATI*.
- The administrator assigns system- and chamber-specific rights to individual users or groups; the administrator can change these rights at any time.
- Individual users can be managed and grouped in various user groups.
- Duration of password validity can be set.

  Please refer to the description → *4 SIMPATI*-program startup (page 23)*

1) Option

User administration

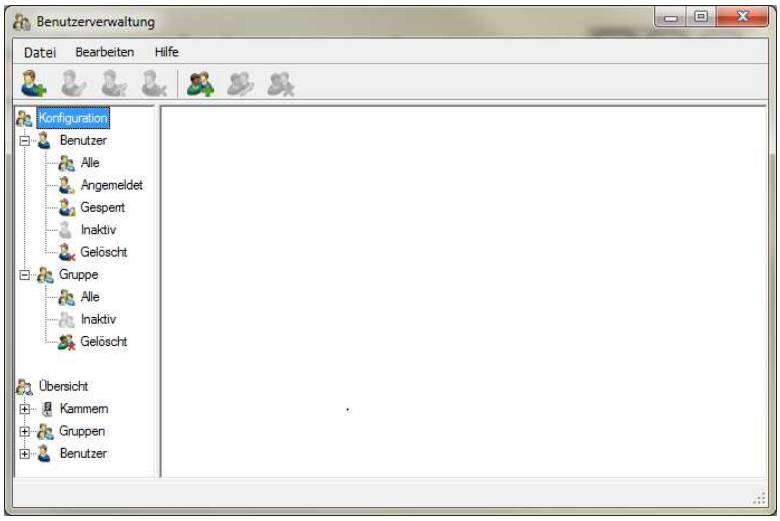


Fig. 5-6: User administration - Start screen

You can create a new user via the menu bar or the user's context menu.

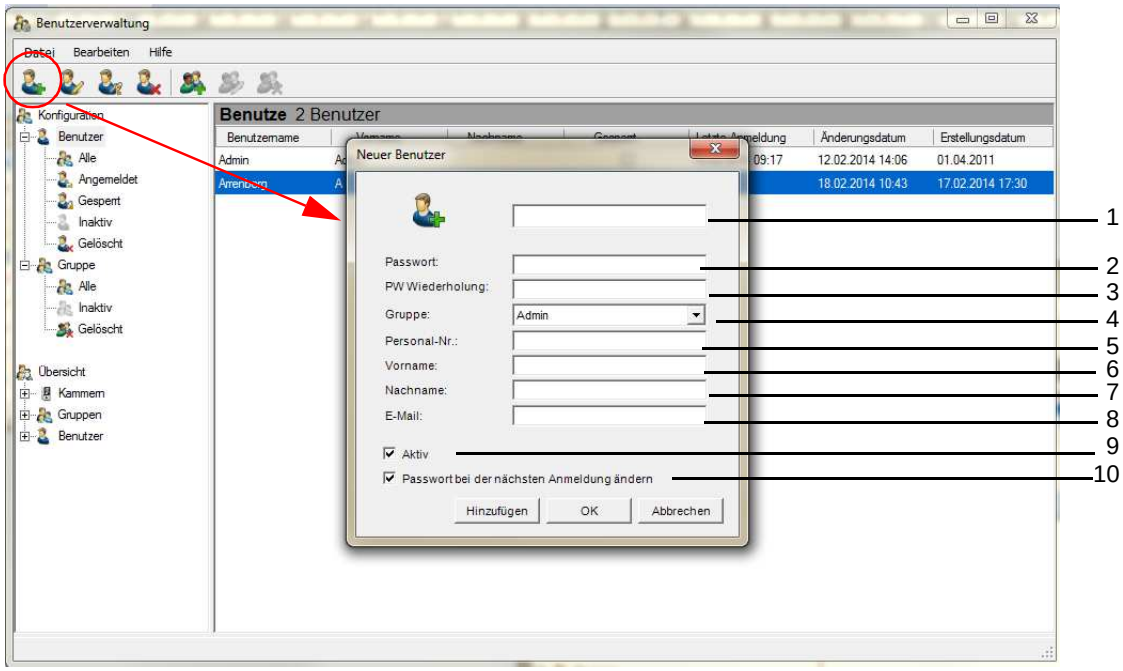


Fig. 5-7: New user

1 Enter name

2 Enter password

3 Repeat password

4 Group assignment (a user can belong to 1 group maximum)

5 Enter personal number (optional)

6 Enter first name (optional)

7 Enter last name (optional)

1) Option

8 Enter e-mail address (optional)

9 User activation / deactivation

10 The user is prompted to change his password the next time he logs in.

Permissions and access rights

Users are assigned permissions and access rights via SIMPATI* user administration.

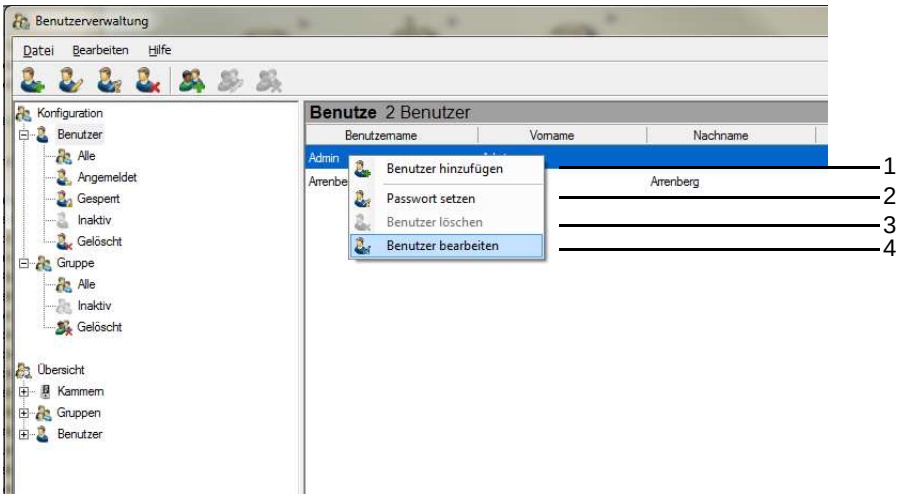


Fig. 5-8: Managing access rights

The user context menu takes you to the following functions:

1 Create user

2 Set password, assign new password or change password on the next login

3 Delete user

4 Edit user: General data, as well as settings and system and chamber rights, are defined here.

1) Option

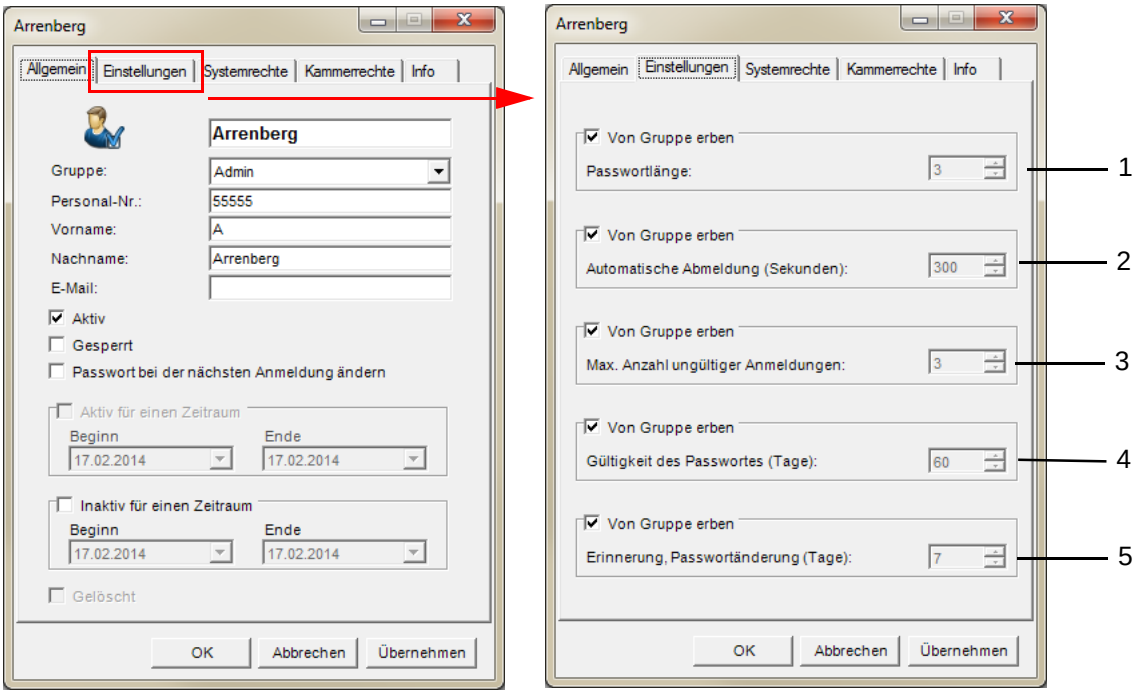


Fig. 5-9: Settings - user rights

Settings

1 Minimum password length: Input of 1 to 30 characters is possible
When function »21. CFR Part 11« is active, input of min. 8 - 30 characters is possible. Of these, 3 have to be characters from the following categories: lower case letters, upper case letters, special characters or numbers.

2 Automatic logout if there is no access during this time.
When function »21. CFR Part 11« is active, the factory-set time is 5 min and can be changed from 40 - 300 sec.

3 maximum number of invalid login attempts, max. input 30.
When function »21. CFR Part 11« is active, the maximum number of invalid login attempts is limited to 3.

4 Total duration of password validity, input of 1 - 1000 days is possible.
When function »21. CFR Part 11« is active, input is limited to 1 - 100 days.

5 Current password validity duration reminder.

System rights

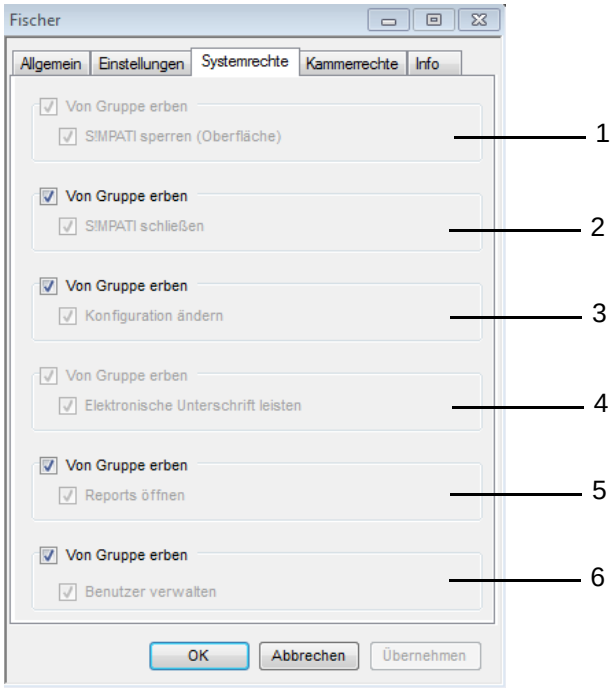


Fig. 5-10: System rights

1 Locks SIMPATI*; password input is required for the next access

2 Close SIMPATI*

3 Change SIMPATI* system configuration
→ *5.2 Configuration of the main menu (page 28)*

4 Provide electronic signature (optional)

5 Open report

6 Manage user

7 Info

1) Option

Chamber rights

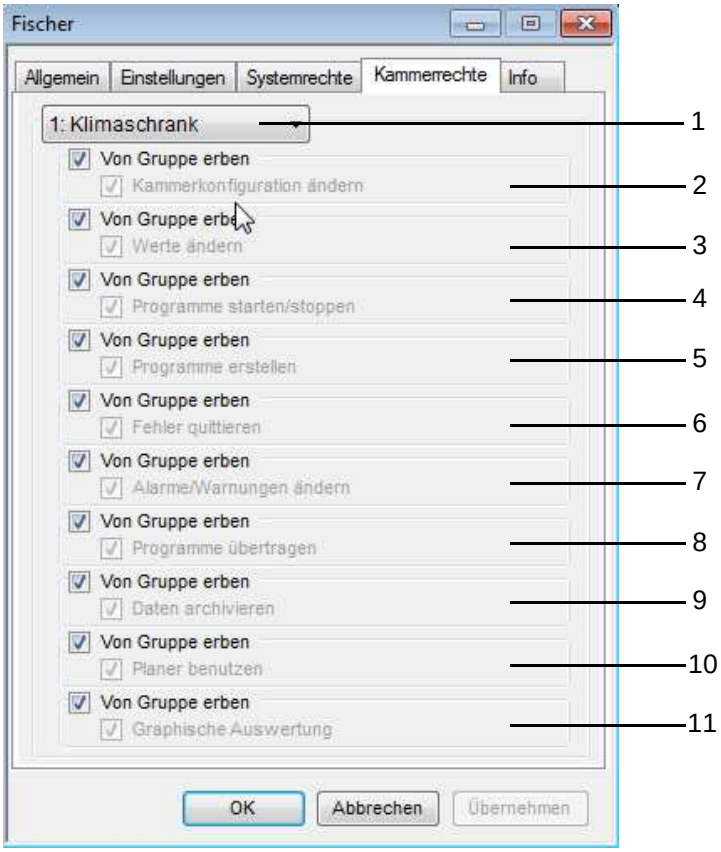


Fig. 5-11: User administration - rights for the chamber

1 Select chamber

2 Change chamber configuration

→ *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)*

3 Change nominal values, control variables, digital channels

4 Start and stop programs

5 Create programs

6 Acknowledge error messages

7 Change alarm and warning limits

8 Transfer programs

9 Archive data

10 Planner (Scheduler): Display, create and edit events

→ *12 The Planner (Scheduler) (page 127)*

11 Graphical representation of the test sequence

1) Option

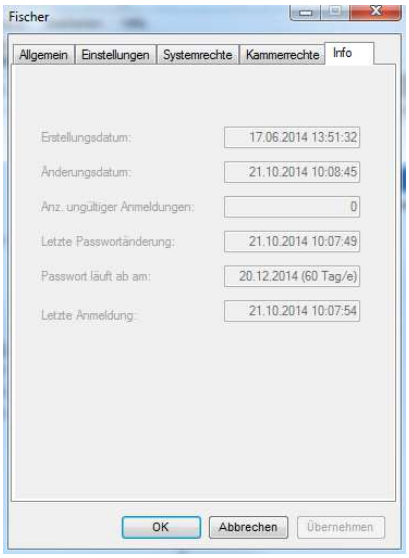


Fig. 5-12: User data

User administration functions Group

The group context menu takes you to the following functions:

Fig. 5-13: User groups

1 Add new user group

2 Delete group

3 Enter group name

1) Option

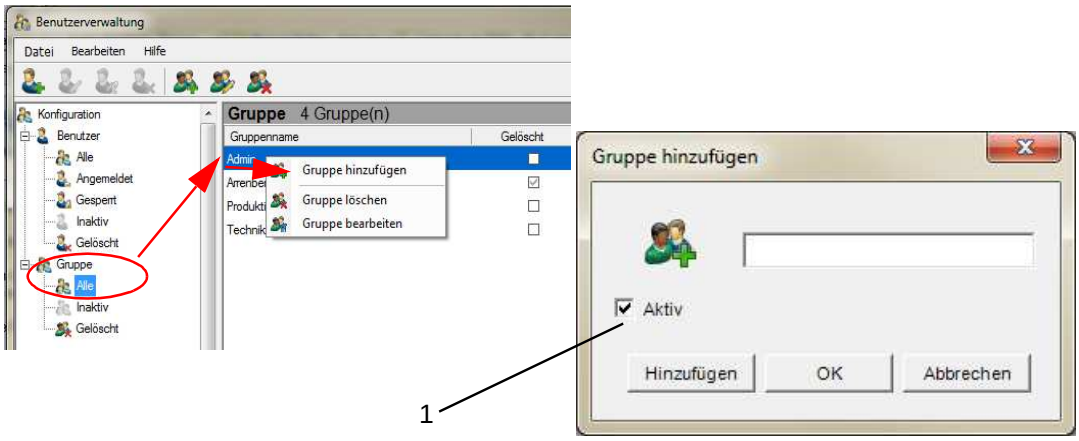


Fig. 5-14: User administration - Adding group

1 Activate/deactivate group

Fig. 5-15: Activating/deactivating group

1) Option

Editing menu

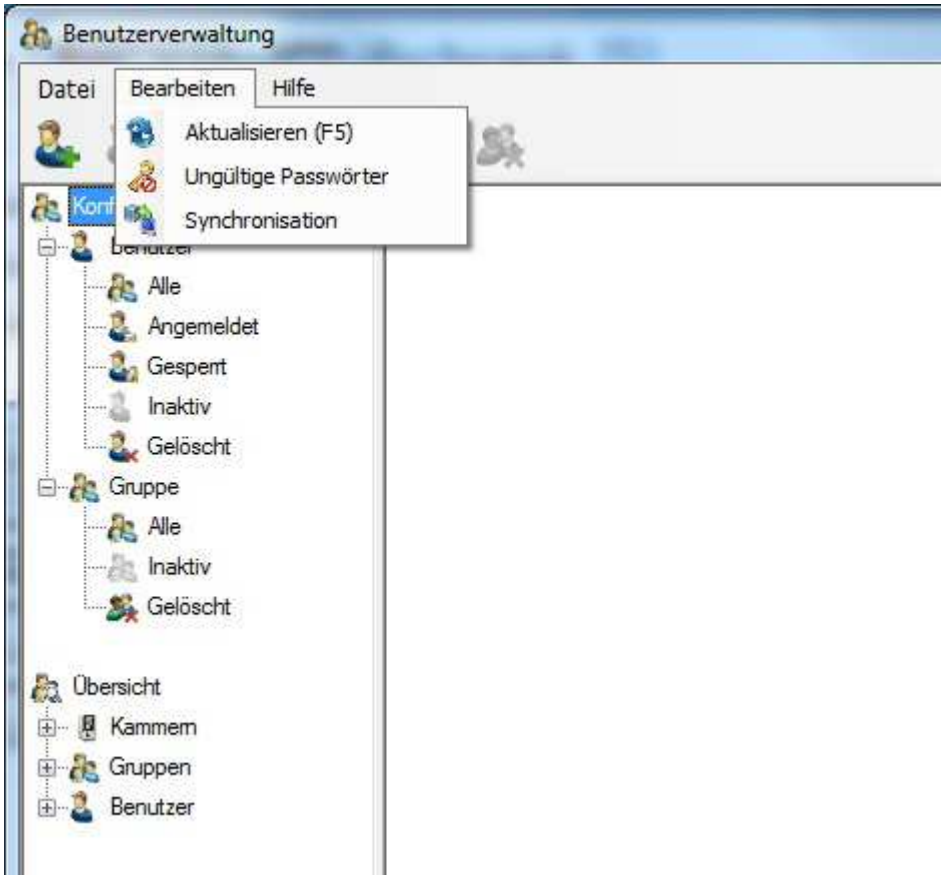


Fig. 5-16: Editing menu

1 Enables the definition of disallowed passwords. → *Invalid passwords (page 40)*

2 Enables the transfer of users, including the rights assigned to them, to the touchpad of the chamber selected. → *Synchronisation (page 40)*

1) Option

Invalid passwords

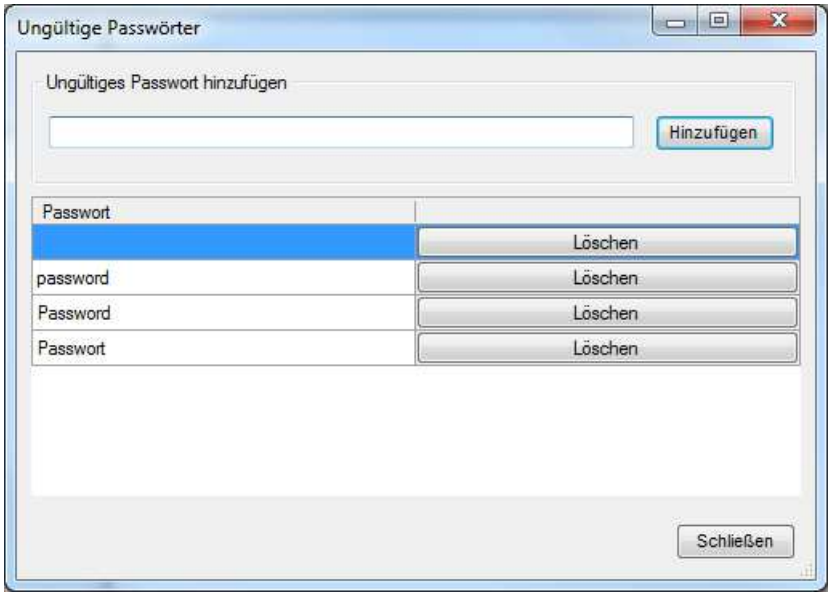


Fig. 5-17: User administration - Invalid passwords

Synchronisation

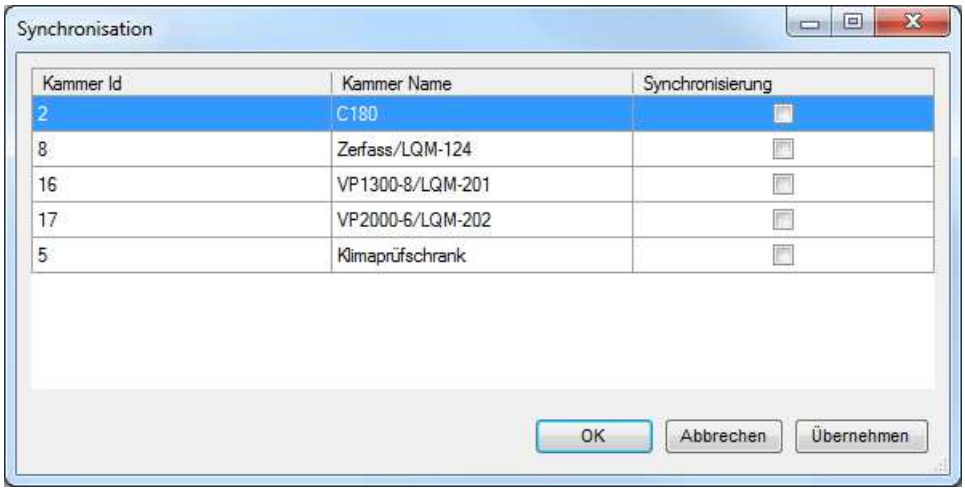


Fig. 5-18: User administration - Synchronisation

1) Option

5.6 Version information

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 2

- SIMPATI* version number
- Licences purchased out of total possible licences
- Serial Number
- Registration code

5.7 Quitting SIMPATI*

Use this symbol in the toolbox/context menu to quit SIMPATI*.

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 6.

1) Option

Quitting SIMPATI*

1) Option

6 CHAMBER SETTINGS IN SIMPATI*

6.1 Defining general chamber specifications

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 18.

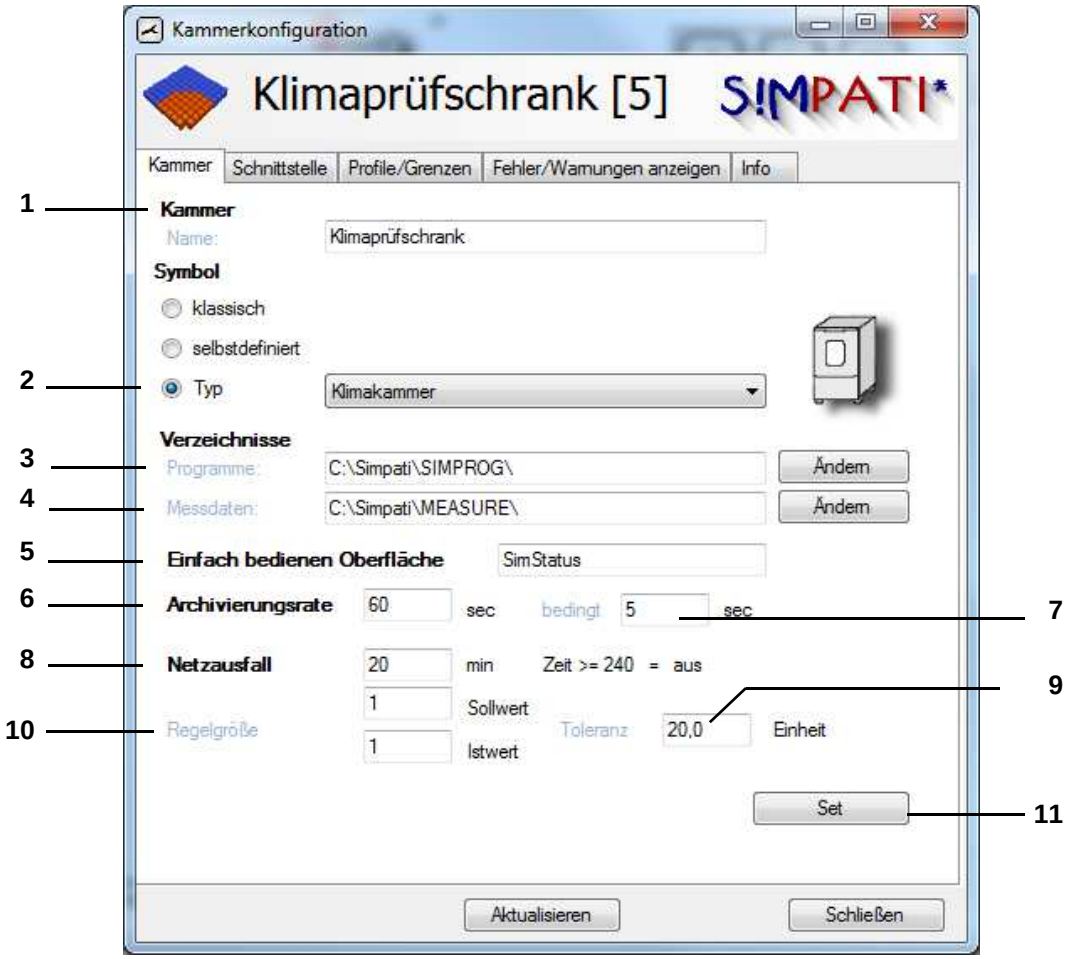


*Fig. 6-1: Chamber configuration in SIMPATI**

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. Enter "simhand1" for the single use interface. When making your selection, please take into account the information in chapter → *8 Tests in manual mode via the single user interfaces (page 53)*.
For the description of the single user interface → *8.1 The single user interface (Simhand1.exe) (page 53)*.

1) Option

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 "Fast archiving" option.

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 Item 10 control variable 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 Item 10 control variable must not deviate from the nominal value by more than the number of units indicated here, otherwise the test will be stopped. In order to continue the test, the Item 8 power failure time 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 nominal value if the test is to be continued after a power failure.

11 Save the settings.

1) Option

6.2 Setting up the interface between the chamber and SIMPATI*

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 18.

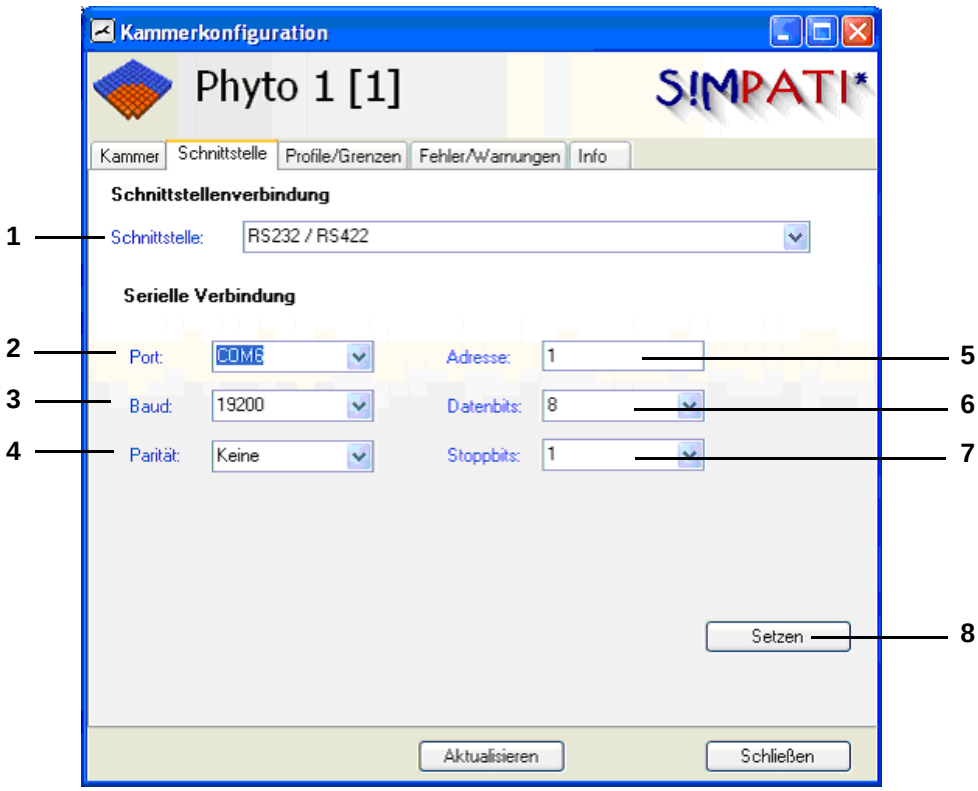


Fig. 6-2: Chamber configuration: Interfaces

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.

1) Option

6.3 Profiles/limits

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 18.

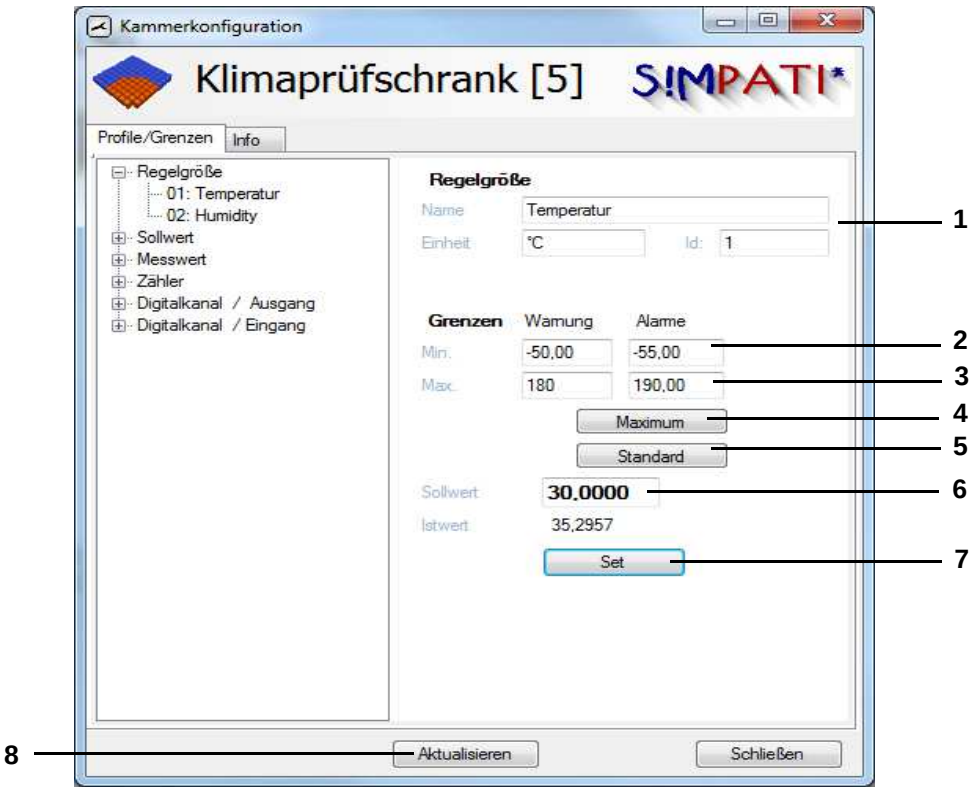


Fig. 6-3: Chamber configuration: Profiles/limits

1 Designation, unit and ID of the parameter selected
2 Lower limit for warnings and alarms
3 Upper limit for warnings and alarms
4 Maximum input values for warning and alarm limits
5 Standard system values for warning and alarm limits
6 Nominal value input
7 Save settings
8 Update the view

6.4 Displaying errors/warnings

The checkbox "Simpati limit monitoring off" can only be selected, if you have "Change alarms/ warnings" permission.

The register is described at the following location:

→ *15.1 Displaying a list of warning messages/alarm messages/error messages (page 173)*

1) Option

6.5 Displaying chamber information

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 20.

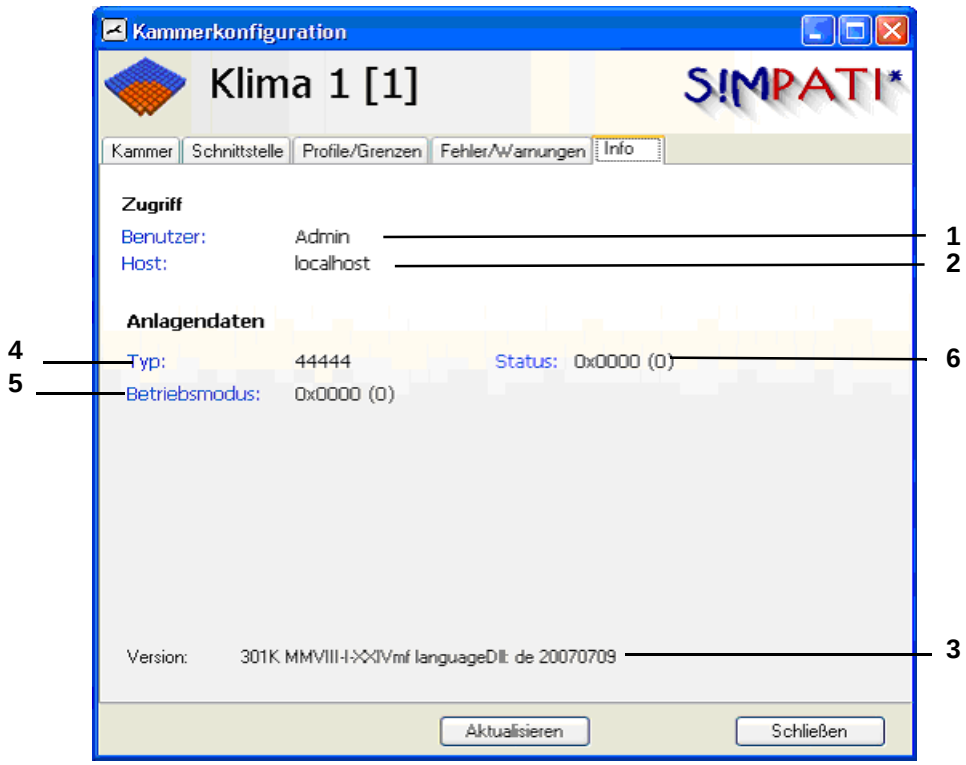


Fig. 6-4: Chamber information

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

1) Option

Displaying chamber information

1) Option

7 STATUS DISPLAY FOR THE CHAMBER STATUS

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

→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 8

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

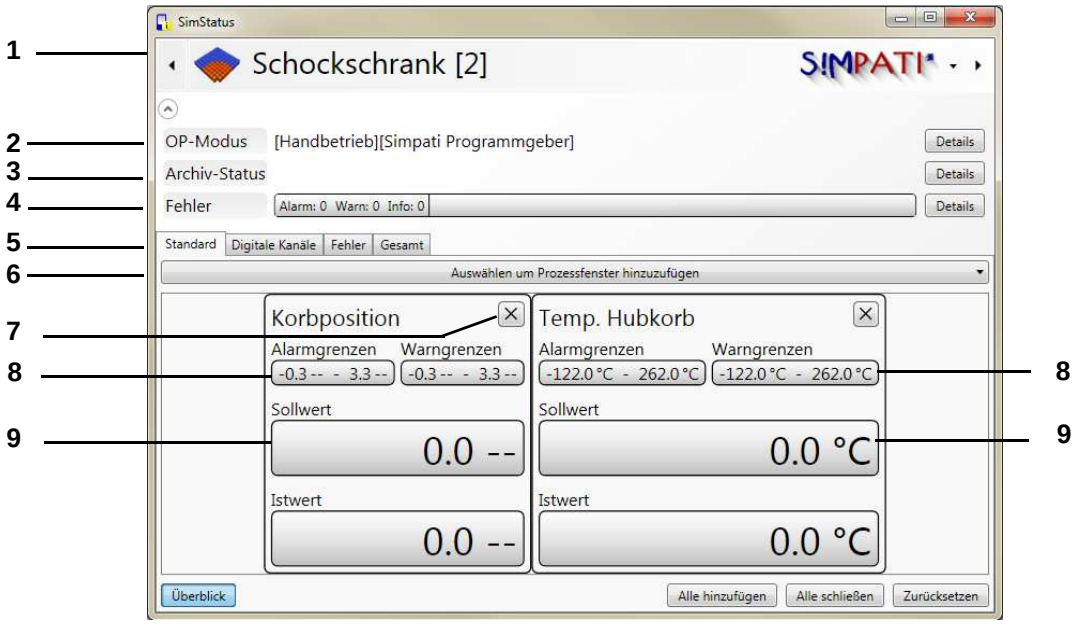


Fig. 7-1: Status display for the chamber status

1 Chamber selection

2 Operating mode

In automatic/program mode you can access a menu window containing information about the test program *(page 51)*.

3 Archiving

If the test is to be recorded, then a menu window with archiving information will be available *(page 52)*.

4 Display warning/alarm/fault messages

5 Select the display for control variables, set values, digital channels and limits

6 Select the displayed process data

7 Close window

8 Input option for warning and alarm limits

9 Input option for nominal values

1) Option

The following window appears when clicking on one of the fields marked with "9":

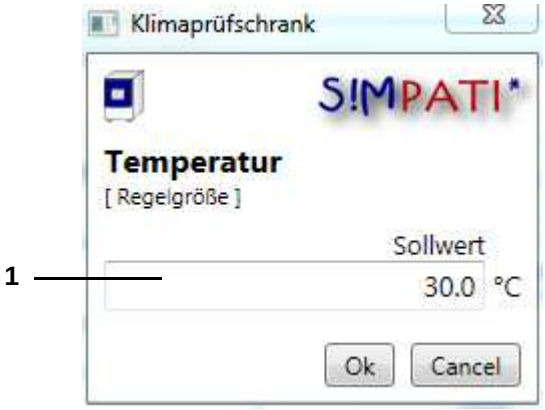


Fig. 7-2: Input menu - nominal value

1 Enter value and confirm with "Ok"

When function CFR21Part11 is active, the window for entering the password appears:

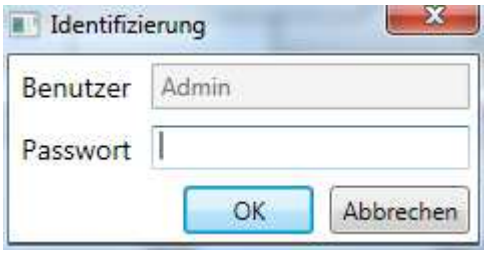


Fig. 7-3: Input menu - password prompt

1) Option

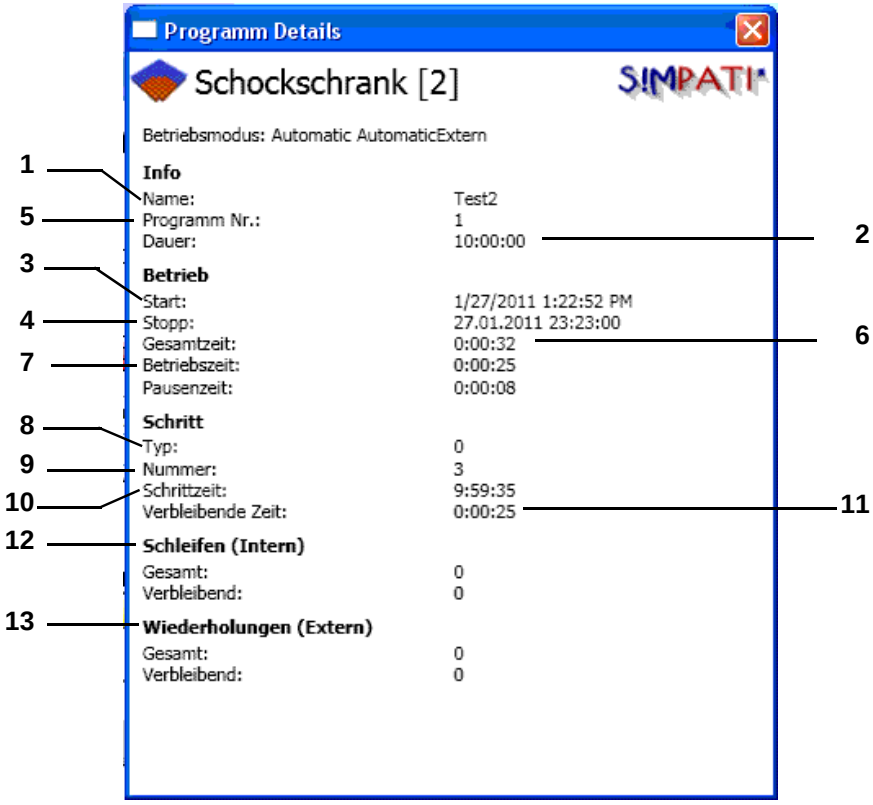


Fig. 7-4: Information window for automatic/program mode

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)

1) Option

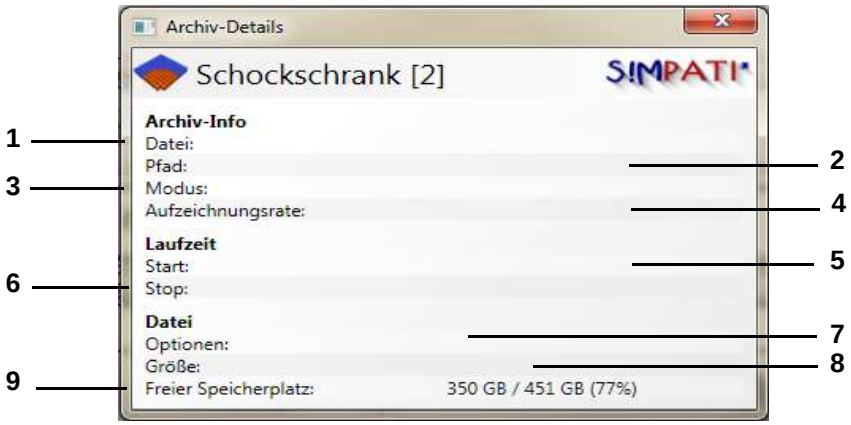


Fig. 7-5: Window with archiving information in automatic/program mode

1 Archive name

2 In this directory, the measurement file will be stored

3 Recording mode

4 Recordings will be made at the archiving cycle defined for the event of a malfunction
→ *13.1 Archiving (page 143)*

5 Start of recording

6 End of recording (coincides here with the end of the test program)

7 Options, e.g. daily name change

8 Size of the archive file

9 Free hard drive memory

1) Option

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. 6-1: Chamber configuration in SIMPATI* (page 43)*

8.1 The single user interface (Simhand1.exe)

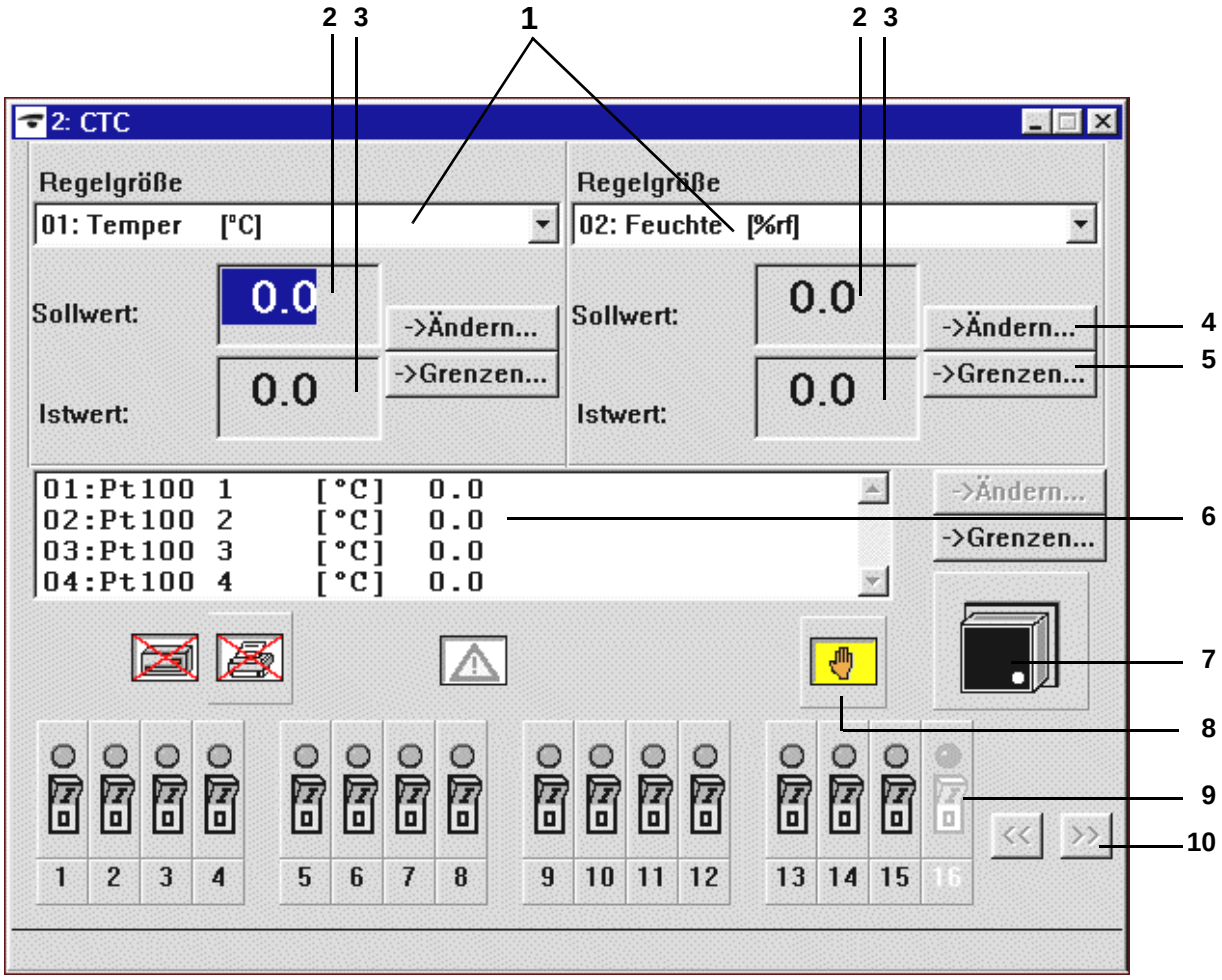


Fig. 8-1: Main menu of the single user interface (simhand1.exe)

1 List box of the control variables

2 Nominal value display

3 Actual value display

4 Nominal value input *(page 55)*

5 Display of limit values for the control variable

→ *Fig. 8-5: Adjusting limits with Simhand1.exe (page 56)*

6 Measured values

7 On/Off switch

8 Status display symbols (manual mode, automatic/program mode, etc.)

1) Option

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.

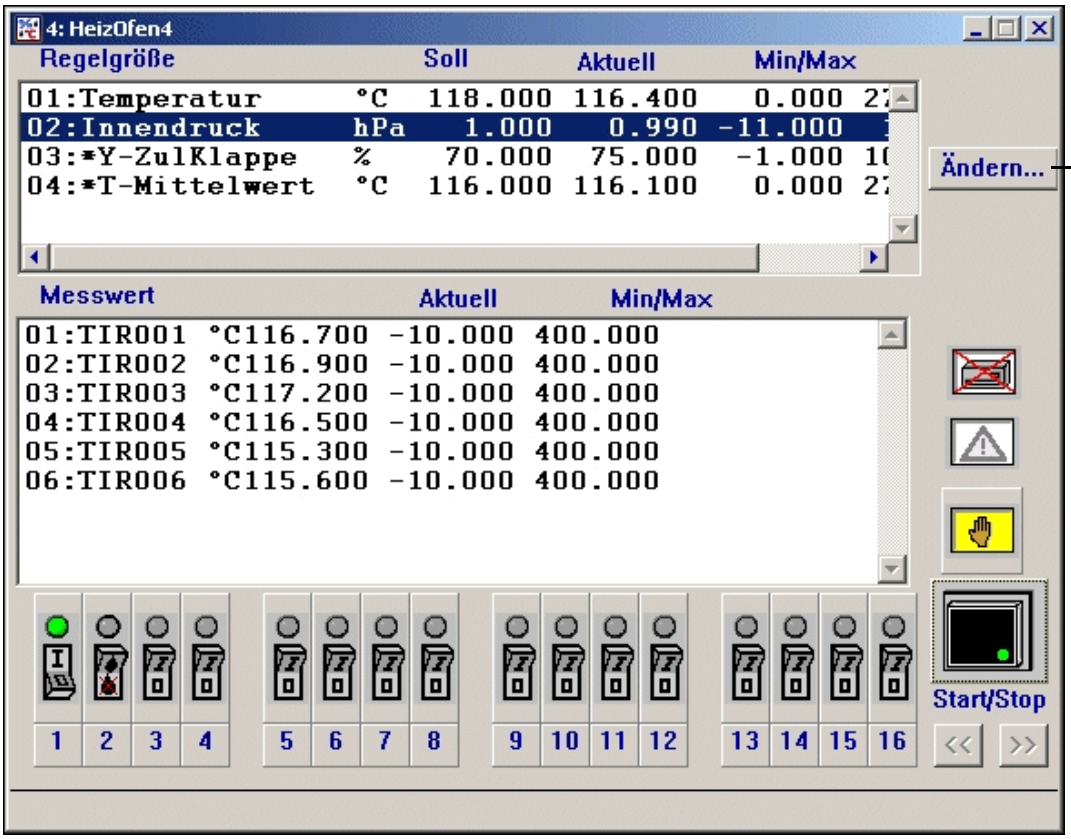


Fig. 8-2: Single user interface for more than two control variables

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 nominal value

1) Option

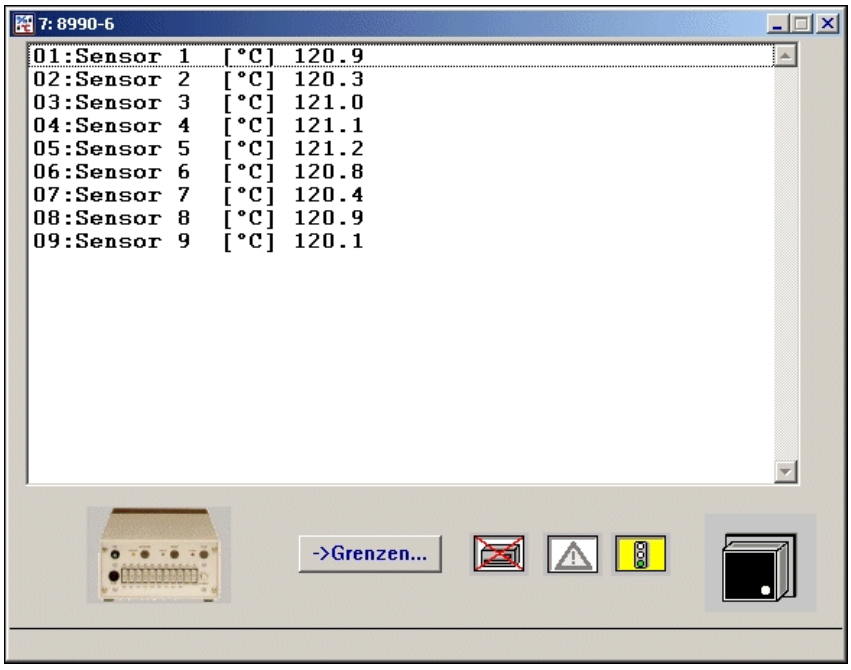


Fig. 8-3: Example: Easy operating interface for a data logger

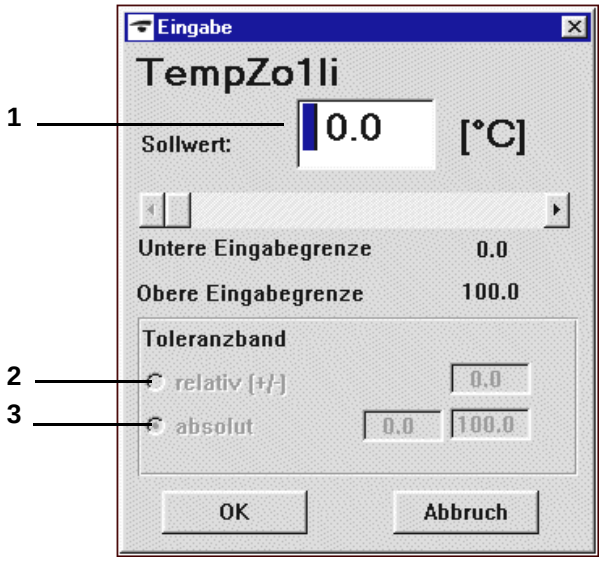


Fig. 8-4: Nominal value input with Simhand1.exe

1 Nominal value input

2 Relative tolerance band, temperature change in %

3 Absolute tolerance band, fixed limits are set

1) Option

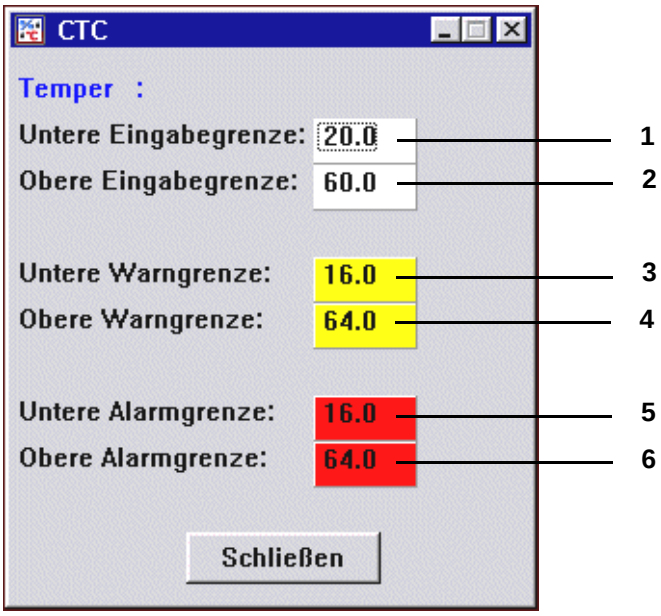


Fig. 8-5: Adjusting limits with Simhand1.exe

The limits can be taken from this display.

1 Lower input limit

2 Upper input limit

3 Lower warning limits

4 Upper warning limit
If a chamber reaches one of the warning limits, a warning message is output.

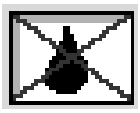
5 Lower alarm limits

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 indicated under item.

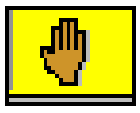
→ *8.1 The single user interface (Simhand1.exe) (page 53)*



Status indicator: Humidity is switched on/off

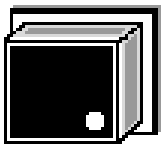
If there is an error, the symbol is displayed in colour.

Status indicator: Archiving is switched on/off



Zustandsanzeige: The operating mode (manual/automatic/program mode) is indicated by the symbol. → *Fig. 8-7: Status indication with Simhand1.exe (page 58)*

1) Option



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 57)*

Printer configuration

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

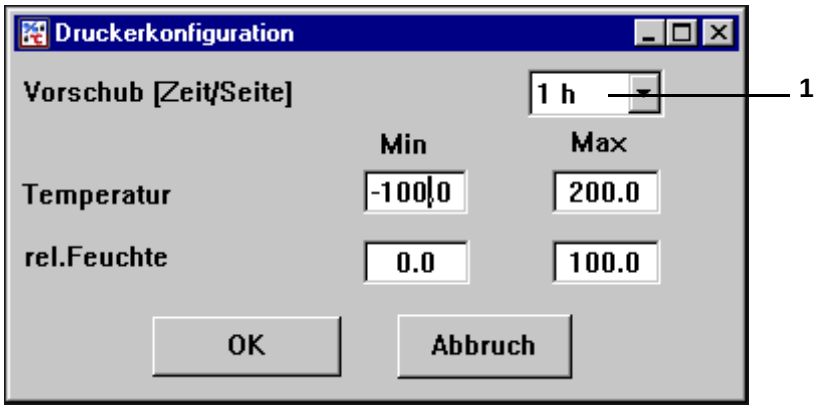


Fig. 8-6: Printer configuration with Simhand1.exe

Recording takes place within the specified limits. The recording timeframe per page is specified in Item 1.

1) Option

Operating status

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

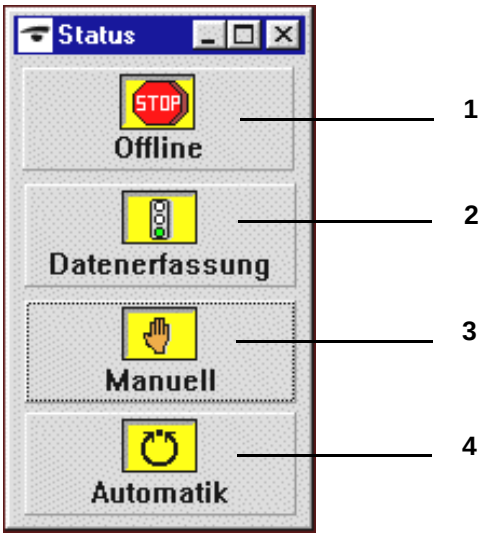


Fig. 8-7: Status indication with Simhand1.exe

1 Communication with the chamber has been interrupted

2 Chamber data are transferred, the actual values are recorded.

3 Manual mode

4 Automatic/program mode

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 programs that were previously loaded from the PC to the chamber controller

→ *10.1 Loading test programs from SIMPATI* to the chamber controller (page 123)*

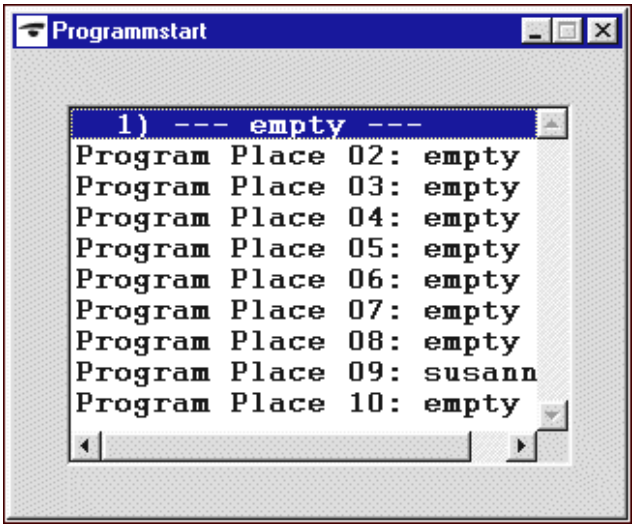


Fig. 8-8: Test programs

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

1) Option

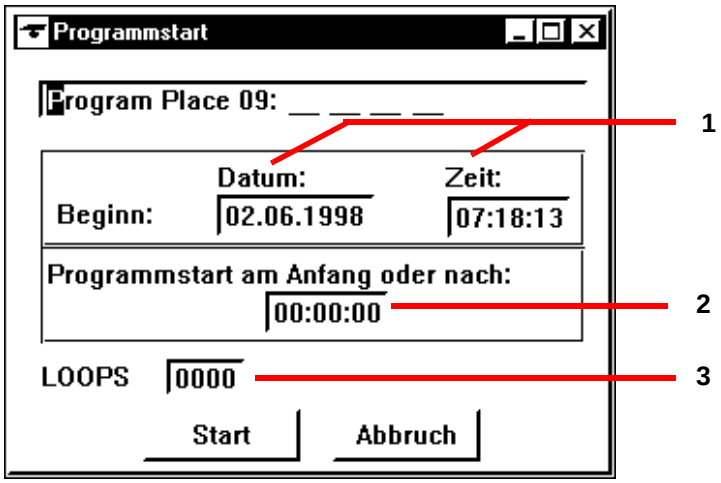


Fig. 8-9: Start data

1 Start date and start time

2 Test program lead time / absolute time or line number

3 Number of test program repeats

The data for this test program are entered in the menu window (top right-hand corner)

→ *CTC, TC, MOPS controller Simhand1.exe (page 60)* or → *DMR controller Simhand1.exe (page 60).*

1) Option

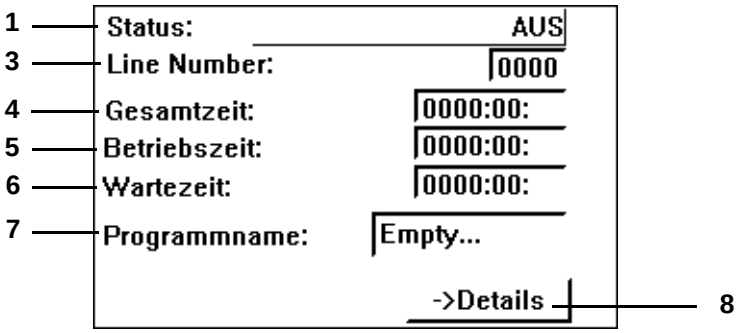


Fig. 8-10: CTC, TC, MOPS controller, Simhand1.exe

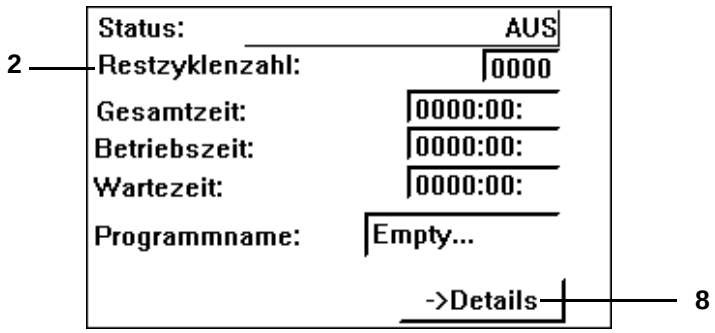


Fig. 8-11: DMR controller, Simhand1.exe

1 Chamber status
   – WAIT FOR START: Wait for Start
   – OFF: Chamber is switched off
   – IN OPERATION: Chamber is switched on
   – RUN: Test program running
2 Remaining cycle count: (DMR controller), remaining test program repeats
3 Line Number: (CTC, TC, MOPS controller), line number
4 Total runtime of test program following start
5 Test program runtime
6 Pause time
7 Test program name
8 This function is not available to the customer.

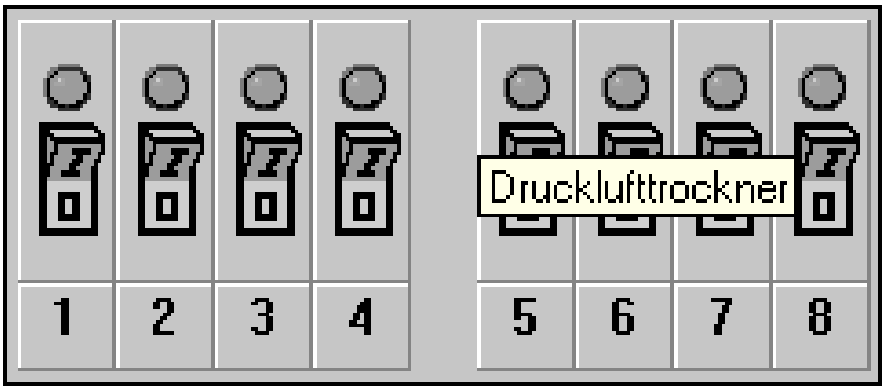


Fig. 8-12: Compressed air dryer

A digital channel can be switched on or off by clicking once on a switch symbol. The indicator above 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

1) Option

The single user interface (Simhand1.exe)

1) Option

9 CREATING A TEST PROGRAM

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

→ *5 The main menu and the toolbox (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 when saving.

When programming loops, please note the following → *Loop (page 95)*

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

9.1 General notes on creating programs

9.1.1 Guaranteed holding time

In the event of major temperature changes, a certain time persists before the temperature required is reached. The programmed test duration (holding time) is kept at the temperature required using this function. This means that SIMPATI* detects when the required temperature is reached and only then starts the programmed holding time. During this time, the temperature is not changed until the holding time has expired.

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

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 re-entered.

The guaranteed holding time function 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.

Guaranteed holding time is activated via digital channel 8.

In order that SIMPATI* can detect when the temperature required is reached, a tolerance band must be programmed. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function to set the tolerance band.

Please note that the tolerance band must be revised after a jump.

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.

1) Option

... 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:

Guaranteed holding time is activated via digital channel 17. Digital channel 17 is not configured by default and must be adapted if required using the Service Hotline.

In order that SIMPATI* can detect when the temperature required is reached, an envelope curve must be programmed. The envelope curve has a function similar to the tolerance band. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function to set the envelope curve.

If there is a jump, the envelope curve does not need to be revised manually 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.

In order that SIMPATI* can detect when the temperature required is reached, a tolerance band must be programmed. Click with the right mouse button on a profile data point on the temperature curve. Now use the context menu function to set the tolerance band.

Use the Wait function as an alternative to the tolerance band.

The Wait function can also be programmed in the symbolic editor in the Mincon, Simcon and Simpac controllers → *Wait function (page 71)*.

1) Option

9.2 Creating a test program with the symbolic editor

You can access the menu via the context menu of the chamber.
(»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 that are not displayed will appear as inactive on the control panel and will not be taken into account by the program sequence, i.e. these profiles are kept at the value set.

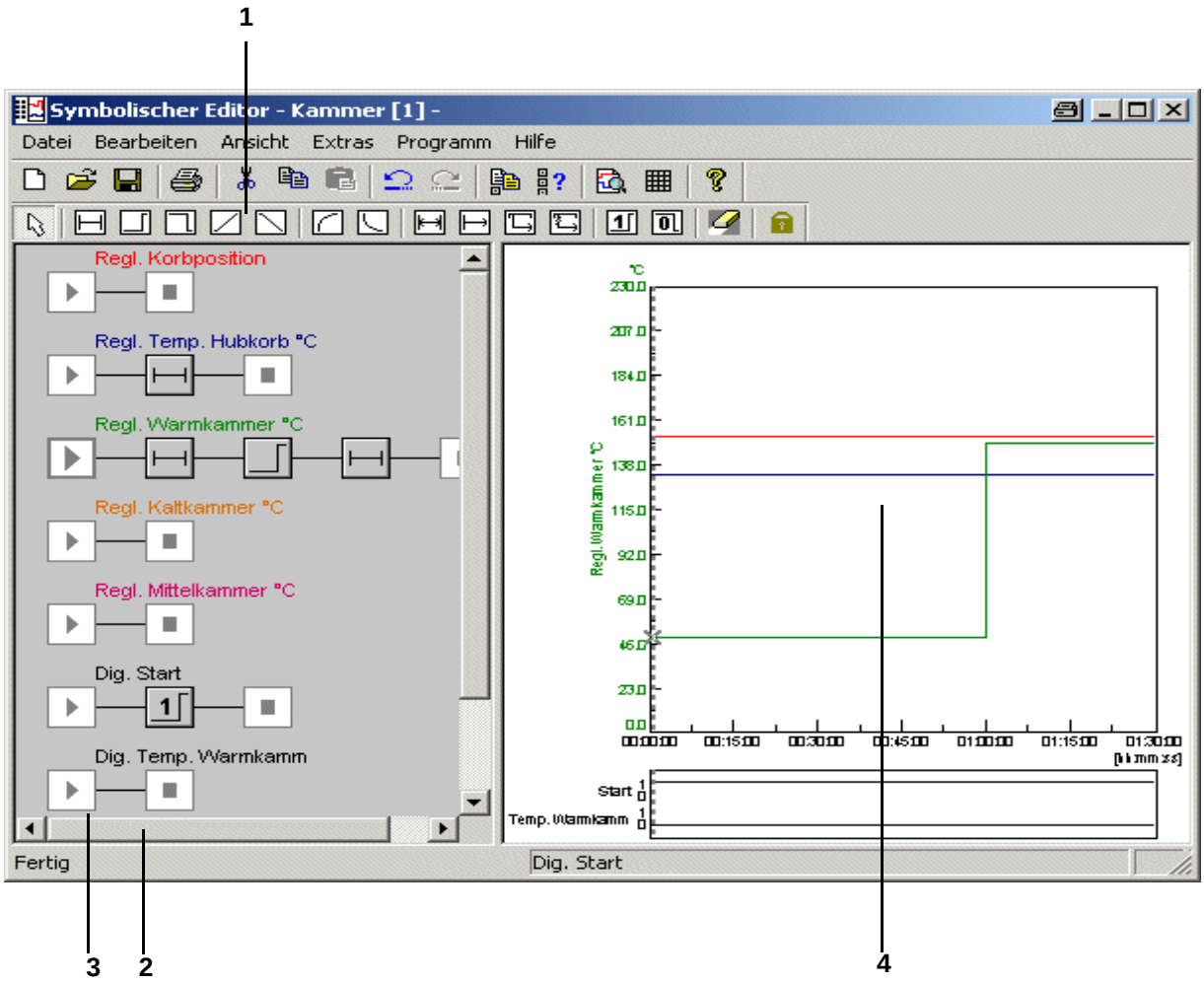


Fig. 9-1: Symbolic editor

1 Programming symbols

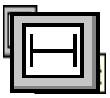
2 Profile

3 Link line

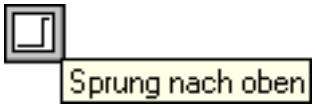
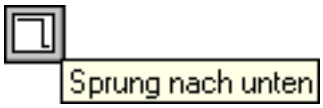
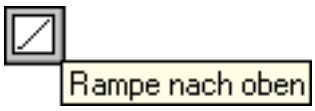
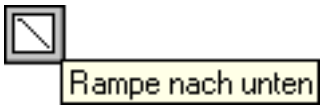
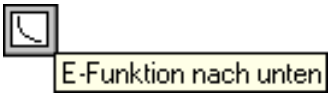
4 Preview

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.

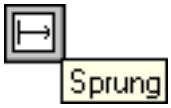
1) Option

Program block	Explanation
	Selection function → *Selection block (page 70)*
	Time block for all profiles → *Time block (page 70)*

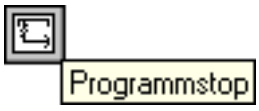
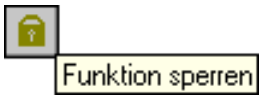
9.2.1 Analog function for control variables and setpoints

Program block	Explanation
	Nominal value jump up → *Nominal value jump up/down (page 70)*
	Nominal value jump down → *Nominal value jump up/down (page 70)*
	Nominal value ramp up → *Nominal value ramp up/down (page 72)*
	Nominal value ramp down → *Nominal value ramp up/down (page 72)*
 	E-functions → *E-function (page 73)*

9.2.2 Functions for influencing program execution

Program block	Explanation
	Loop → *Loop (page 74)*
	Conditional program jump → *Conditional program jump (page 74)*
	Program call for a different test program → *Call for a different test program (sub-program) (page 75)*

1) Option

Program block	Explanation
	Program stop for a different test program which is running → *Program stop for a different test program (sub-program) (page 75)*
	Digital function: digital channel ON → *Digital channel ON/OFF (page 76)*
	Digital function: digital channel OFF → *Digital channel ON/OFF (page 76)*
	Eraser symbol for deleting programming symbols → *Eraser function (page 76)*
	Lockout function to maintain current selection → *Lockout function (page 76)*

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 programming symbol set, the menu window for programming it appears automatically.

9.2.3 Configuring a profile

Select profile

You can select the profiles displayed and define the appropriate start values via the context menu of the Start symbol.

Description → *Select Profile (page 77)*

Profile Setup

Via the context menu or by double-clicking on the Start symbol, you can display the menu → *Profile Setup (page 67)* to enter the appropriate start values.

1) Option

Start value

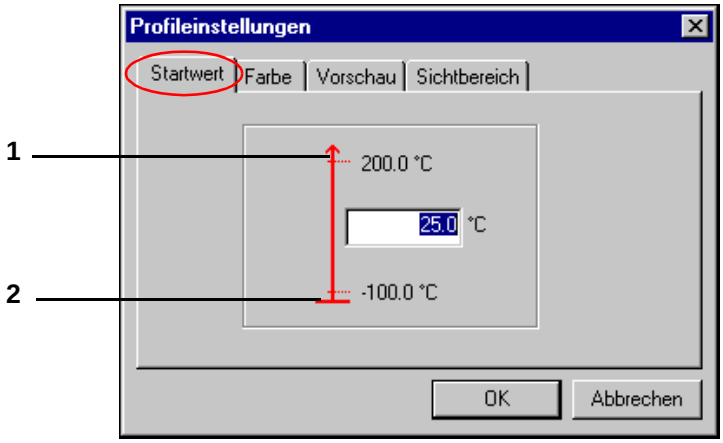


Fig. 9-2: Start value

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 appopriate amount of time to set this value. You must take this time into account during programming.

NOTE

The start value for all control variables, control values and digital channels is preset with the minimum value (within the range of the chamber limit) by default. If a particular start value is to apply to every program to be created in the same system, then it has to be set in Select profile as the standard (description under item D).

Colour settings

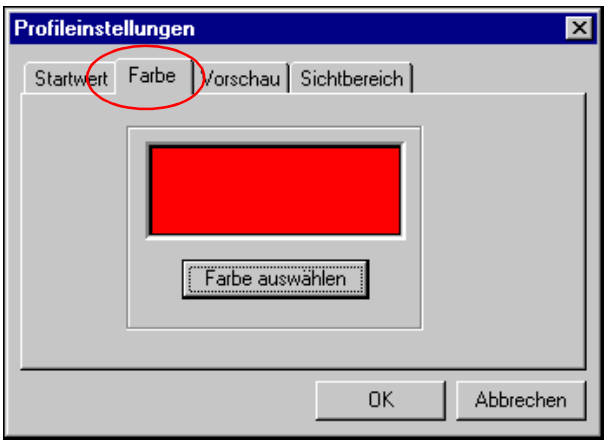


Fig. 9-3: Colour

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 as the default settings → *Select Profile (page 77)*.

1) Option

9.2.4 Test

Preview

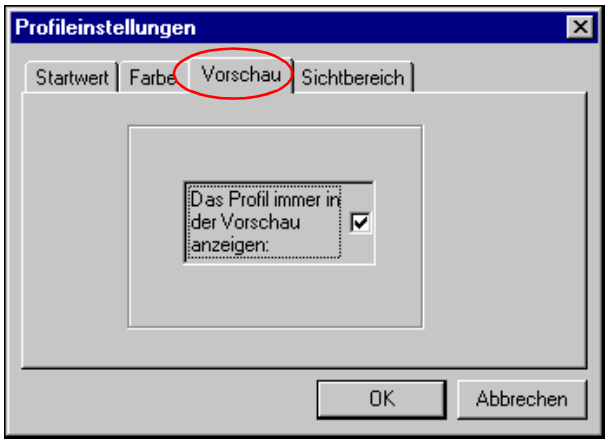


Fig. 9-4: Preview

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, have just the minimum number of profiles required for programming displayed.

Display range

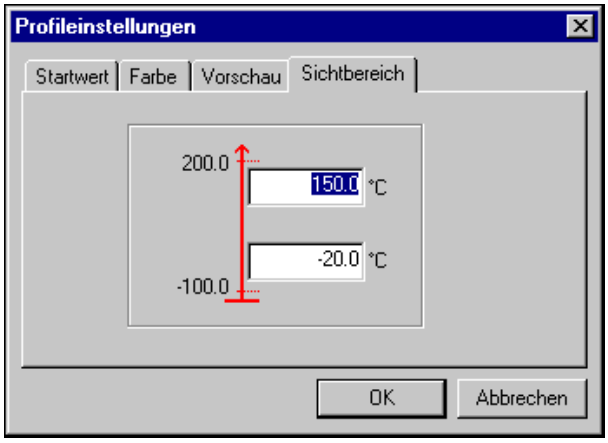


Abb. 9-5: Display range

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

1) Option

9.2.1 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.

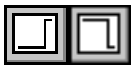
Selection block

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.



Nominal value jump up/down

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

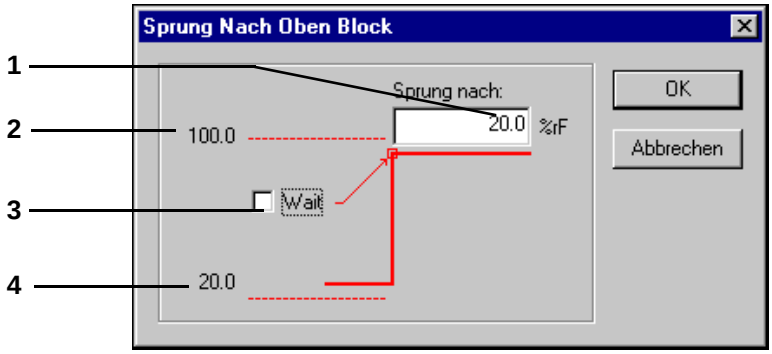


Fig. 9-6: Nominal value jump

1 Input jump end value (nominal value)

2 Maximum jump end value (channel limit)

3 Activation of the Wait function at the jump destination

4 Current nominal value before the jump

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

After the Wait function has been activated, an input dialog opens for these values.

The example given is for a jump up. If there is a jump down, the current value is at Item 2 and the value of the chamber lower limit is at Item 4.

1) Option

Wait function

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

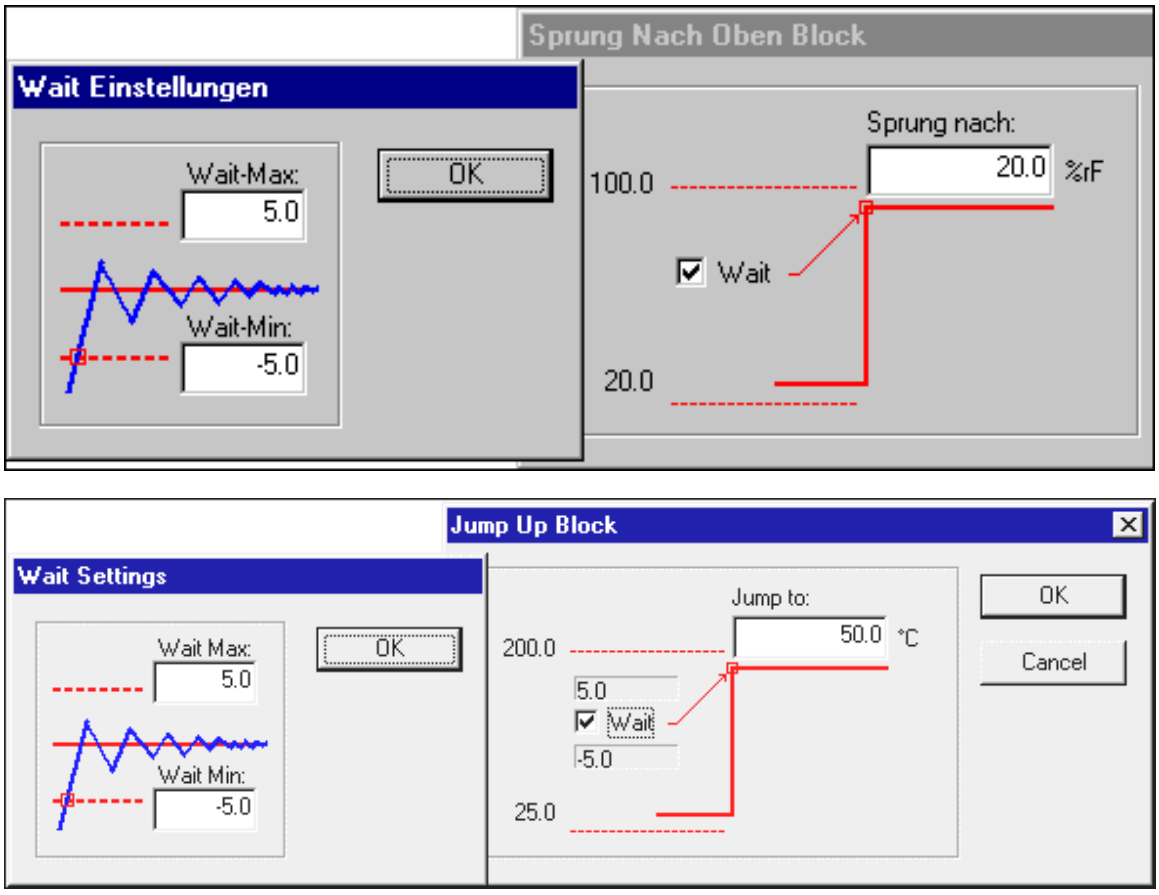


Fig. 9-7: Wait function

Programming a nominal value jump down is carried out in a similar manner.

1) Option

Nominal value ramp up/down

A ramp can be used to program a nominal value change running up or down. This function is available for control variables and setpoints.

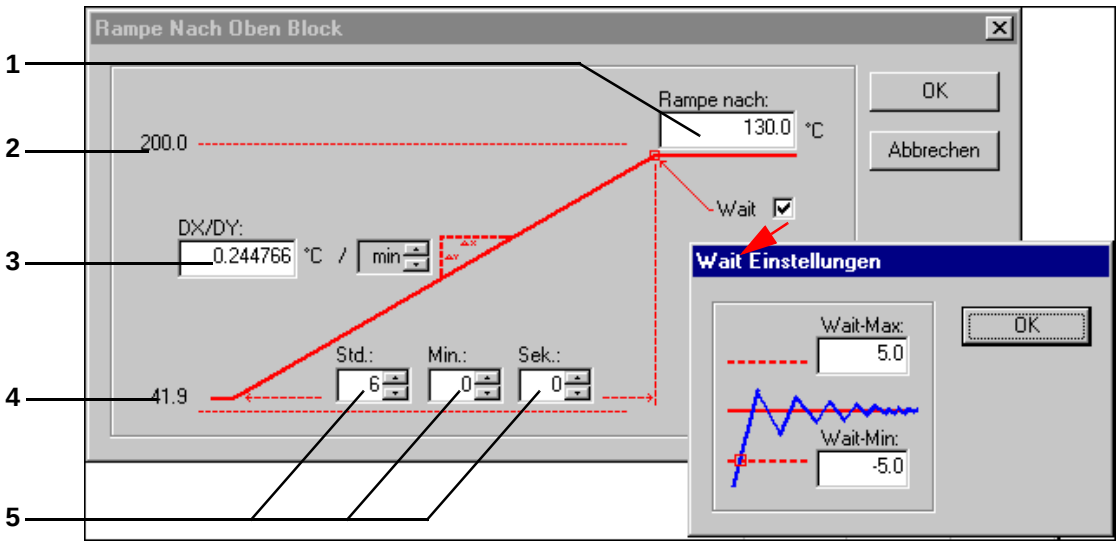


Fig. 9-8: Nominal value ramp

1 Enter the ramp end value (nominal value).

2 Maximum ramp end value (chamber limit)

3 Ramp modification rate

4 Current nominal value before the ramp

5 Ramp time value

The example given is for a ramp up. If the ramp is down, the current value is at Item 2 *(page 72)* and the value of the lower chamber limit is at Item 4 *(page 72)*.

1) Option

E-function

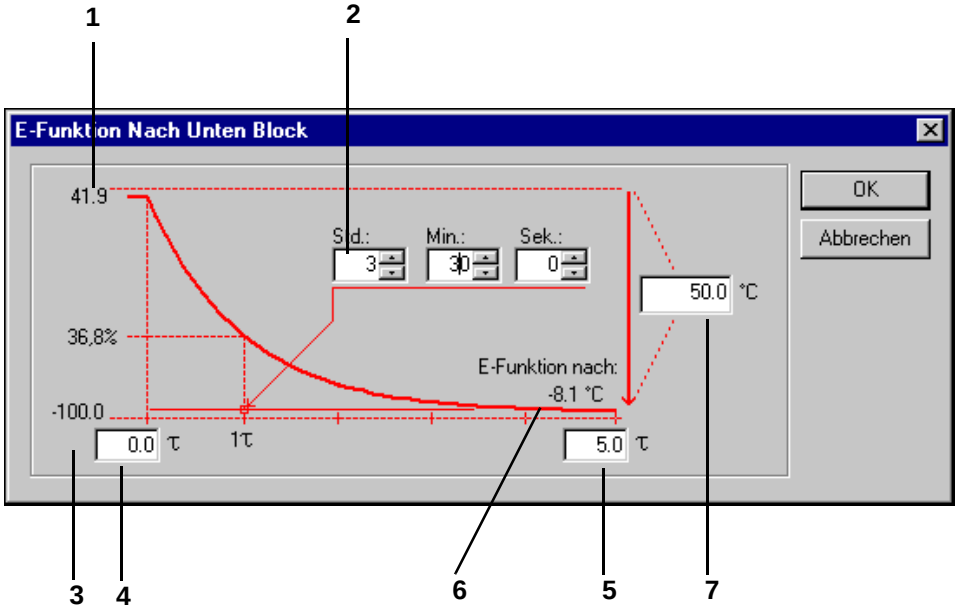


Fig. 9-9: E-function

1 Current value

2 Time value for 1 τ

3 Lower chamber limit

4 τ range being processed, 1 τ to 5 τ

5 τ range being processed, 1 τ to 5 τ

6 E-function end 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 Item 3 *(page 73)* and the chamber upper limit value is at Item 1 *(page 73)*.

1) Option

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 need to be defined in the active loop block which include the section to be repeated. A programming symbol also has to be included in the program section to be repeated; this symbol must explicitly state a time. Jumps and ramps, for example, are processed in time »X« and therefore are 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 (Mincon / Simcon controller).

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.

1) Option

Call for a different test program (sub-program)

This function is available only with Flash version 00.17 or higher (Mincon / Simcon controller).

This function permits another test program to be called and started as a sub-program while the test program is running. As a precondition this test program was first transferred to a program slot in the chamber controller.

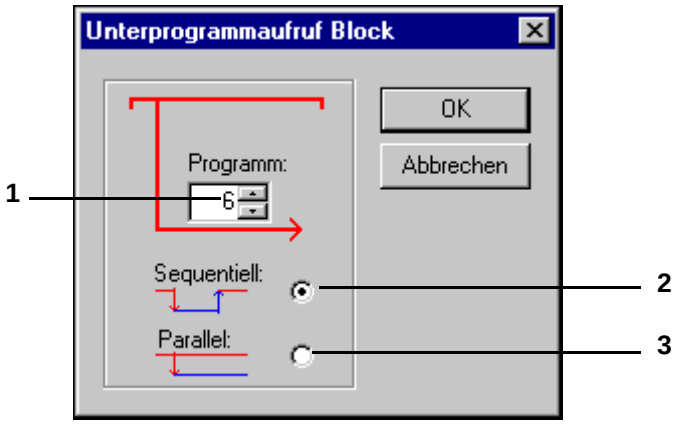


Fig. 9-10: Example: Sub-program

1 Program No. of sub-program

2 If the sub-program is called in sequence, the current test program is exited, the sub-program is processed and after which the test program that made the call continues to be processed.

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 69)*

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 enables a sub-program called in parallel to be stopped.

1) Option

Digital channel ON/OFF

This function is used to switch a digital channel on or off.

Eraser function

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

Select the eraser symbol and double-click on the block that 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 programming symbol several times in a row, select the lockout function. This remains active until it is selected again.

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

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

9.2.2 The menu function »File«

Opening

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

1) Option

9.2.3 The menu function »Edit«

Select Profile

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

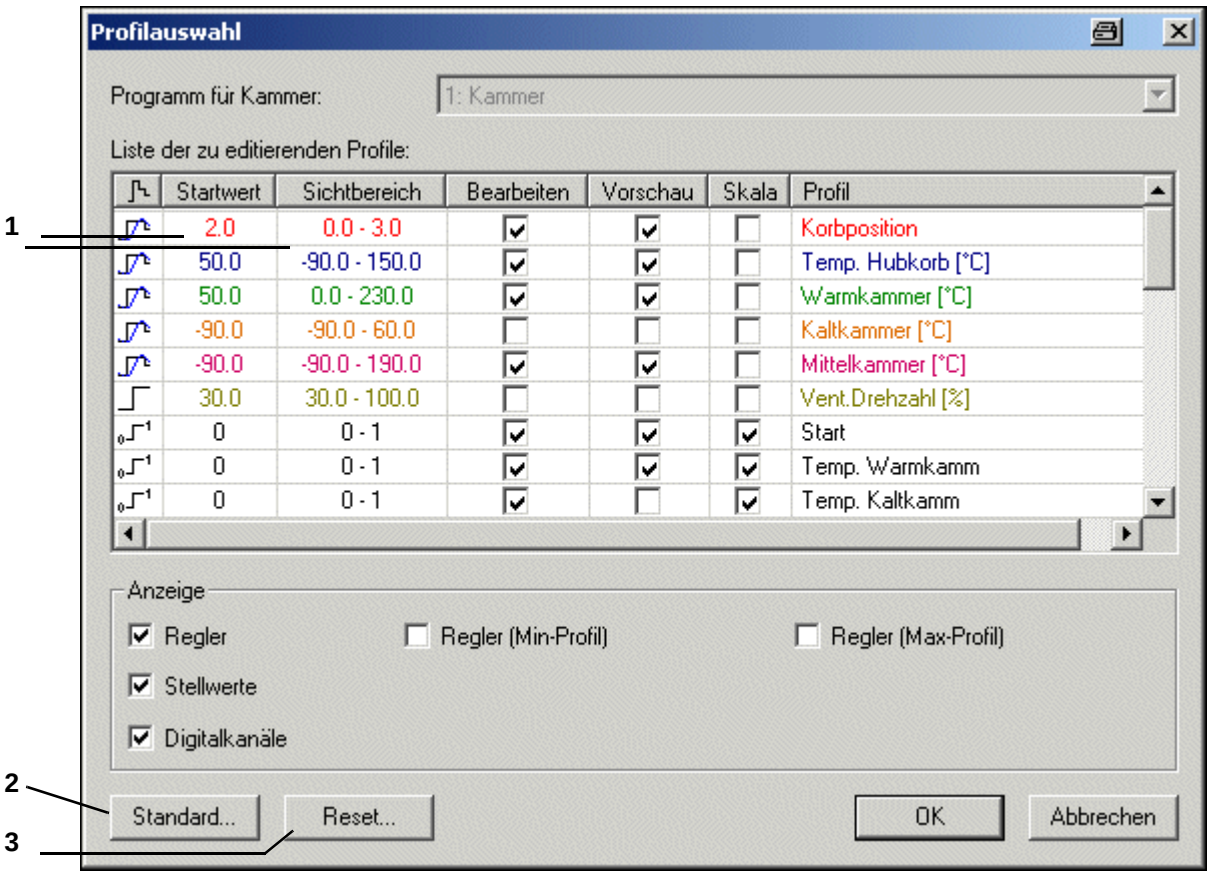


Fig. 9-11: Select Profile

1 Double-click *Profile settings*
This setting is only valid for this test program.

2 The settings are specified for each new test program.

3 All settings are reset

1) Option

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 corresponding destination profile must be side-by-side in the same row.
- Place the mouse pointer in the Destination chamber column in the row with the control variables, digital channels or setpoints that are to be 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 unit and will not be taken into account by the chamber controller!

NOTE

Inactive values in Simpac controllers: When changing from climatic to temperature mode the value for the humidity has to be manually set to zero % because otherwise the previous humidity value is retained.

1) Option

Example:

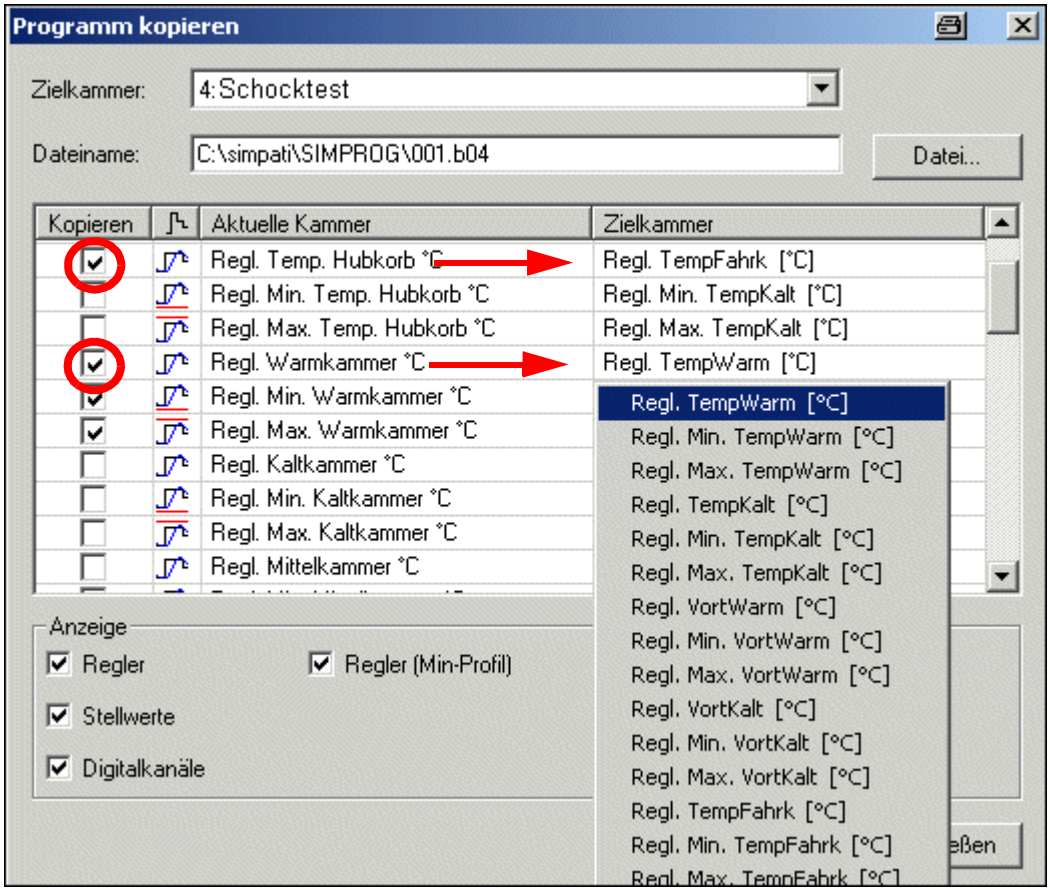


Fig. 9-12: Copying program

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 nominal value, e.g. IEC 68230 cool-down phase.

Copying preview

The preview is saved as a bitmap on the clipboard.

Synchronising

After pasting a loop or a jump into a profile (reference profile), the loop or jump needs to be incorporated in all the other profiles as well. You can do this by pasting the loop/jump into the rest of the profiles.

The → *Synchronising (page 79)* function adapts all profiles to the loop/jump settings of the reference profile according to the default settings in the menu »Loops and Jumps« if this is not already activated and synchronisation was carried out automatically.

1) Option

Cutting / Copying / Pasting

Programming blocks can be moved, copied, and pasted into any profile. The settings for each programming block are transferred in the process. When transferring to another profile, the settings may 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.

9.2.4 The menu function »View«

Symbol bar	File	Shows/hides the bar with the function symbols.
	Program	Shows/hides the bar with the programming symbols.
Status bar		Shows/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.

9.2.5 The menu function »Extras«

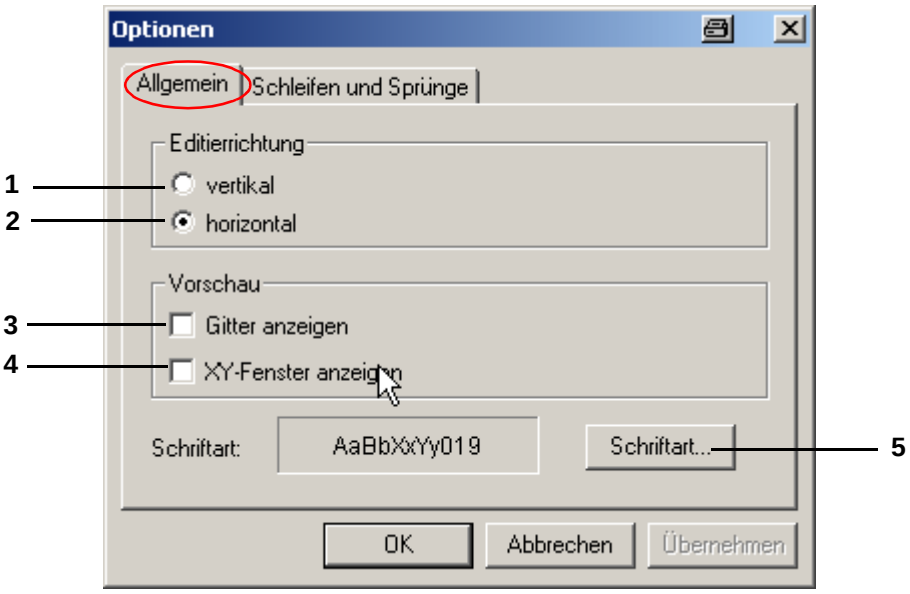


Fig. 9-13: Extras

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

1) Option

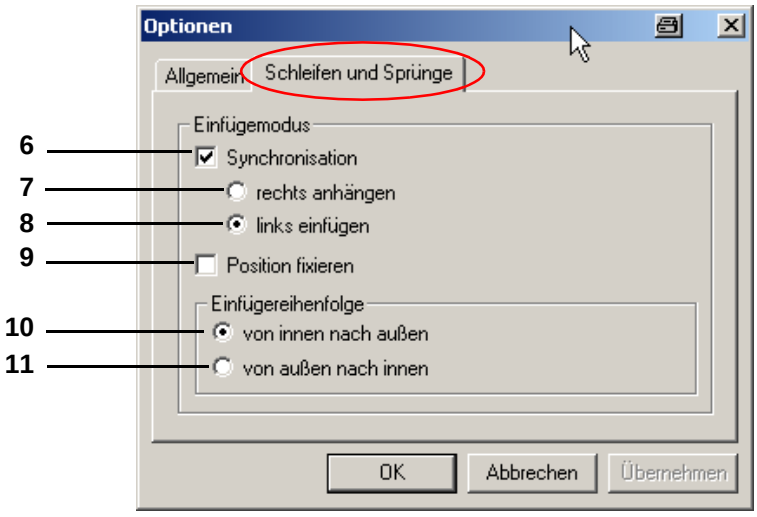


Fig. 9-14: Loops and jumps

6 Synchronising

NOTE

If the synchronisation function is activated, the remaining profiles are automatically adapted after placing a loop/jump in a profile.
We recommend that the status of the synchronisation function should not be switched between "active" and "inactive" during programming.

When pasting a loop/jump into the rest of the profiles, all the programming blocks including time allowances are incorporated. Here you have to define whether the loop start should be pasted to the left or to the 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 that do not contain any programming blocks with time allowances, the time blocks are pasted according to the time sequence of the reference profile.

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 that goes beyond the original length is moved outside the loop. If this is not desired, deactivate this function and/or reset the loop.

1) Option

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 pasting of a loop/jump into an existing loop/jump is not possible when 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 when this function is active.

9.2.6 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. 5-1: SIMPATI* Main menu (page 25)* Item 12 (»graphical«)

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

1 New → *Fig. 9-16: New profile (page 84)*

2 Opening

Open a test program imported from the symbolic editor and check the profile sequence in the graphic editor. The functions of the graphical and symbolic editors, for example, do not entirely coincide; the import may be lossy as a result.

3 Preview

Graphic program preview

1) Option

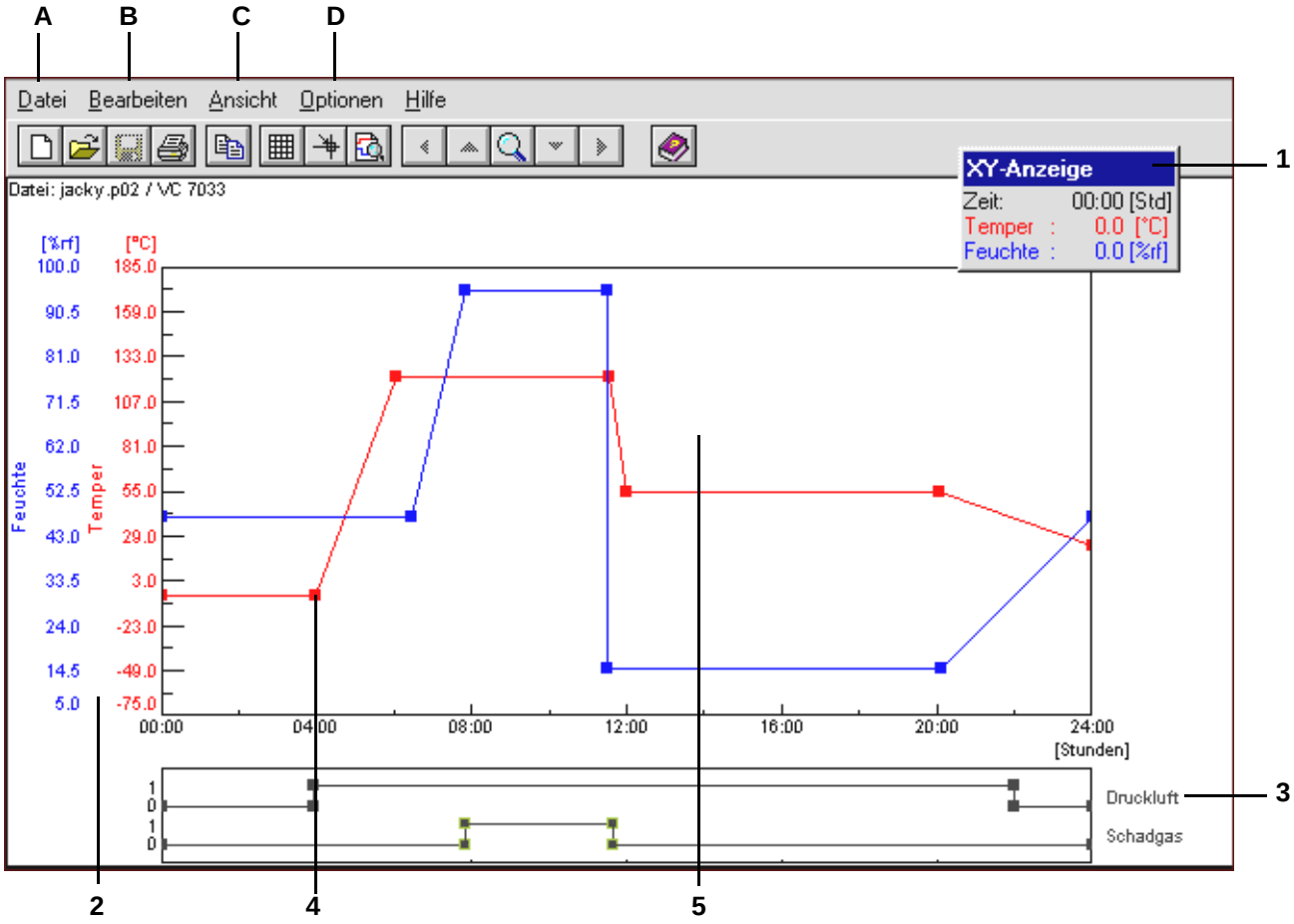


Abb. 9-15: Program preview

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.

1) Option

9.3.1 Menu point »File«

New

This function is used to create a new test program.

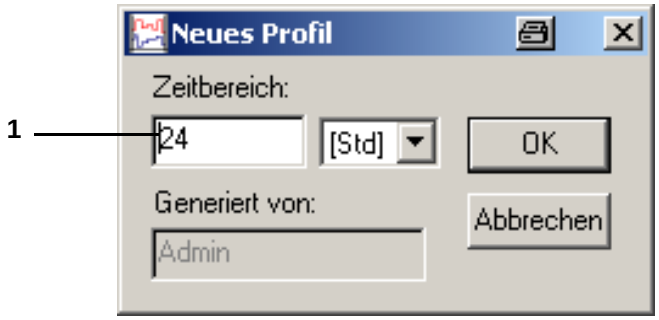


Fig. 9-16: New profile

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

Opening

A menu window for opening a test program appears.

Save

File name

→ *Appendix: Glossary and tips*, → *Test program names / Program numbers (page 248)*

Save As

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

Deleting

This function is used to delete test programs.

1) Option

Copying program

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

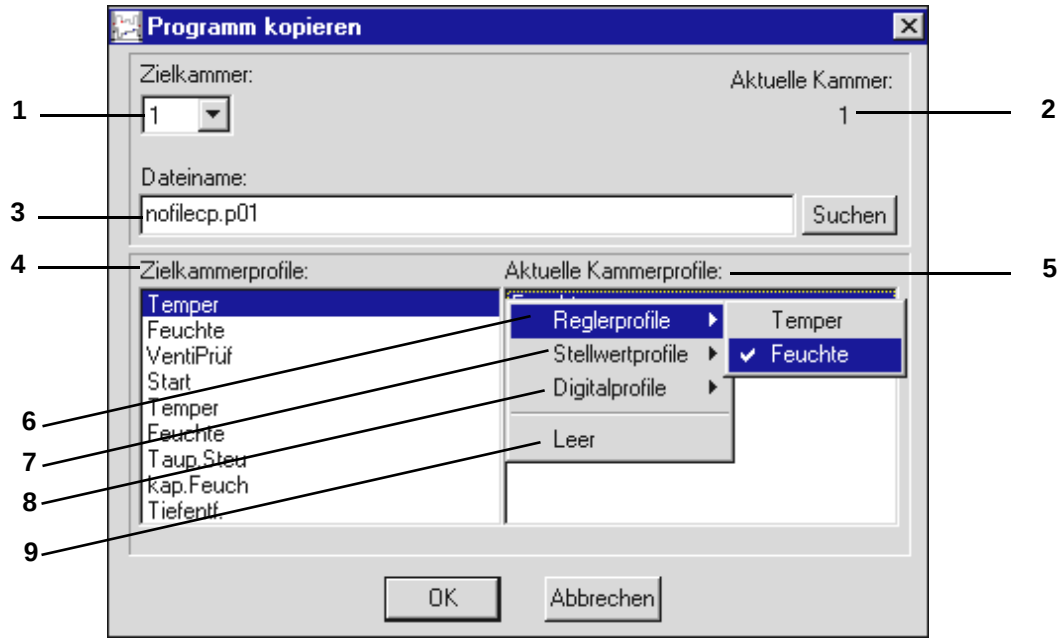


Fig. 9-17: Copying test programs

1 Available chambers, select number of the destination chamber

2 Number of the current chamber whose test program is to be copied

3 Upon selecting the destination chamber the directory for storage is specified automatically. 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 (Item 1). These channels need to be assigned to the profiles.

5 Profiles of the current chamber (Item 2)

6 Control variables of the current chamber

7 Control variables of current chamber

8 Digital channels of current chamber

9 Empty entry

Assigning profiles:

- Select the destination chamber channel.
- Double-click on the black bar in the list box Item 5
- 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 adapted to the limits of the destination chamber.

9.3.2 The menu function »Edit«

Copying

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

9.3.3 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 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.

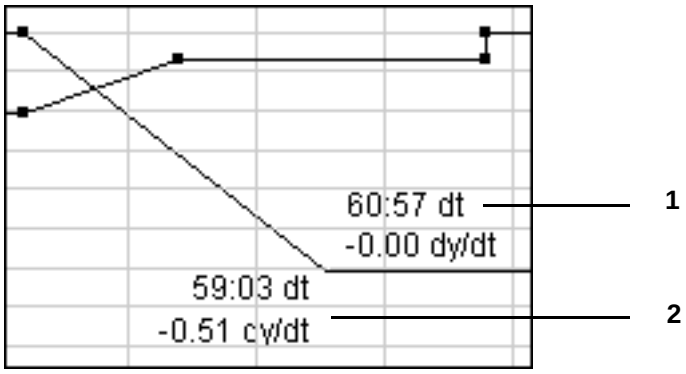


Fig. 9-18: Data point calculation

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

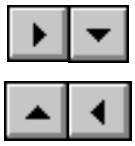
Crosshair

A crosshair is activated. When the function → *Data point calculation (page 86)* is active, the crosshair display can be suppressed by pressing the left mouse button.

1) Option

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.

Fig. 9-19: Enlarging time range

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.

Pasting/deleting time segments within the test profile, context menu command »Revise time«.

Preview

The curve shown corresponds to the actual test run.

List

Test program display in program list format. The program list can be revised 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.

9.3.4 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 92)*.

Profiles

Analog channels (parameters)

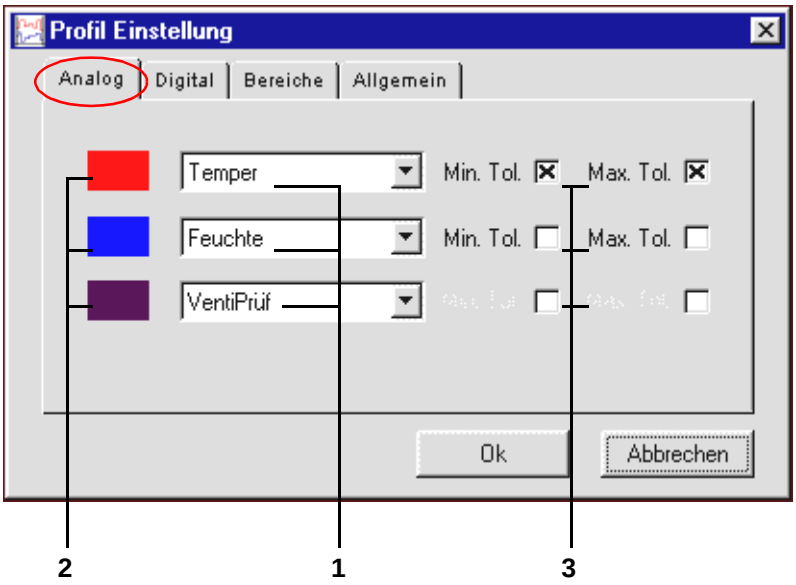


Fig. 9-20: Analog channels

1 Select the analog channels that are to be displayed (control variables)

2 Colour allocation to the analog channel activated (control variable)

3 Select the tolerance band display.

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

Input of tolerance ranges → context menu command → *Tolerance (page 93)*.

1) Option

Digital channels

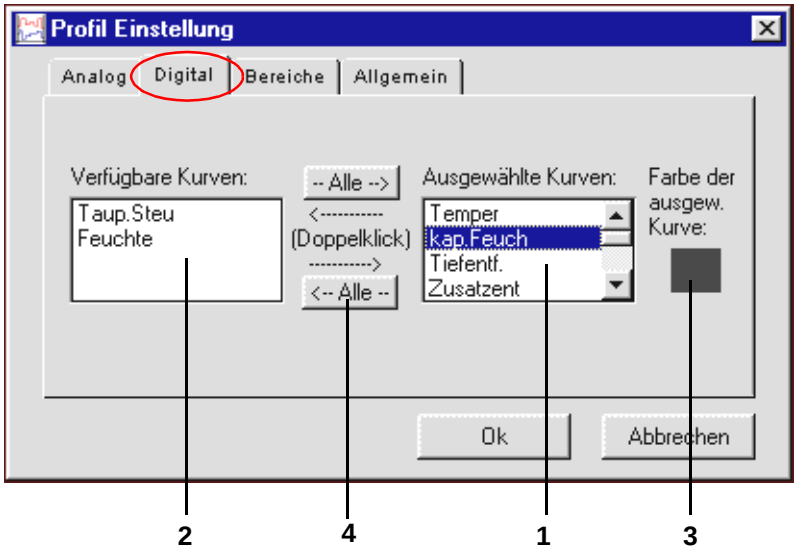


Fig. 9-21: Digital channels

1 Select digital channels to be displayed

2 List box of available digital channels

3 Colour allocation for the digital channel activated

4 Move all digital channels

The digital channel display can be activated by double-clicking on the corresponding digital channel in the list box (Item 2). The digital channel appears in the list box (Item 1).

The colour of an digital channel is allocated by clicking on the colour field.

1) Option

Working range

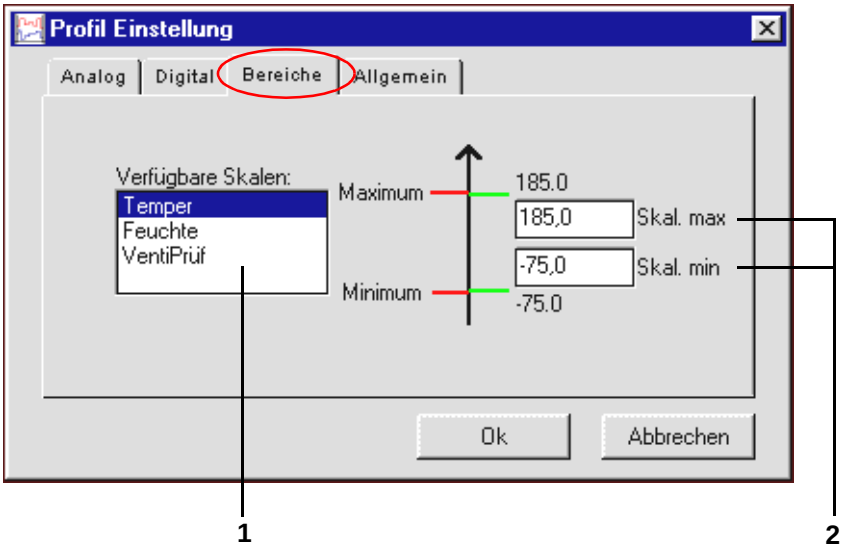


Fig. 9-22: Working range

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

This function is used to set the scale dimensions. Depending on the range setting, existing graphs may be outside the working range specified and therefore cannot be viewed.

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:*

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

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

1) Option

General profile settings

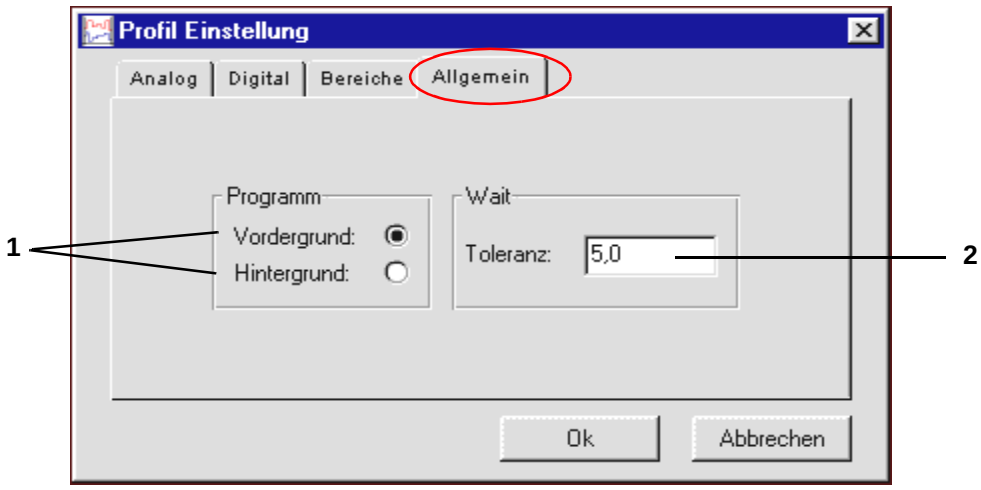


Fig. 9-23: Profile setting

1 Foreground/background program

→ Context menu command <emphasis>»Wait« (page 28) and <emphasis>»Call Program« (page 28).

2 Wait function

When using the Wait function, the test program (and therefore the program time) continues running only if the difference between the nominal and 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.

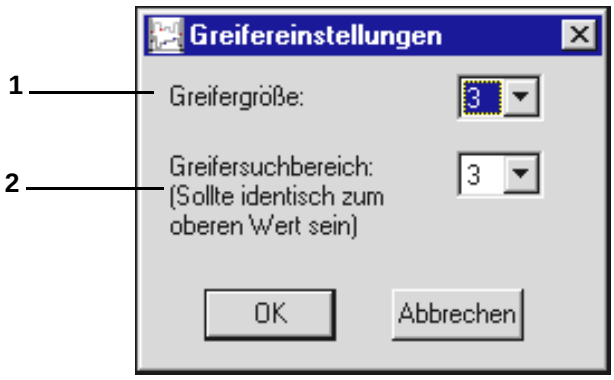


Fig. 9-24: Grabber setting

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).

1) Option

File comment

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

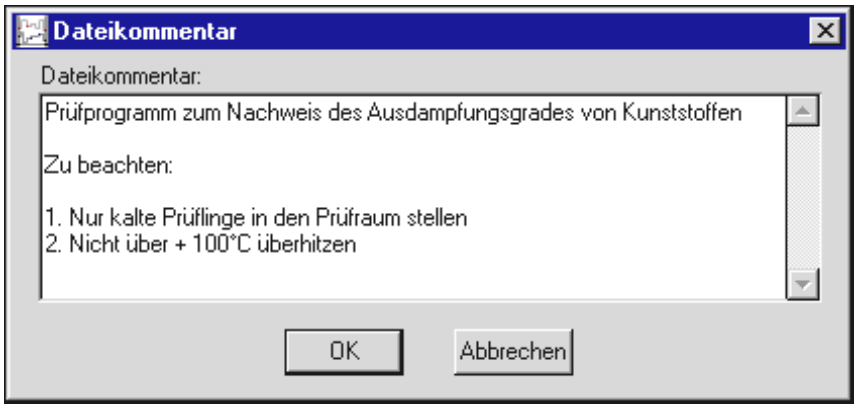


Fig. 9-25: Comment

Comment concerning any profile data point → context menu command <emphasis>»Comment« (page 27).

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.

Context menu commands

Value

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

Fig. 9-26: Nominal value

1 Position of the profile data point on the scale of the analog channels (control variables)

2 Time difference from previous profile data point

1) Option

Tolerance

Input of tolerance band values

The tolerance bands display must be activated → *Tolerance (page 93)*.

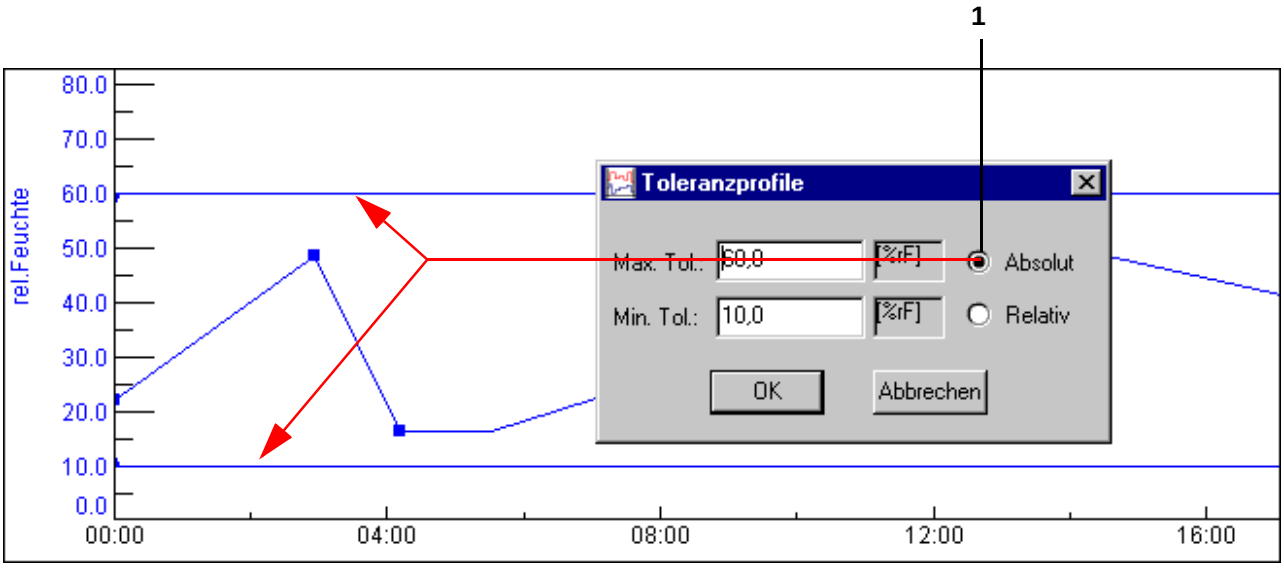


Fig. 9-27: Absolute tolerance band

The tolerance band remains steady at the nominal value specified.

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

The tolerance band remains at the distance from the nominal value specified.

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

1) Option

Creating a test program with the graphical editor

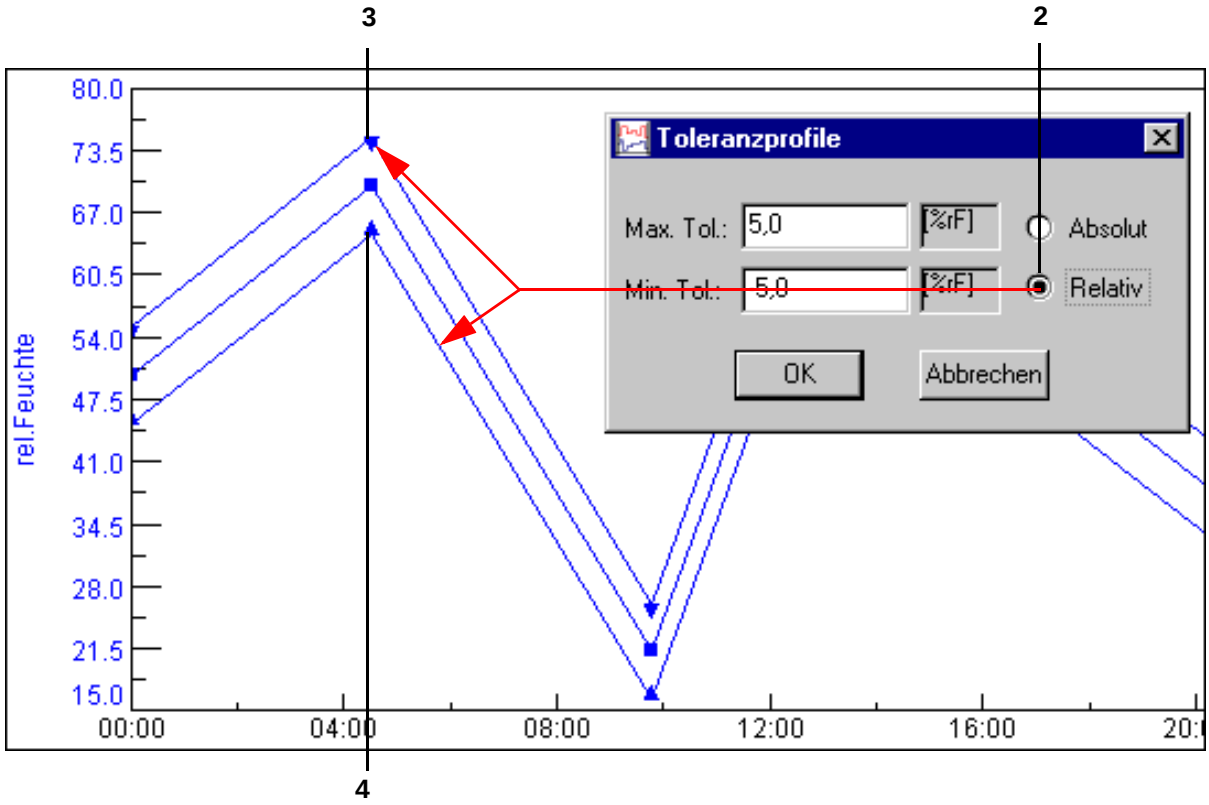
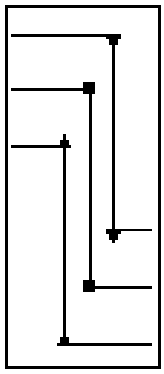


Fig. 9-28: Relative tolerance band

The upper (Item 3) and lower (Item 4) tolerance bands have to be distinguished by way of variable 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.

1) Option

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.

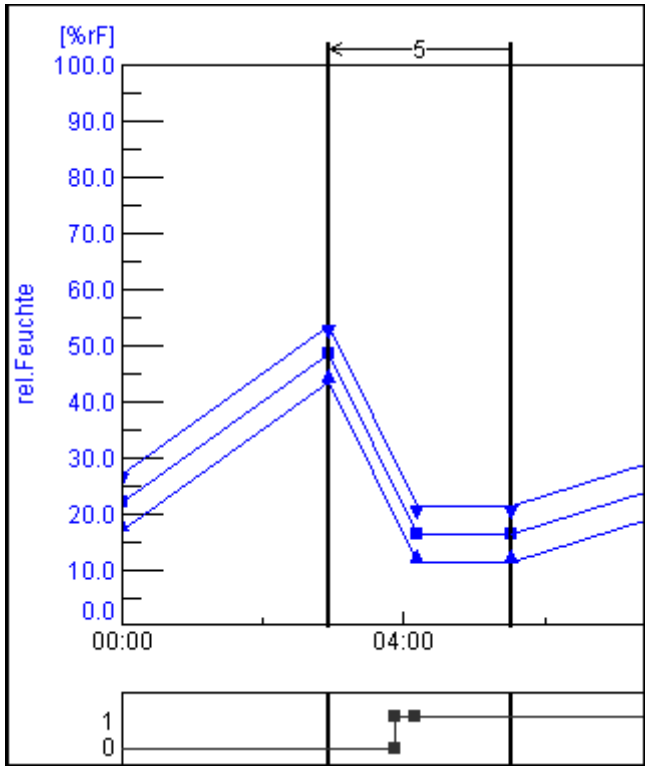


Fig. 9-29: Loops

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 want to import the test program to the symbolic editor, please 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 might be shifted in front of the loop end of the first loop.

Jump

A jump to the destination profile data point specified is effected 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.

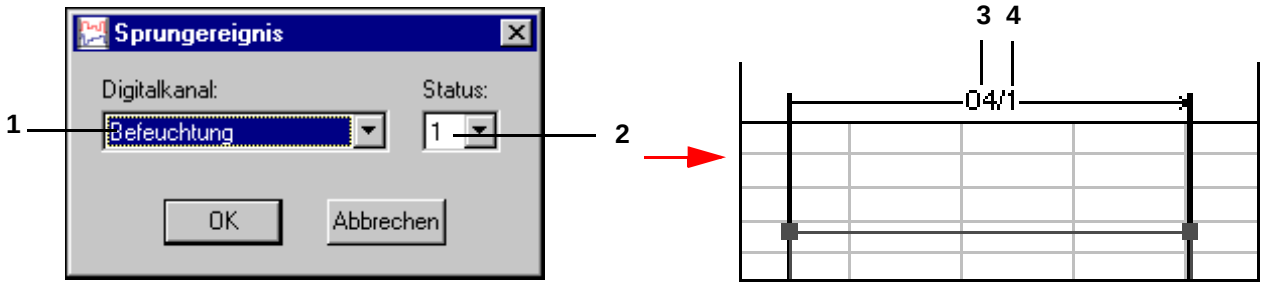


Fig. 9-30: Jump

1 List box of all digital channels

2 Status of the channel selected, 0: channel inactive, 1: channel active

3 Display of the channel number (Item 1)

4 Status display (Item 2)

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

Wait

If this function is active, the test program will continue to run only if the actual value is within the tolerance specified. The tolerance is set individually for each test program

→ *Tolerance (page 93)*.

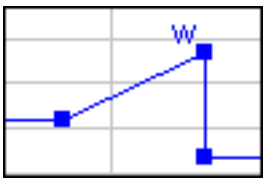


Fig. 9-31: Active Wait function

1) Option

Call Program

Another test program (foreground or background program) is to be started at this point.

Defining a test program as a foreground/background program

→ *General profile settings (page 91)*

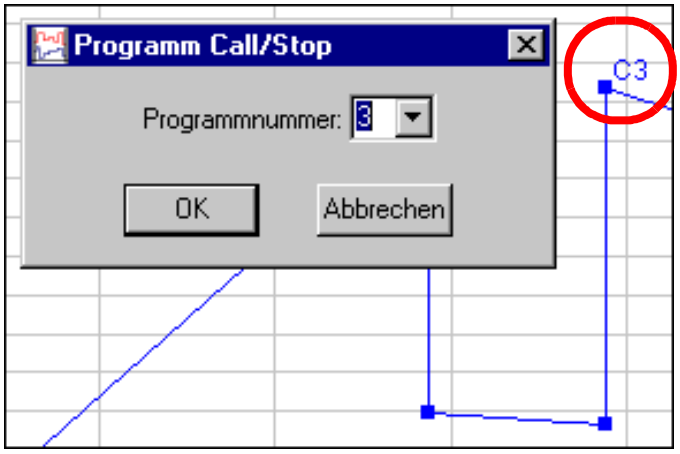


Fig. 9-32: Profile data point

The profile data point is indicated by »C« and the test program number. This function is deactivated by clicking again on the function in the context menu.

Stop program

A test program is to be stopped at this point. The profile data point is indicated by »S« and the test program number. This function is deactivated by clicking again on the function in the context menu.

Edit time

This function is used to extend (Item 1) or shorten (Item 2) the length of the test program.

Fig. 9-33:

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

1) Option

9.4 Creating a test program with the tabular editor

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 12

The tabular editor is immediately usable for chambers with Simpac controller from software version 2.6. Test programs are converted to symbolic editor format prior to processing.
As a result, virtually any chamber can be operated using this format.

NOTE
If you want to use the tabular editor for chambers involving other controllers, then specific configurations need to be made for this purpose. Please contact our service center to this effect.

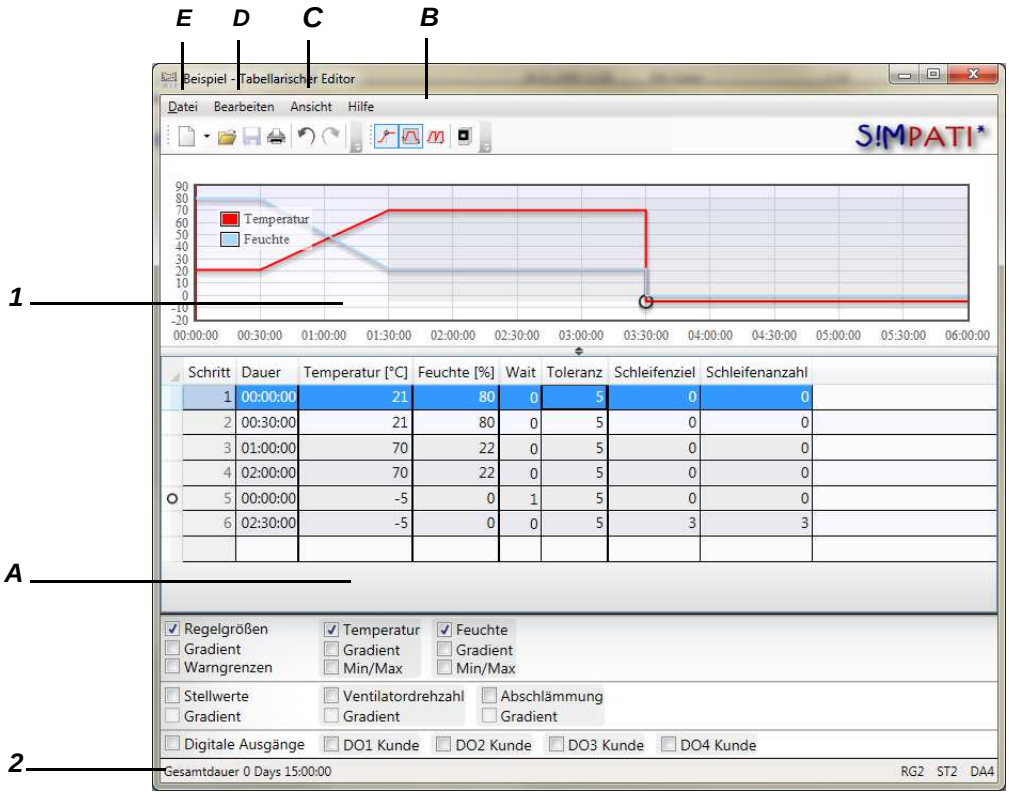


Fig. 9-34: Overview

1 Preview

2 Status bar

A: Test program table

B: Function extension

C: Menu function View

D: Menu function Edit

E: Menu function File

1) Option

9.4.1 Test program table

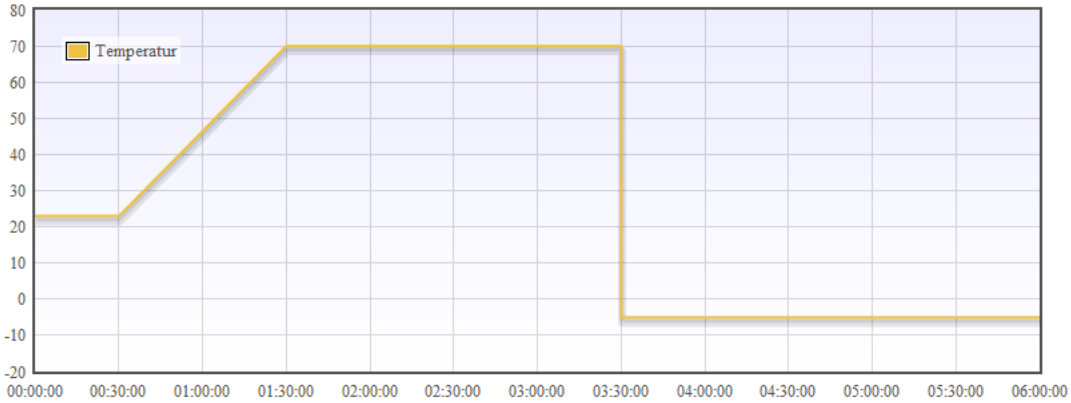
The test program consists of a table. Here each row is a test program segment and each column represents a process variable. To program, values for the particular process variable have to be entered in the table.

Setting the duration, a Wait function or a loop function in the first segment is not allowed.
This can be done in the proximate segments.
→ *Function extensions (page 100)*

NOTE

A segment's duration is expressed in hours, minutes, seconds format separated by a colon (hh:mm:ss). When entering the duration this format does not have to be strictly adhered to. If just one colon is entered, hours and minutes are are assumed as the input (hh:mm). If no colon is entered, then the input is expressed as minutes.

Example



Schritt	Dauer	Temperatur [°C]
1	00:00:00	23
2	00:30:00	23
3	01:00:00	70
4	02:00:00	70
5	00:00:00	-5
6	02:30:00	-5

Fig. 9-35: Sample program

Appending a new segment

To append a new segment, a value has to be entered in the blank row at the end of the table.

1) Option

Attaching a new segment

To attach a new row, menu item Attach has to be selected via the context menu in the table. A new segment is thereupon added in front of the segment currently selected.

Copying segment(s)

Segments selected can be copied via the menu item of the table's context menu or via the keyboard shortcut → »Strg+C«.

Pasting segment(s)

Segments copied can be pasted via the menu item of the table's context menu or via the keyboard shortcut → »Strg+V«.

NOTE

The table's context menu is opened with a right-click on the table.

Function extensions

Wait function

The Wait function causes the program runtime to be paused until the actual value is located within the tolerance defined. Two columns are displayed by activating the button.

The »Wait« column indicates which control variable is to be expected in the segment. The control variable index has to be referenced here.

The »Tolerance« column indicates how big the maximum deviation may be in order for the program runtime to be able to continue. The tolerance value in the control variable unit has to be checked here.

NOTE

Wait functions are displayed in the preview dealing with their control variables set by a loop, provided the control variables and waits are viewable. If a wait function is set in the segment, a loop is always displayed to the left of the row in the table.

Loop functions

The loop function is used to repeat a section of the test program several times. Two columns are displayed by activating the button.

The »Loop target« indicates the segment number from which the loop begins. This means the end of the loop is the segment in which the loop target is indicated. The loop target must be at least smaller by two than the segment number in which the loop is indicated.

The »Loop number« column indicates how often the section defined in the test program is repeated.

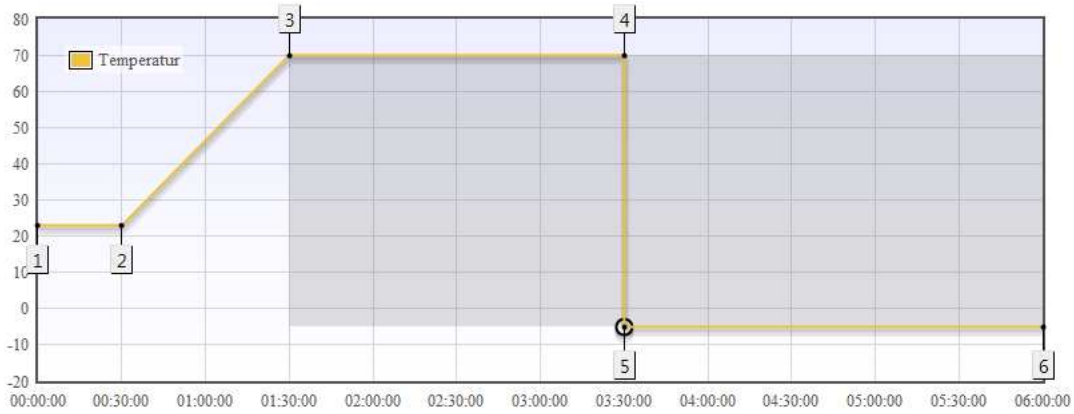
NOTE

The loop functions block is displayed in the preview as a shaded rectangle, provided loops are viewable. The rows in the table whose segments are associated with loop functions are always coloured. In case of nested loops, the inner loops are coloured darker than the outer ones.

Extended preview

By activating the extended preview, any loop programmed is expanded in the preview. As a result, the test program can be viewed in total duration.

Example:



Schritt	Dauer	Temperatur [°C]	Wait	Toleranz	Schleifenziel	Schleifenanzahl
1	00:00:00	23	0	5	0	0
2	00:30:00	23	0	5	0	0
3	01:00:00	70	0	5	0	0
4	02:00:00	70	0	5	0	0
5	00:00:00	-5	1	5	0	0
6	02:30:00	-5	0	5	3	3

Fig. 9-36: Extended view

1 Start value for the program sequence

2 No change in temperature, a constant is started using the duration set

3 Change in temperature with concurrent input of a duration. Ramp travel from the previous to the newly set temperature within the time set under duration.

4 see point 2.

5 Change in temperature with a duration of 0 and activation of a wait function. Jump from the previously set temperature to the newly set temperature. Thanks to the wait function, the continuation of the program run is stopped until the chamber's actual value has reached the new target value less the tolerance set.

6 Once the constant has been started, the program sequence returns via input of a loop number and a loop target to the program point entered. This is repeated as often as it has been input under loop number.

9.4.2 The menu function "View"

Preview

Showing/hiding the preview: Every piece of the current test program's process data shown for programming is displayed here.

Column selection

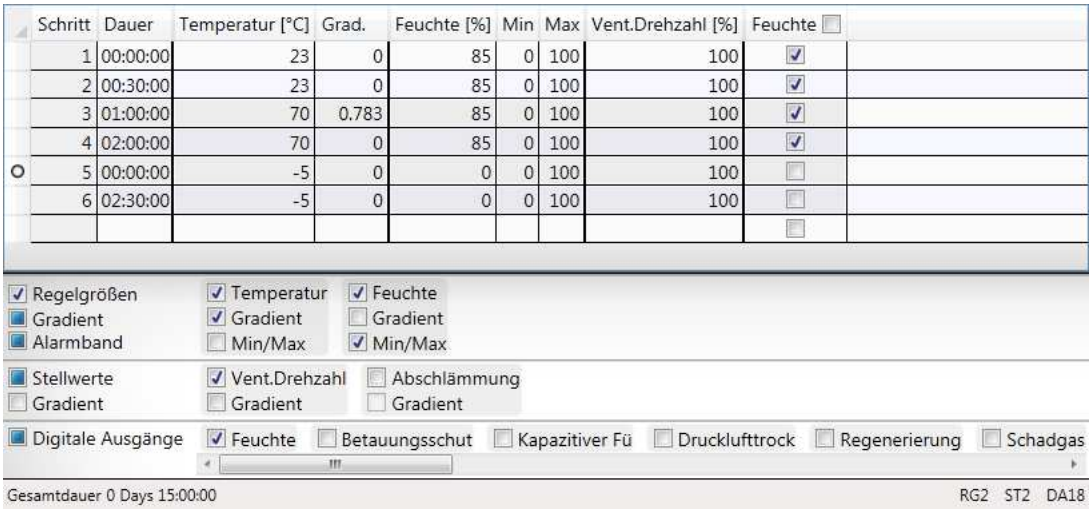


Fig. 9-37: Column selection

Showing/hiding the column selection. Here, process data in columnar form can be shown and hidden. In the case of control variables, the gradient and the warning limits can be shown and edited in addition to each control variable. The gradient is also available for any target value.

Status bar

Showing/hiding the status bar. The status bar indicates the total duration and displays a profile overview of the test program. The profile overview indicates the number of control variables, setpoints and digital outputs in short form.

9.4.3 The menu function "Edit"

Undo/Redo

Changes in the test program can be undone and redone too. This does not include changes in the configuration.

NOTE

All undo and redo steps are inoperative in respect of changes in the configuration.

Cutting / Copying / Pasting

Segments can be cut, copies and pasted into any other tabular test program.

1) Option

Program configuration

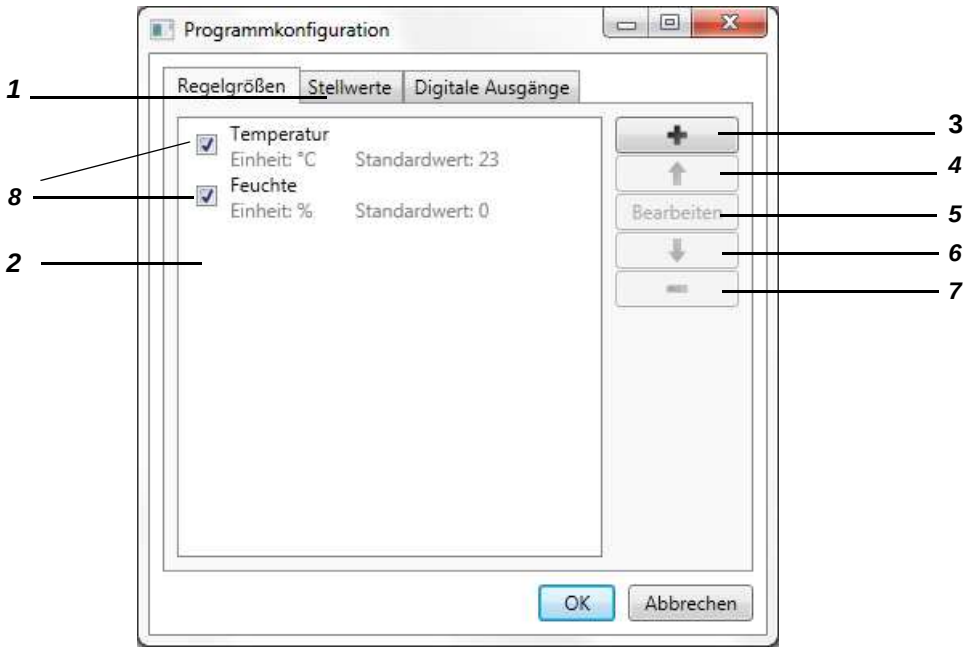


Fig. 9-38: Program configuration

1 Process data selection

2 Process data list

3 Add process variable

4 Move process variable up

5 Edit process variable

6 Move process variable down

7 Remove process variable

8 Activate/deactivate process variable

Only activated process variables are transferred on converting to the symbolic program format; all other process variables are constrained to standard values or the last value set (can be decided on export).

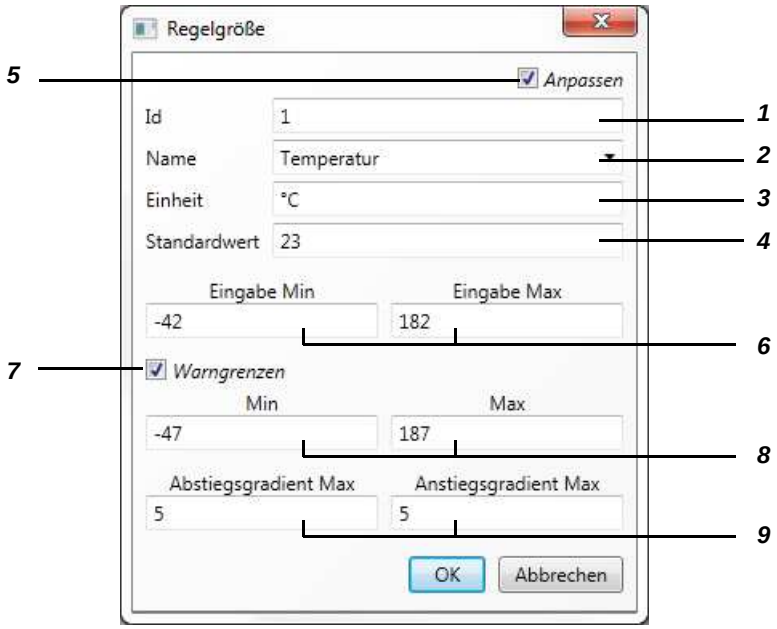


Fig. 9-39: Edit process variable

1 Identification number of the process variable

2 Name of the process variable

3 Unit of the process variable (only available for control variables and nominal values)

4 Standard value of the process variable

5 Enable manual adaptation of the identification number, name and unit

6 Input limit of the process variable

7 Enable programming of the warning limits (only available for control variables)

8 Warning limits of the control variable

9 Rates of change of the process variable per minute

1) Option

Settings

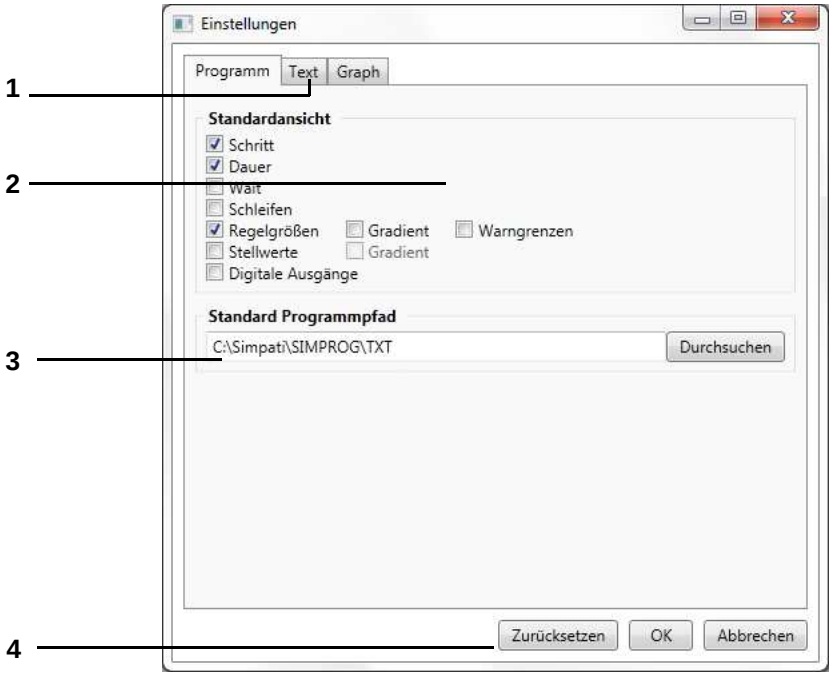


Fig. 9-40: Program settings

1 Setting context selection

2 Standard view for new and open test program

3 Standard path recommended for saving

4 Reset all settings

1) Option

Creating a test program with the tabular editor

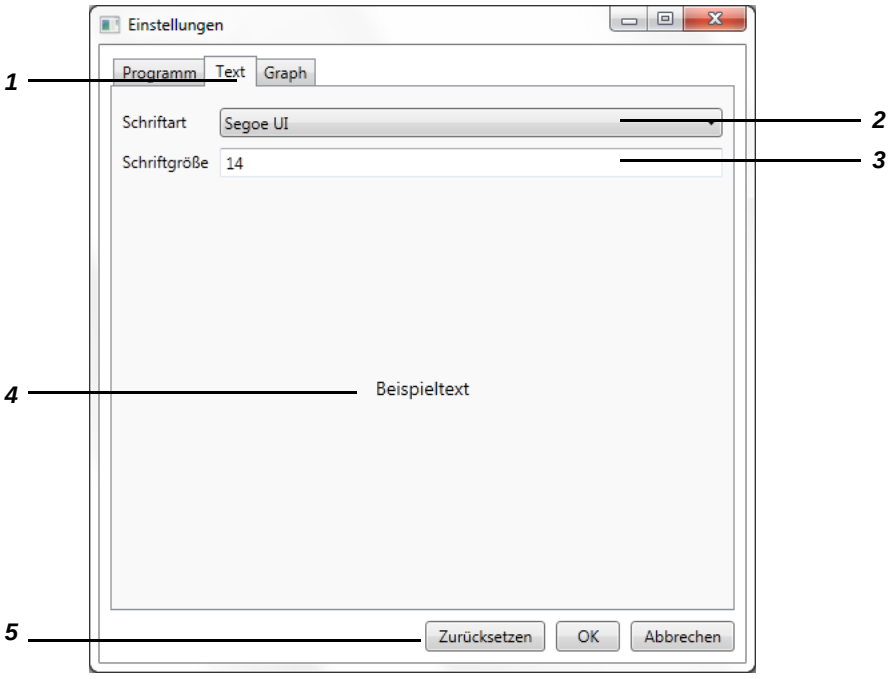


Fig. 9-41: Settings Text

1 Setting context selection

2 Font to be used in the editor

3 Font size to be used in the editor

4 Preview of the text settings

5 Reset all settings

1) Option

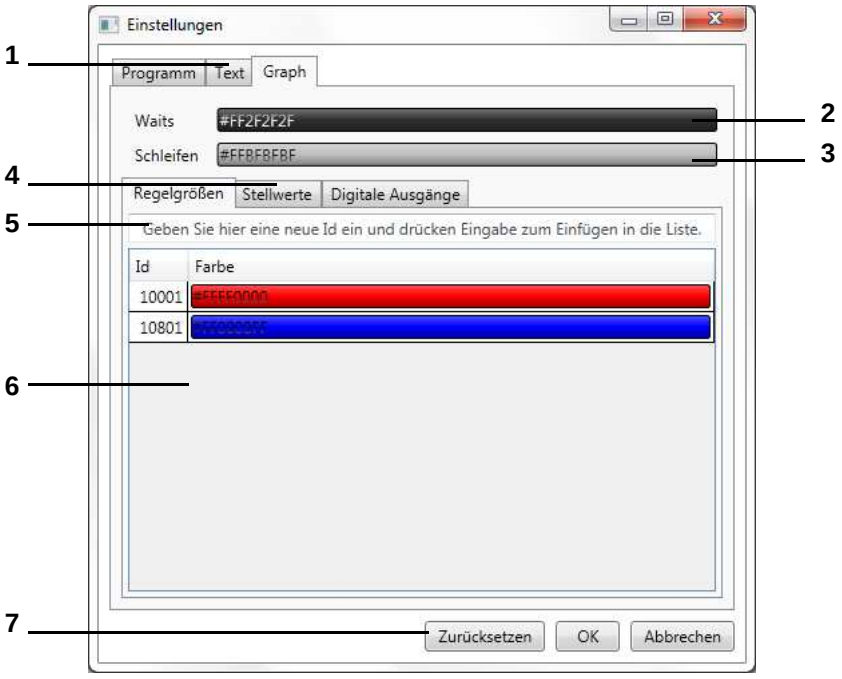


Fig. 9-42: Settings Graph

1 Setting context selection

2 Colour for waits in the test program (can be set by clicking)

3 Basic colour for loops in the test program (can be set by clicking)

4 Process data selection

5 Selection of a distinct process variable assignment for the colour assignment list

6 Colour assignment list (colours can be set by double-clicking)

7 Reset all settings

1) Option

9.4.4 The menu function "File"

New

On the basis of a selected chamber

A new test program is created on the basis of the chamber for which the tabular editor was opened.

On the basis of another chamber

A new test program is created on the basis of a chamber that was selected from a selection llist.

On the basis of a profile

A new test program is created on the basis of a profile (of a program configuration) that was read from a file.

On the basis of a user-defined chamber

A new test program is created on the basis of a program configuration that was defined by a user.
→ *See section D) Program configuration*

Opening

A test program created with the tabular editor can be opened here.

Save / Save As

These functions are used to save the test program with its own name or with a new test program name.

1) Option

Export

Template

The test program's profile (the program configuration) is saved in a file that can be used as a template for other programs.

Symbolic program

The test program for the destination chamber selected is converted to the symbolic program format with the assist of a selection menu.

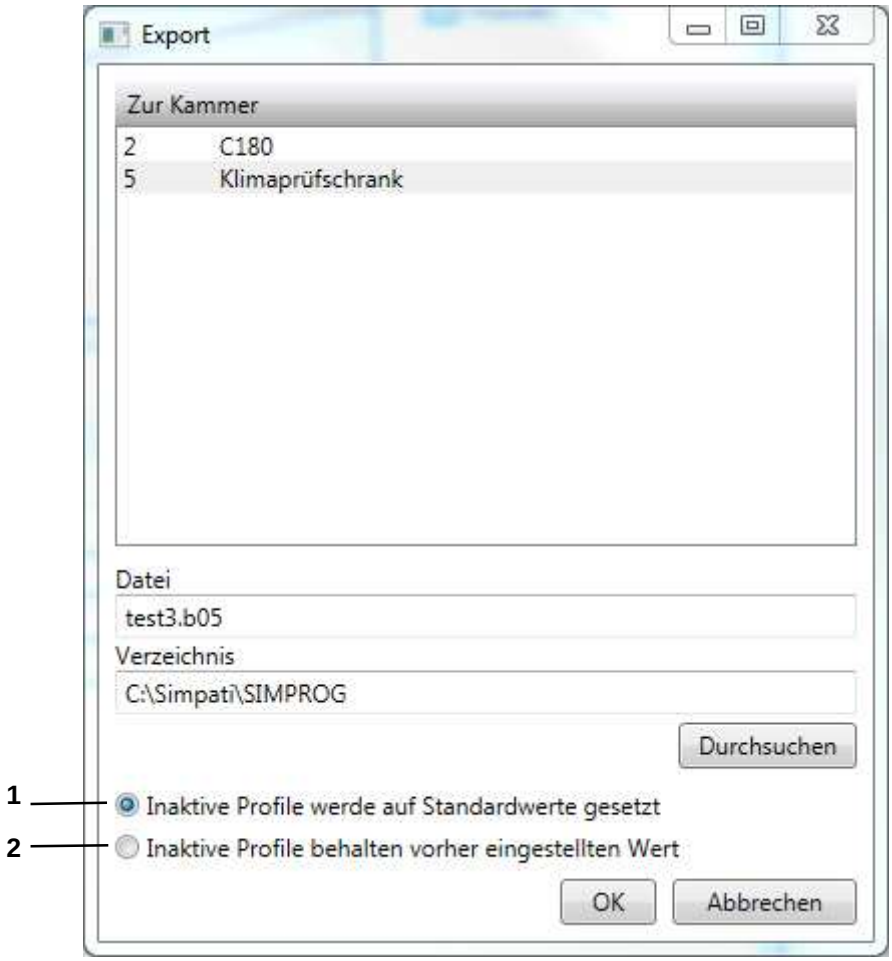


Fig. 9-43: Test program - Export

1 Inactive profiles are switched to their standard values and displayed in the symbolic editor.

2 Inactive profiles are switched to the previous value set and not displayed in the symbolic editor.

Printing

The full test program is printed from the preview, provided displayed, in list form.

9.5 Creating a test program for a shock chamber

You can access the menu via the context menu of the chamber.
→ *5 The main menu and the toolbox (page 25)* (»ShockTest Editor«)

9.5.1 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.

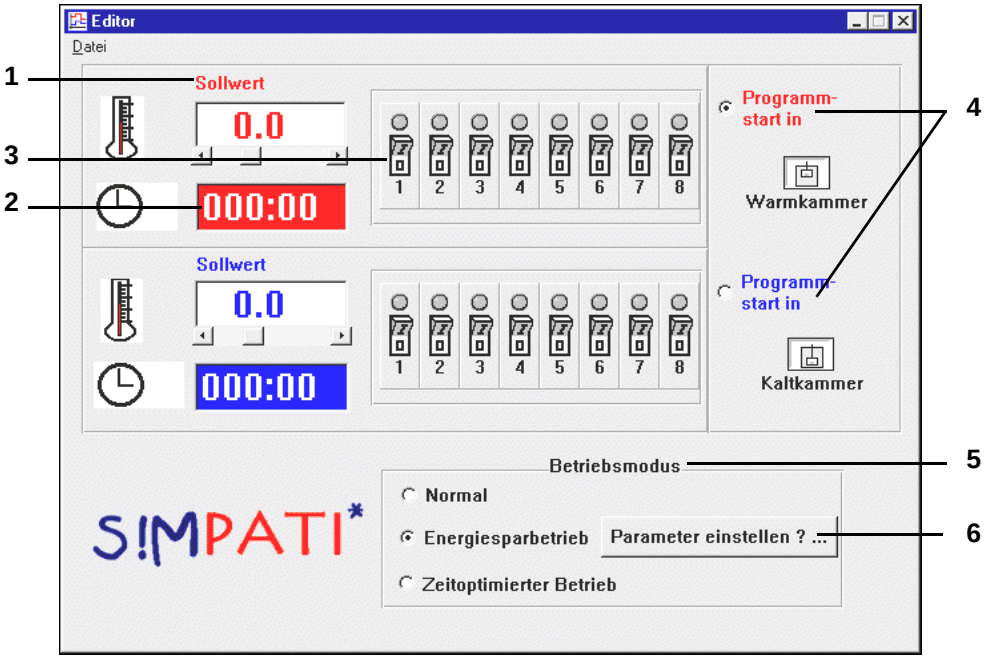


Fig. 9-44: Editor

1 The nominal values for the hot/cold chamber can be set directly via the keyboard or the scroll bar. If a value is entered which exceeds the range limits, it is 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 ≤ 60 is entered, then it is reset to 59 minutes on saving, i.e. invalid values are not 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 one can decide with a simple click of the mouse whether the program should start in the hot or the cold chamber.

5 Various operating modes can be selected. The following differences exist between the operating modes:

1) Option

Normal

In normal mode, the desired nominal values for temperature are set and controlled.
To achieve a quicker temperature change in 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 nominal value (inactive nominal value). After the lifting basket has moved into the preheated or -cooled chamber, the active nominal value is reset.

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

Fig. 9-45: Normal

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 nominal value of 23 °C.

Use the Item 6 function → *Fig. 9-44: Editor (page 110)* to enter a warm-up time; during this time, the active nominal value is set before the lifting basket is moved so that the 23 °C is overwritten.

Time-optimised mode

In time-optimised mode it is possible to specify an inactive nominal value just as in normal mode; this means that the chamber in which the lifting basket is not located is pre-heated or super-cooled in this mode as well.

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

1) Option

Creating a test program for a shock chamber

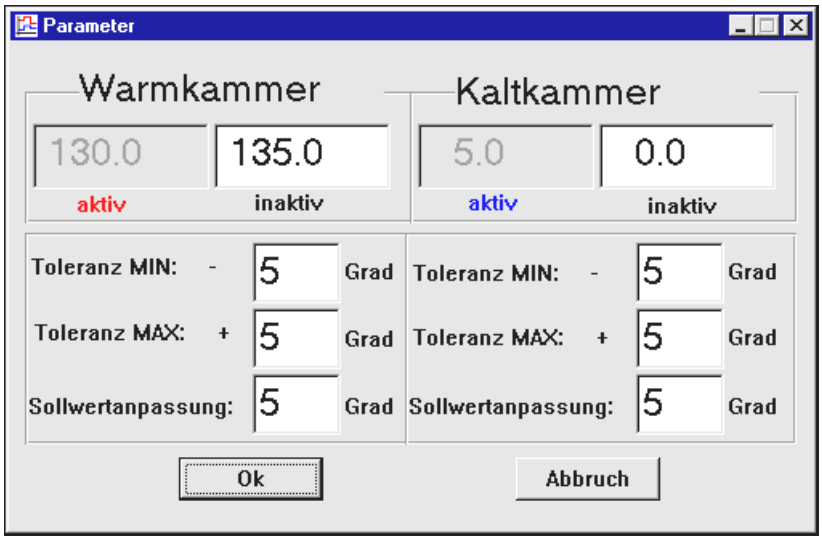


Fig. 9-46: Time-optimised

The inactive nominal value is entered like in normal mode. Error messages are also displayed here if incorrect entries are made.

Example → *3 Program example for a shock chamber with DMR controller (page 241)*

1) Option

9.5.2 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.

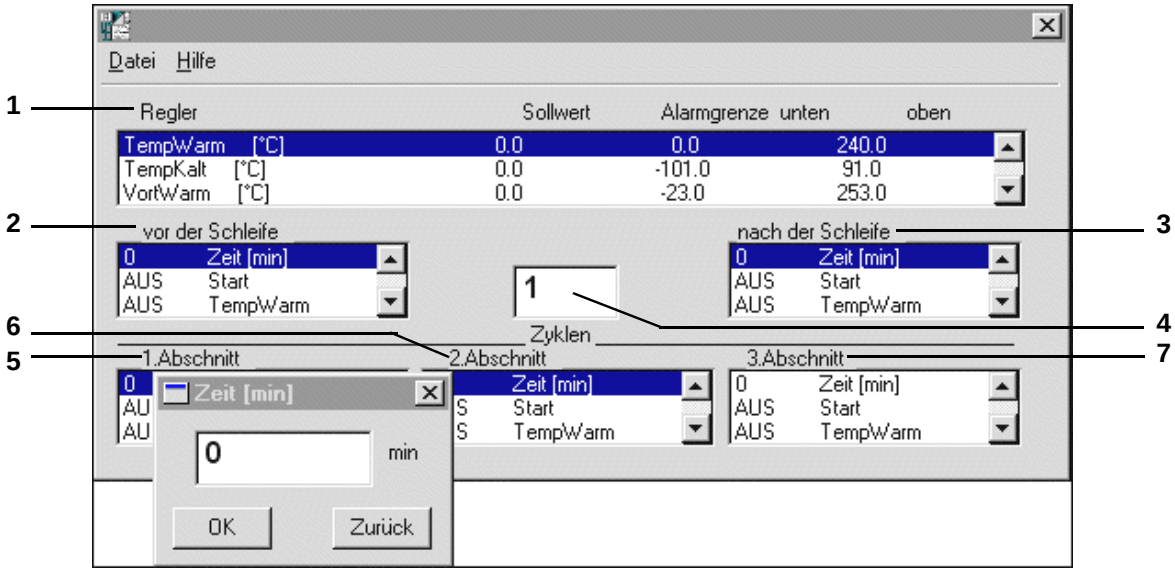


Fig. 9-47: Creating a test program

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).

1) Option

Description of the settings

1 List box of all control variables with nominal values and alarm limits.
Double-click on the corresponding line to open a window to modify the nominal values or alarm limits. The alarm limits should not be set too narrowly, as this can cause major short-term deviations in terms of the nominal/actual values when the lifting basket is moved.

2 Before the loop (pre-conditioning)

Here, the test specimen can be brought to a defined starting temperature, if necessary, prior to the actual test.

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)

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

Here, the status of the digital channels as required after the execution of all the loops (cycles) must be entered (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 Here, the cycles programmed in each section are executed at the corresponding temperatures. Enter the required number of cycles (number of loops).

5 1st section

Here, 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).

The status can be changed by double-clicking on the channel name. Set the time by double-clicking on Time [min] and entering the time required 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 cycle time set is only to be executed when the nominal/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 nominal value curve → *General profile settings (page 91)*, → *Appendix: Examples (page 233)*. It makes sense in this instance to only activate the wait function for approx. 3 minutes after the lifting basket is moved so that the temperature in the lifting basket (and therefore the actual temperature value) can match the new ambient temperature. If the dwell time is 0, this section is skipped.

1) Option

6 2nd section

Here, set the dwell time for the corresponding chamber (e.g. middle chamber) and the status of the digital channels (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 time required 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 cycle time set is only to be executed when the nominal/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 nominal value curve → *Appendix: Examples (page 233)*. It makes sense in this instance to only activate the wait function for approx. 3 minutes after the lifting basket is moved so that the temperature in the lifting basket (and therefore the actual temperature value) 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.

Here, enter the dwell time for the particular chamber (e.g. cold chamber in the 3x shock chamber) and the status of the digital channels (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 cycle time set is only to be executed when the nominal/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 nominal value curve → *Appendix: Examples (page 233)*. It makes sense in this instance to only activate the wait function for approx. 3 minutes after the lifting basket is moved so that the temperature in the lifting basket (and therefore the actual temperature value) can match the new ambient temperature. If the dwell time is 0, this section is skipped.

1) Option

9.5.3 The menu function »File«

New

Enter a new test program name

Opening

Opening a test program. If a shock test program is not involved, then this program is treated like a shock test program (before the loop, section 1, section 2, etc., 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 re-opened. This also applies when using »Save As«.

Printing

Printing a test program

Sample program → *Appendix: Examples (page 233)*

9.5.4 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. 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 creating a program using SIMPATI care must be taken that at control value 3 "Max. Umtemp.Time" a nominal value of at least 15 minutes must be entered. If the control value is not programmed (nominal value = 0) this leads to error message"A031: Wait function time exceeded" immediately after the program starts. → Appendix: Operation of a type TS 130 shock chamber with Simcon/32 controller under the SIMPATI* software package (page 223)*

NOTE
*See to it that the type is set
→ Fig. 6-1: Chamber configuration in SIMPATI* (page 43) to a double or triple shock chamber in the chamber configuration.*

1) Option

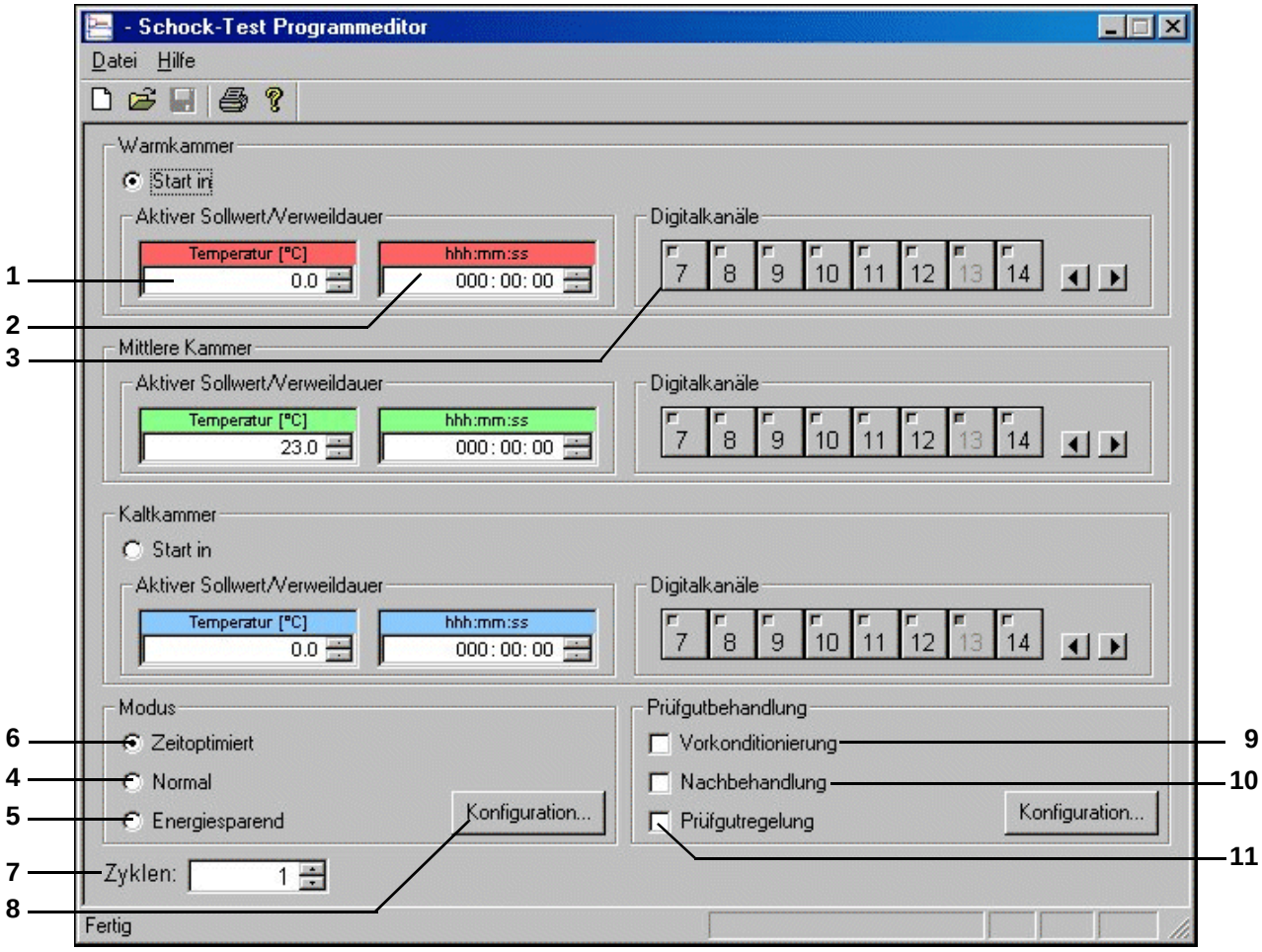


Fig. 9-48: Shock chamber editor (Simcon, Simpac)

1 The test takes place at the temperature entered here. If a nominal value 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 nominal value, 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 that appear inactive (light grey) are set indirectly, i.e. via other menu windows.

3-chamber shock chamber

After the dwell time has expired 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 122)*.

Operating mode

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

Inactive nominal value

To achieve a quicker temperature change in 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 nominal value (inactive nominal value). After the lifting basket has moved into the preheated or -cooled chamber, the active nominal value is reset. The inactive nominal value depends on the mode selected.

4 In normal mode the desired temperature nominal values 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.

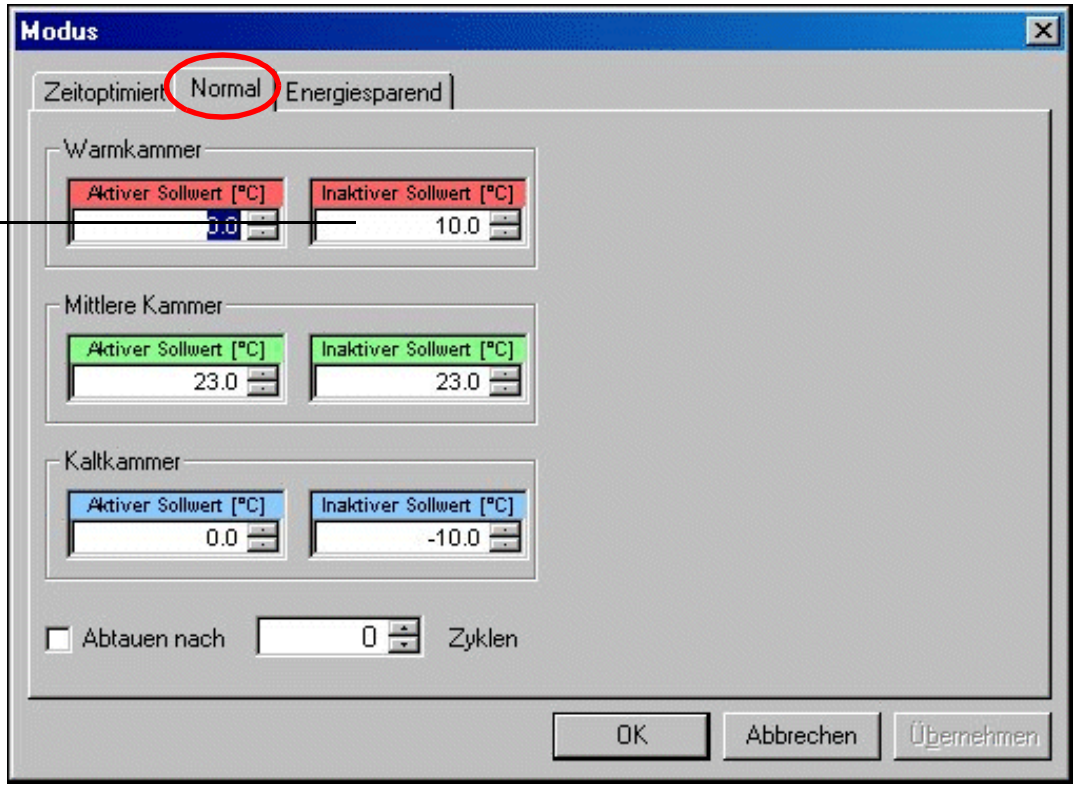
6 In time-optimised mode it is possible to specify an inactive nominal value just as in normal mode; this means that the chamber in which the lifting basket is not located is pre-heated or super-cooled in this mode as well.

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

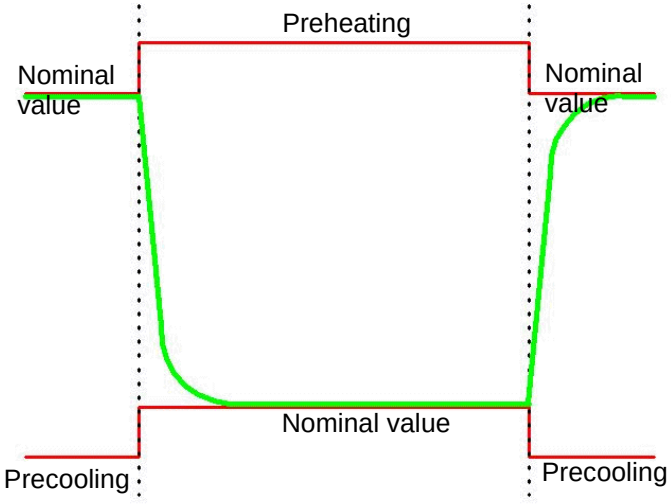
7 The number of chamber changes required is specified.
Once the number of cycles has been processed, the lifting basket automatically moves into the hot chamber.

8 Configuration of the operating mode selected → *"Normal" operating mode (page 119)*, → *"Energy-saving" operating mode (page 120)*, → *"Time-optimised" operating mode (page 121)*

"Normal" operating mode



Hot chamber



Cold chamber

Fig. 9-49: Normal mode

Creating a test program for a shock chamber

"Energy-saving" operating mode

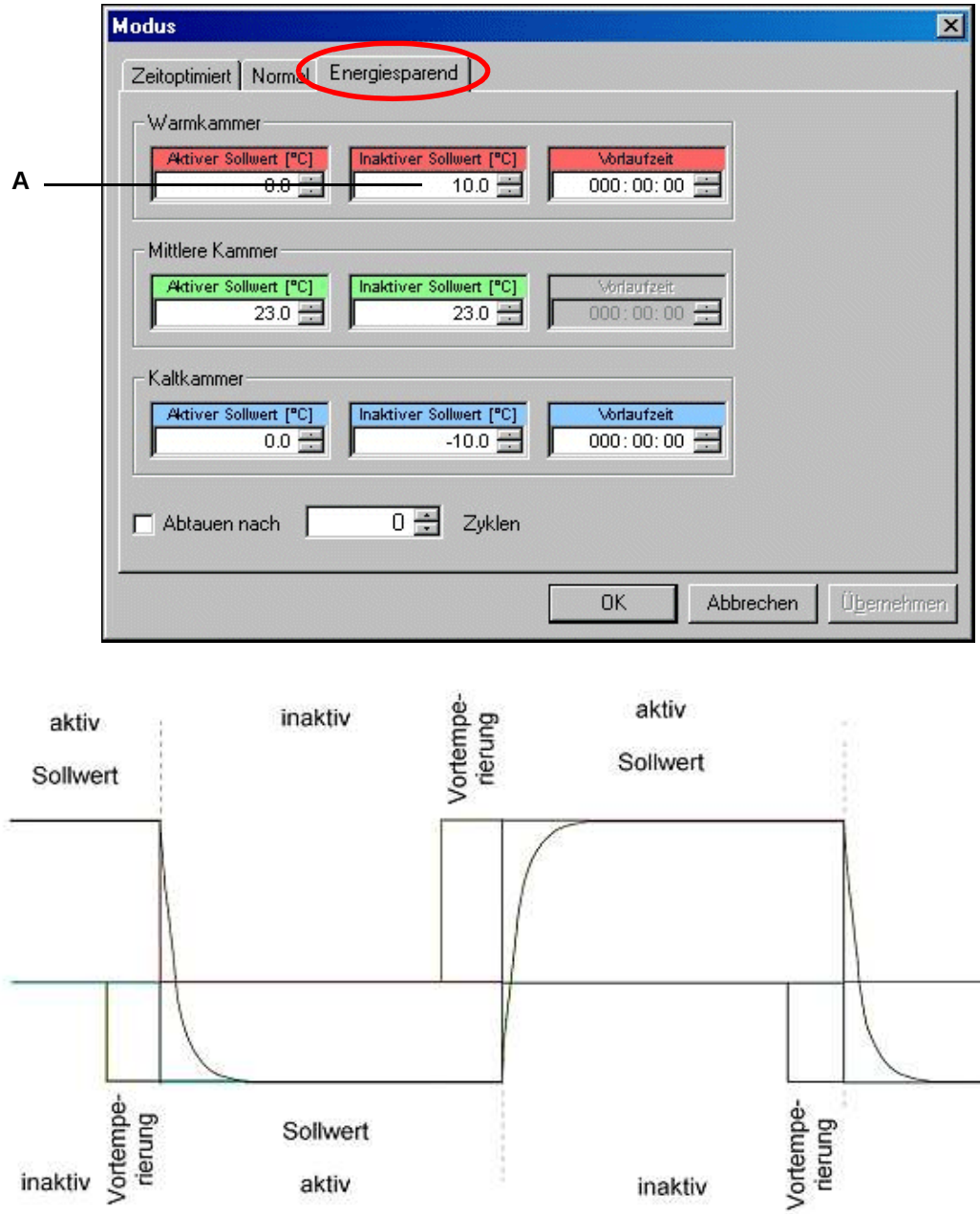
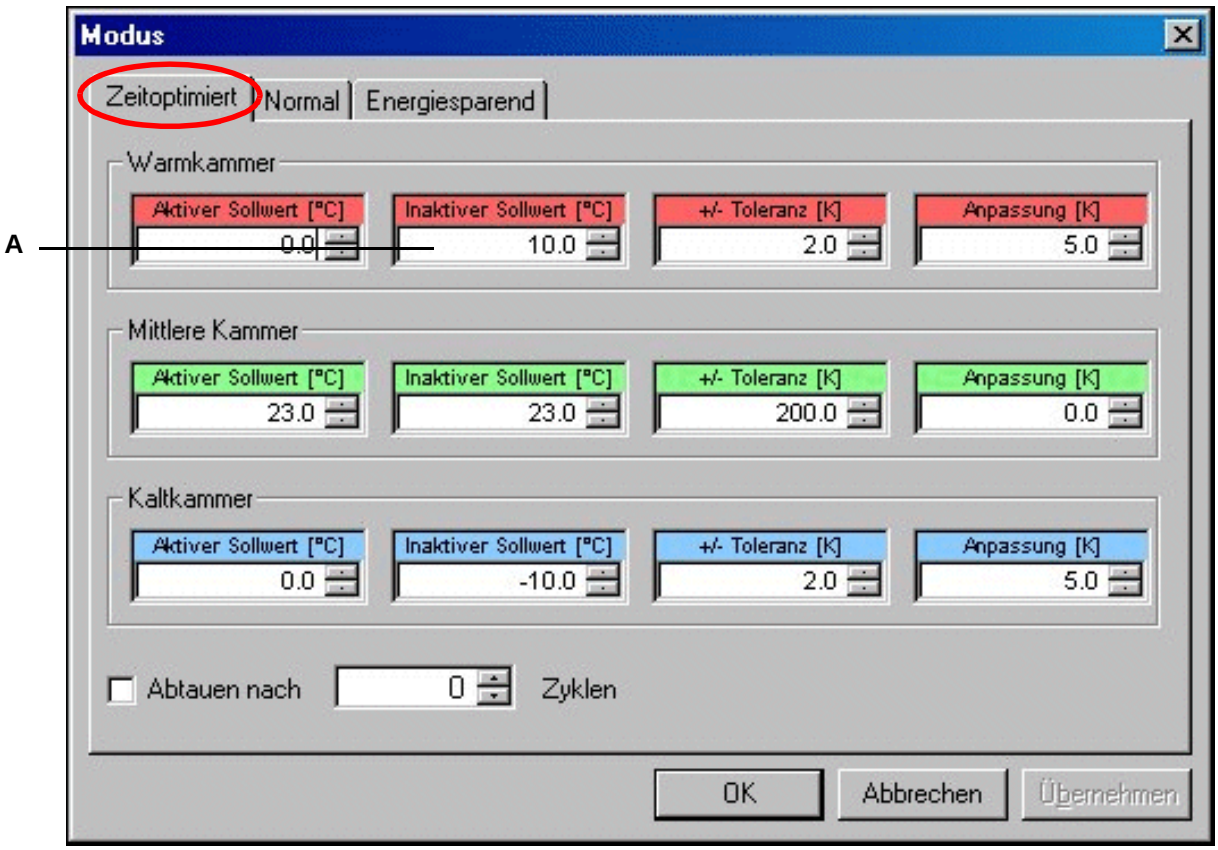


Fig. 9-50: Energy saving mode

1) Option

"Time-optimised" operating mode



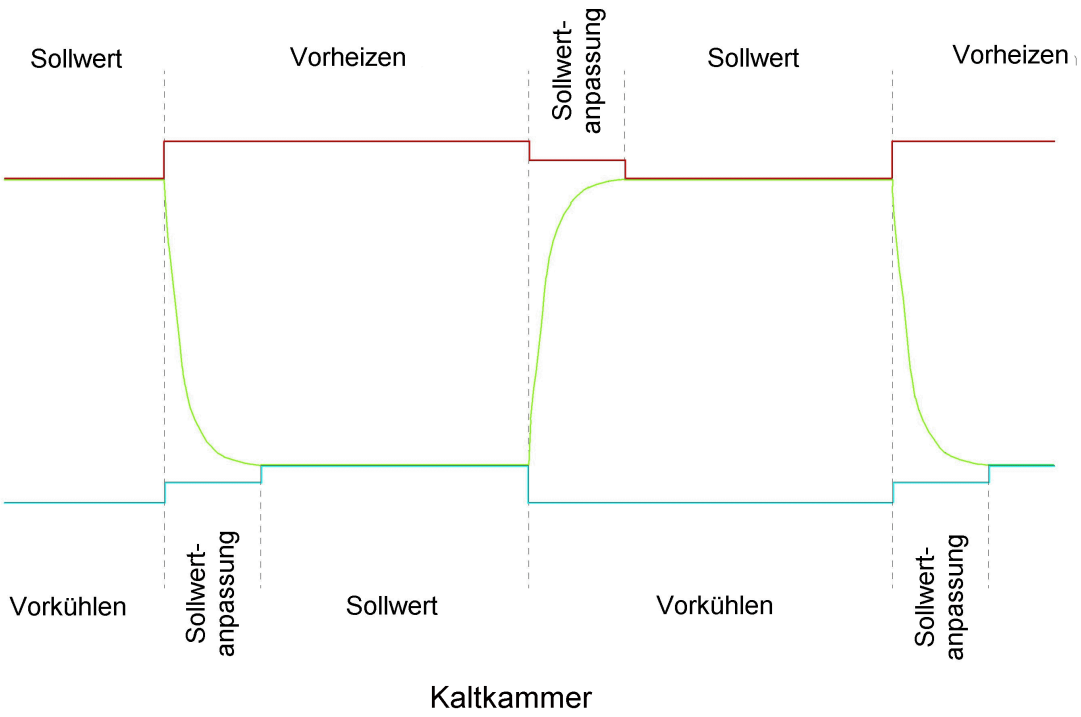


Fig. 9-51: Time-optimised mode

1) Option

Specimen treatment

9 The test specimen may exhibit a significant temperature difference with respect to the nominal value configured for this chamber once the lifting basket is introduced. 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, the test specimen is tempered as required in order to prevent burns, for example, when the test specimen is removed.

11 The active nominal value is controlled via the temperature sensor exposed on the test specimen.

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

1) Option

10 TEST PROGRAM TRANSFER BETWEEN THE CHAMBER AND SIMPATI*

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 13.

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

NOTE
If you use the → 11 Starting/stopping a test program (page 125) function to start a test program, you can make the program transfer from the PC to the chamber there as well.

10.1 Loading test programs from SIMPATI* to the chamber controller

Fig. 10-1: Test program download

1 All of the test programs saved in the above directory (specify directory) appear in this list

→ *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)*

2 If you have not saved a test program in the directory Item 1, select the directory here and then select the corresponding test program name via the program list Item 1

3 Select the program location in the chamber controller.

CAUTION
Existing test programs are overwritten on confirmation of a message!

4 Transfer the test program to the chamber controller

1) Option

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

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

Fig. 10-2: 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 at left, specify directory → *Fig. 6-1: Chamber configuration in SIMPATI* (page 43)*), choose a different directory here.

3 Save the test program in the directory Item 2. Do not enter a file extension. If a file with this name already exists, SIMPATI* will call your attention to this.

4 Saving a test program

1) Option

11 STARTING/STOPPING A TEST PROGRAM

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 10.

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

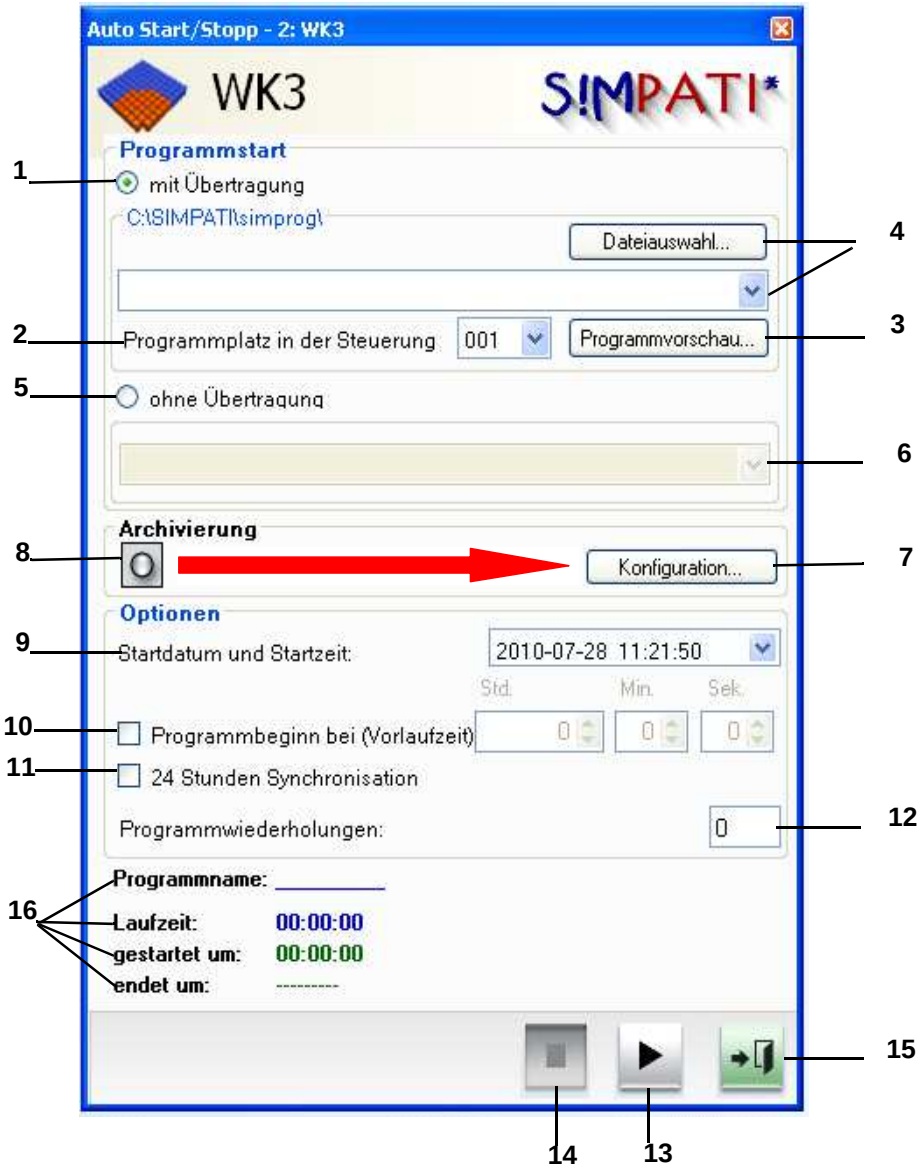


Fig. 11-1: Starting/stopping a test program

1) Option

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 → *Fig. 11-1: Starting/stopping a test program (page 125)*.
The → *Fig. 10-1: Test program download* 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 Graphic program preview of the test program selected.

4 Selection of the path in which the test program is located and 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 → *13.1 Archiving (page 143)*.

8 Archive name as specified under → *Fig. 11-1: (page 125)* (the start date is used if no name is specified).

9 Start date and start 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 and 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.
→ *4 Example of a test program with program advance (page 242)*

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, this 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 specimen.
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.

1) Option

12 THE PLANNER (SCHEDULER)

You can access the menu via the context menu of the relevant chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 19.

Scheduler startup

The scheduler consists of two components:

1 **Simscheduling.exe**: executes event processing. The SIMPATI*.STR file needs to be adapted as follows to activate event processing:

50:01: simscheduling::

NOTE

If SimScheduling is not started, the pre-programmed events are 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.

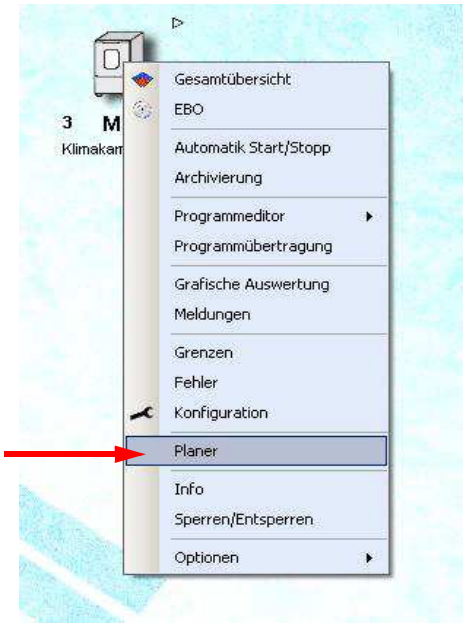


Fig. 12-1: Chamber context menu

1) Option

12.1 Overview of planning sequences

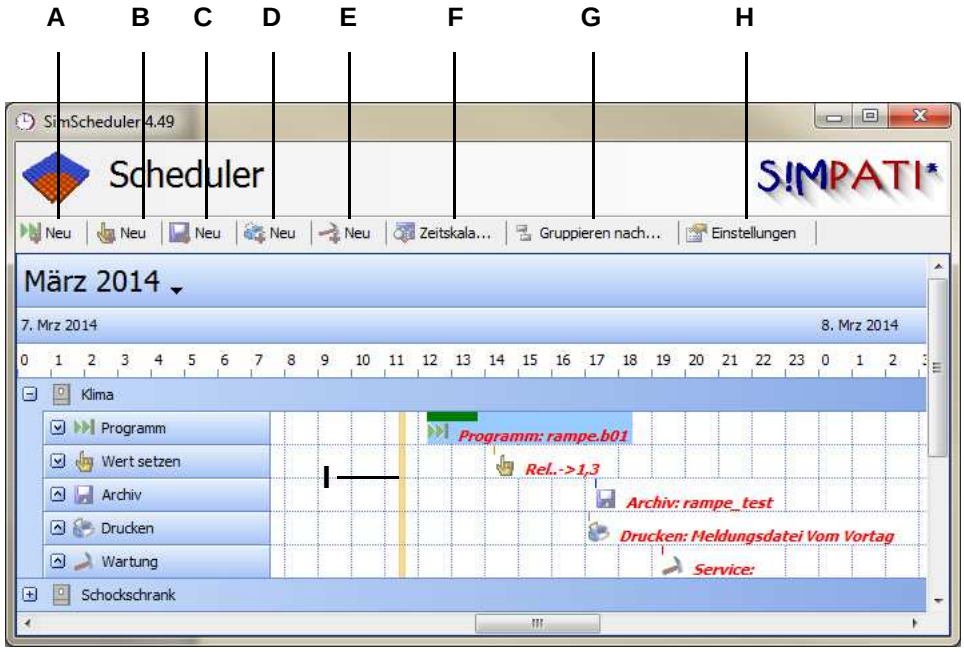


Fig. 12-2: Scheduler

This function can be used to plan events.

A: Starting and stopping programs

→ *Program (page 130)*

B: Setting and changing values

→ *Setting and changing value (page 131)*

C: Starting and stopping archiving

→ *Archiving (page 133)*

D: Printing files

→ *Printing (page 134)*

E: Scheduling maintenance

→ *Maintenance (page 135)*

1) Option

As an alternative, events can 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 row that is clicked.
For example, setting program or value, etc.

Settings can be made with this function.

F: Interface display setting (time scale)

→ *Time scale (page 141)*

G: Options 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

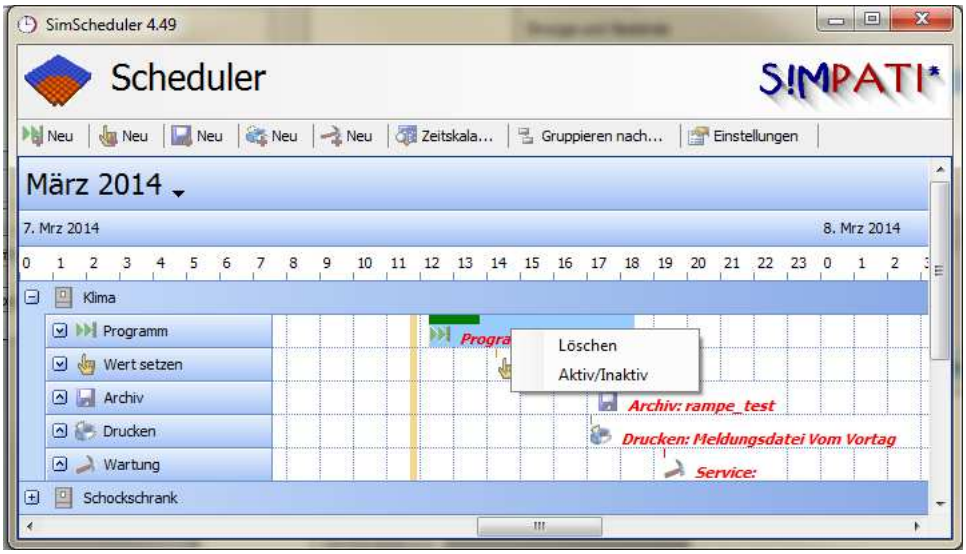


Fig. 12-3: Event bar

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

- Delete event
- Set active/inactive

Fig. 12-4: Deleting repeat events

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

1) Option

Program

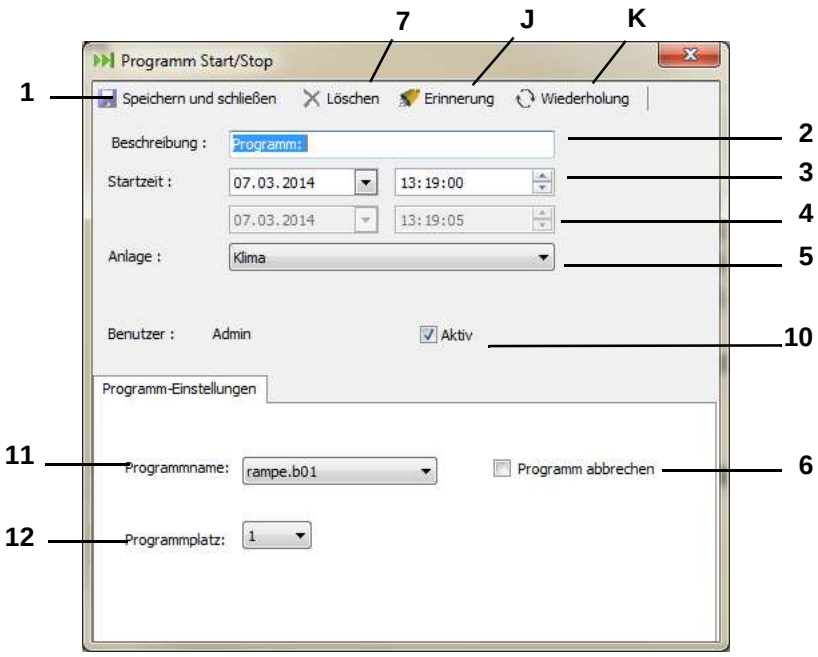


Fig. 12-5: Program

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 system required for the event

6 Activate the input option for the end time (Item 4): The program can be stopped after a predetermined time.
When this checkbox is clicked, the end 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

→ *Reminder (page 136)*

K: Define repetitions of the event

→ *Event repeats (page 137)*

8 Activate/deactivate the event

9 Name of the program

10 Program location in the system

NOTE
IMPORTANT! Inactive events are not executed!

1) Option

NOTE

The stop time set/calculated in the course of saving the program is fixed. If your program includes "waits", then it may be stopped early as a result.

Setting and changing value

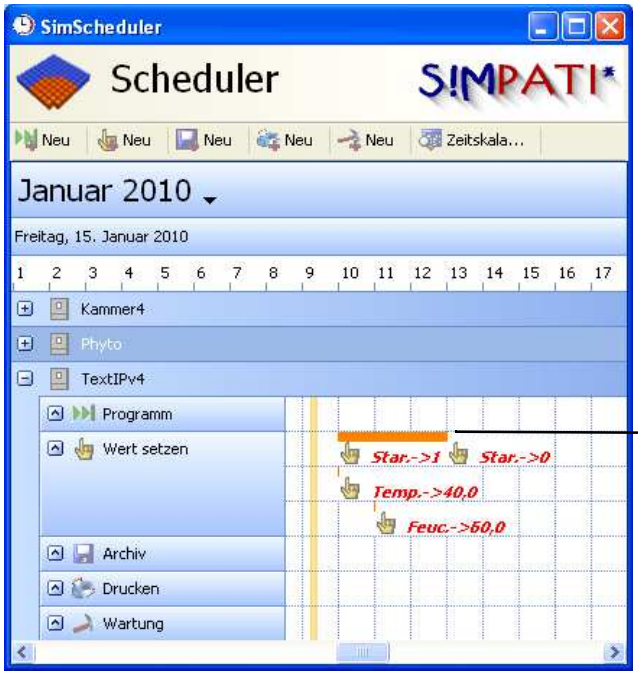


Fig. 12-6: Example: Lock duration

The "Set value" event has a default duration of 5 seconds.
It is possible, however, to specify a longer duration (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 value set is "held" during this time.
- To disable program startup or maintenance in the Scheduler during this period of time; it is not possible to create an event during this 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.

The following sequence is pre-programmed:

10:00:00 a.m.: 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 a.m. to 13:00 p.m.

10:00:05 a.m.: Temperature set to "40 °C".

11:00:00 a.m.: Rel. humidity is set to "60 %".
The system continues to run with these values until 13:00 p.m.

13:00:00 p.m.: Starting channel is set to "0".
After the starting channel has been set to "0" the system is re-enabled and can be operated.

1) Option

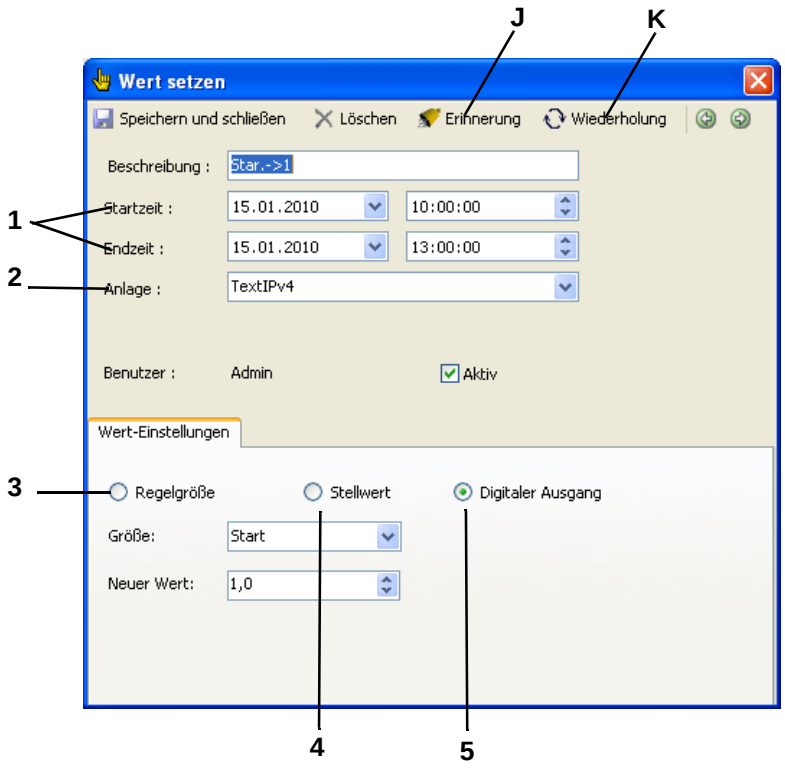


Fig. 12-7: Example: Pre-programmed run

1 Date/time setting for setting a value

2 Select system required

3 A control variable is changed

4 A control value is changed

5 A digital output is changed

J: Set up reminder option for the event

→ *Reminder (page 136)*

K: Define repetitions of the event

→ *Event repeats (page 137)*

1) Option

Archiving

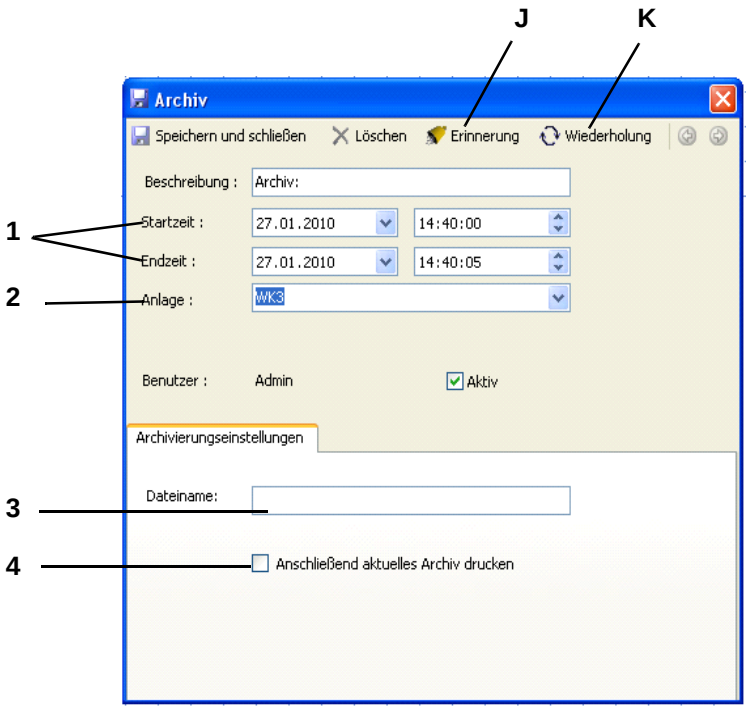


Fig. 12-8: Archiving

1 Date/time setting for starting or stopping archiving

2 Select system required

3 Input file name required for the archive

4 Print the current archive after archiving is completed

J: Set up reminder option for the event

→ *Reminder (page 136)*

K: Define repetitions of the event

→ *Event repeats (page 137)*

1) Option

Printing

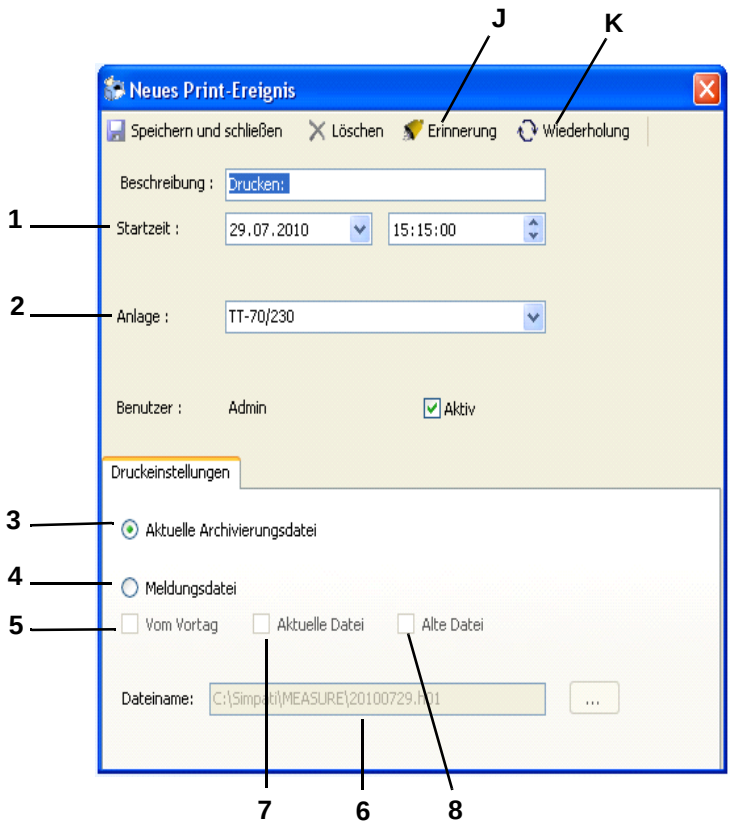


Fig. 12-9: Printing

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 landscape format set is recommended for printing the archive file. To ensure that the print event is executed on the printer selected, an archive should be test-printed in advance via the command line call in the SIMPATI* system directory.*

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

1 Date/time setting for starting a print event

2 Select system required

3 Print current archive file

4 Print a message file

5 Message file from the 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 message file

8 Old message file

J: Set up reminder option for the event
→ *Reminder (page 136)*

K: Define repetitions of the event
→ *Event repeats (page 137)*

1) Option

Maintenance

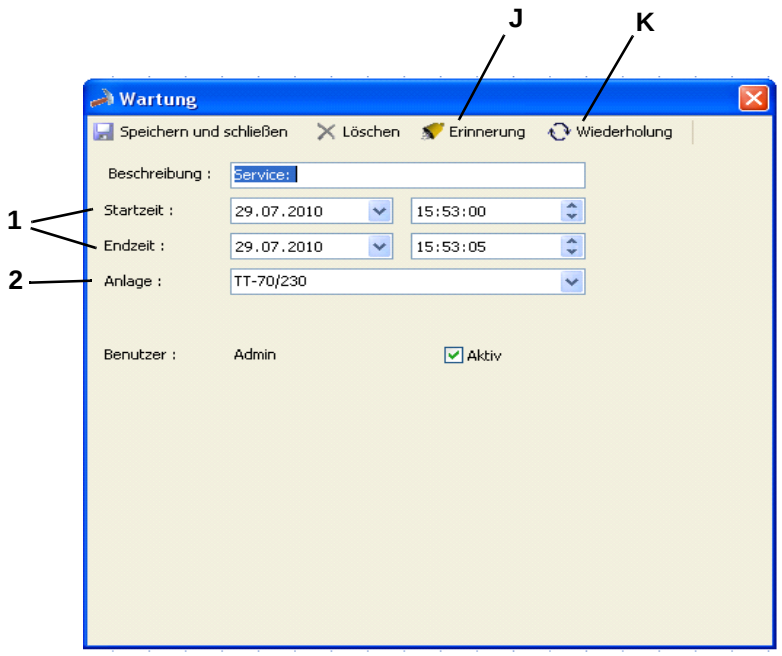


Fig. 12-10: Maintenance

NOTE

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

1 Date/time setting for starting or stopping maintenance

2 Select system required

J: Set up reminder option for the event
→ *Reminder (page 136)*

K: Define repetitions of the event
→ *Event repeats (page 137)*

1) Option

Reminder

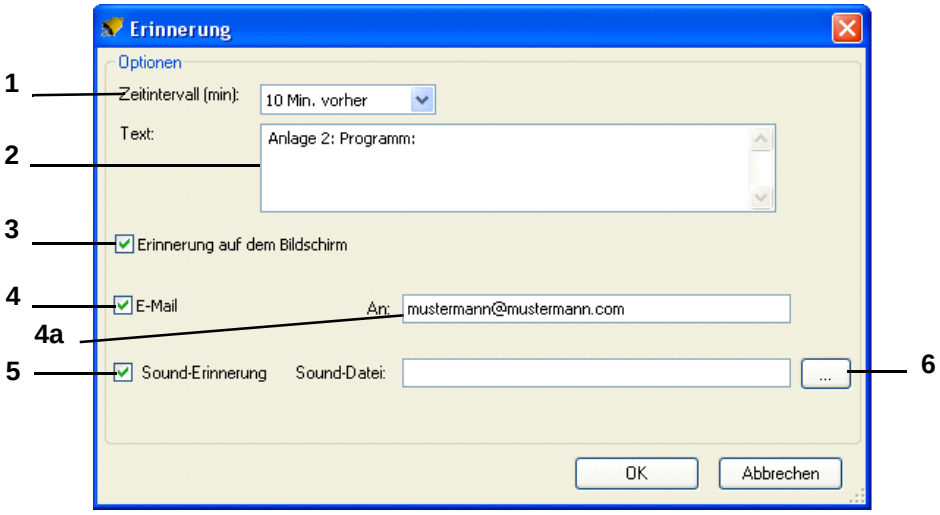


Fig. 12-11: Reminder

1 Time interval of the reminder

XX min./h in advance: The reminder comes up before the start of the event (e.g. 5 min. before program startup).
XX min/h afterward: The reminder comes up after the event (e.g., 10 min after the end of archiving).
0 min/h afterward: The reminder comes up simultaneously with the end of the event.

2 Basic text of the reminder

3 Notification on the screen

4 Notification via e-mail → *Configuration of the e-mail settings (page 142)*

– 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

1) Option

Event repeats

Daily

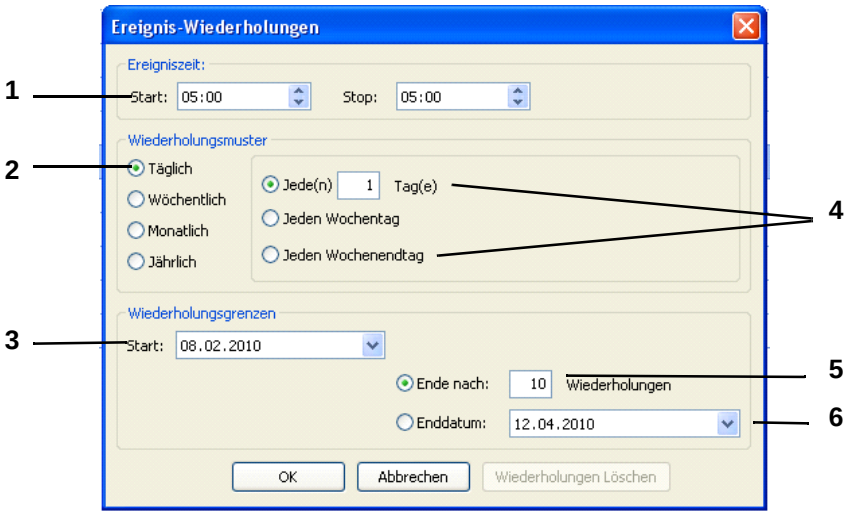


Fig. 12-12: Mask: Daily

1 Start and stop time
2 Type of repeat
3 Start date
4 Repeat for every X day/days possible
5 Number of repeats total
6 Date until when the event will be repeated

Weekly

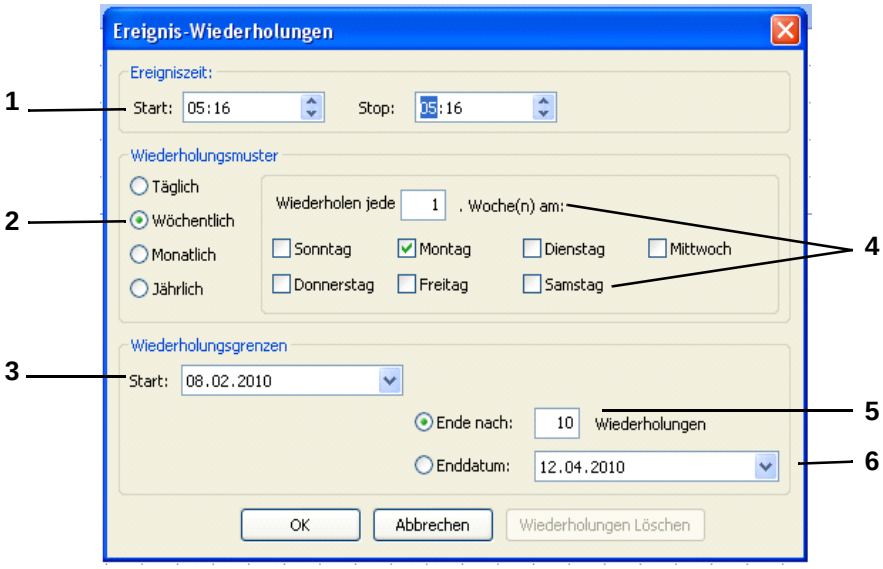


Fig. 12-13: Mask: Weekly

1 Start and stop time

2 Type of repeat

3 Start date

4 Repeats for every X week and any day/days possible

5 Number of repeats total

6 Date until when the event will be repeated

1) Option

Monthly

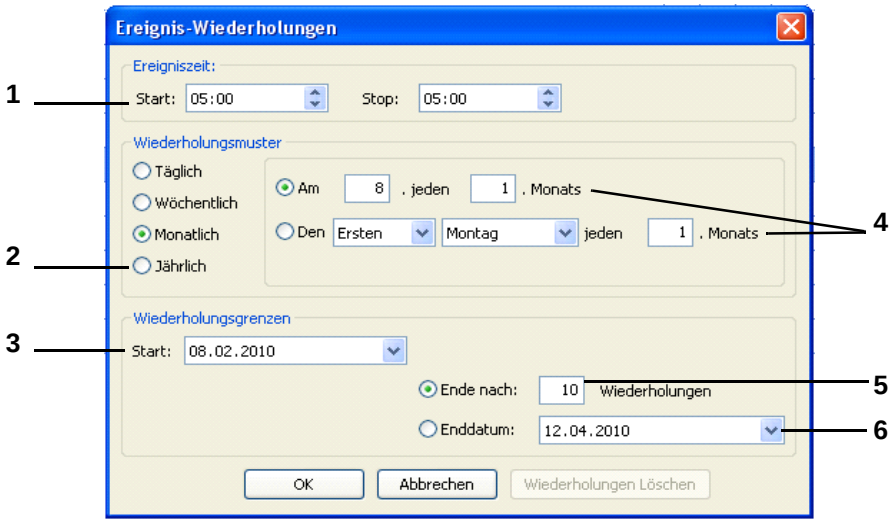


Fig. 12-14: Mask: Monthly

1 Start and stop time

2 Type of repeat

3 Start date

4 Repeats for every X month and any day/days possible

5 Number of repeats total

6 Date until when the event will be repeated

1) Option

Annually

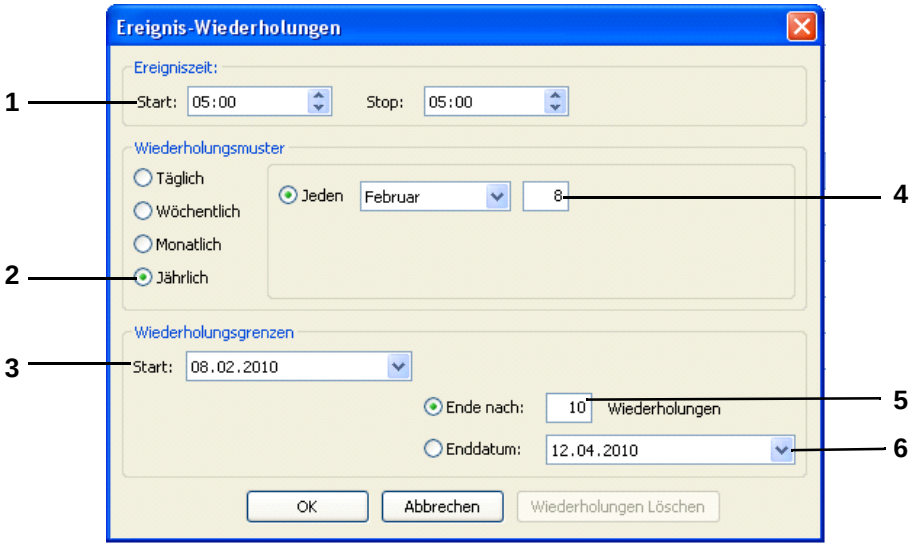


Fig. 12-15: Mask: Annually

1 Start and stop time

2 Type of repeat

3 Start date

4 Repeats for a given date in the year possible

5 Number of repeats total

6 Date until when the event will be repeated

1) Option

Time scale

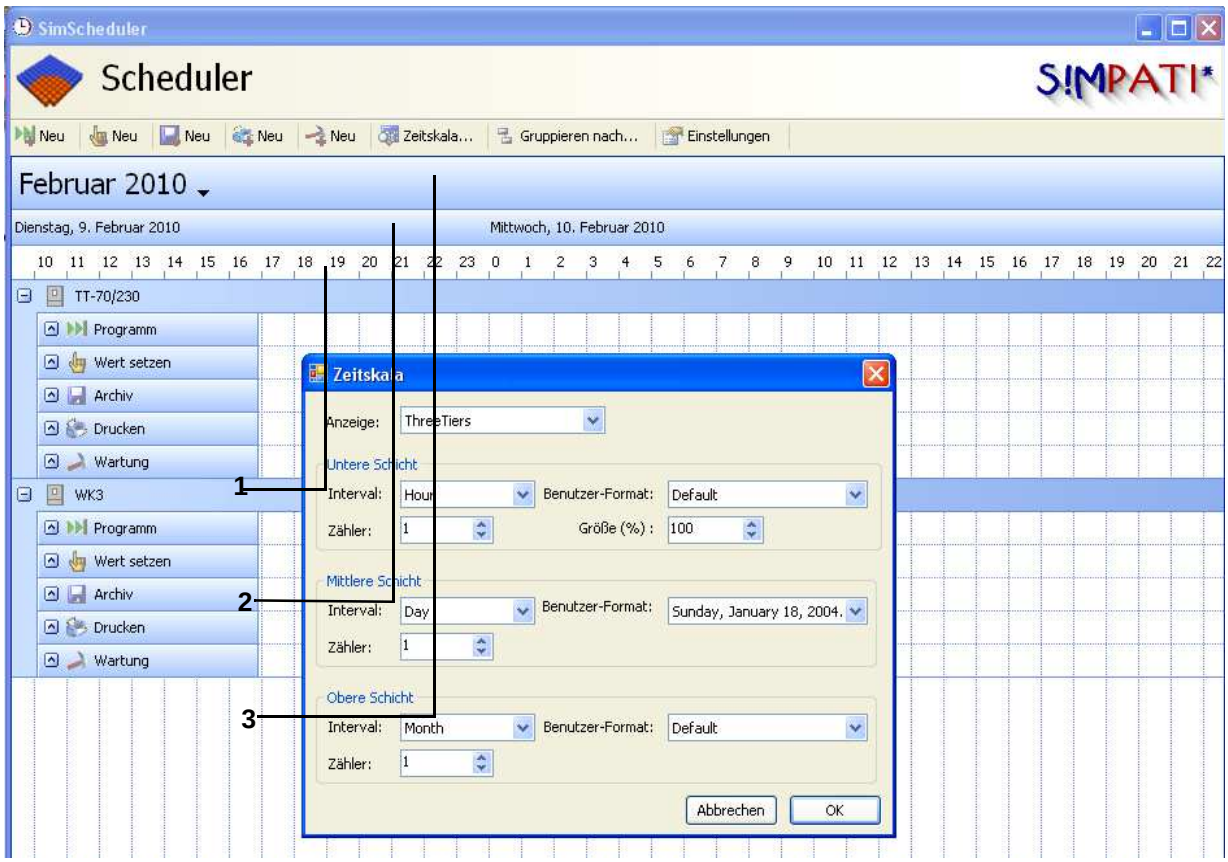


Fig. 12-16: Time scale

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.

1) Option

Configuration of the e-mail settings

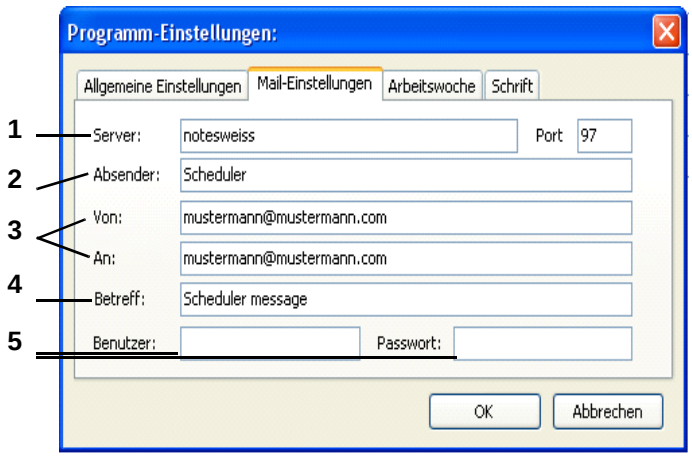


Fig. 12-17: E-mail settings

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 required at the SMTP server. Otherwise the fields remain empty.

1) Option

13 ARCHIVING, RECORDING AND EVALUATION OF A TEST

13.1 Archiving

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 11.

This function is used to save the test procedure.

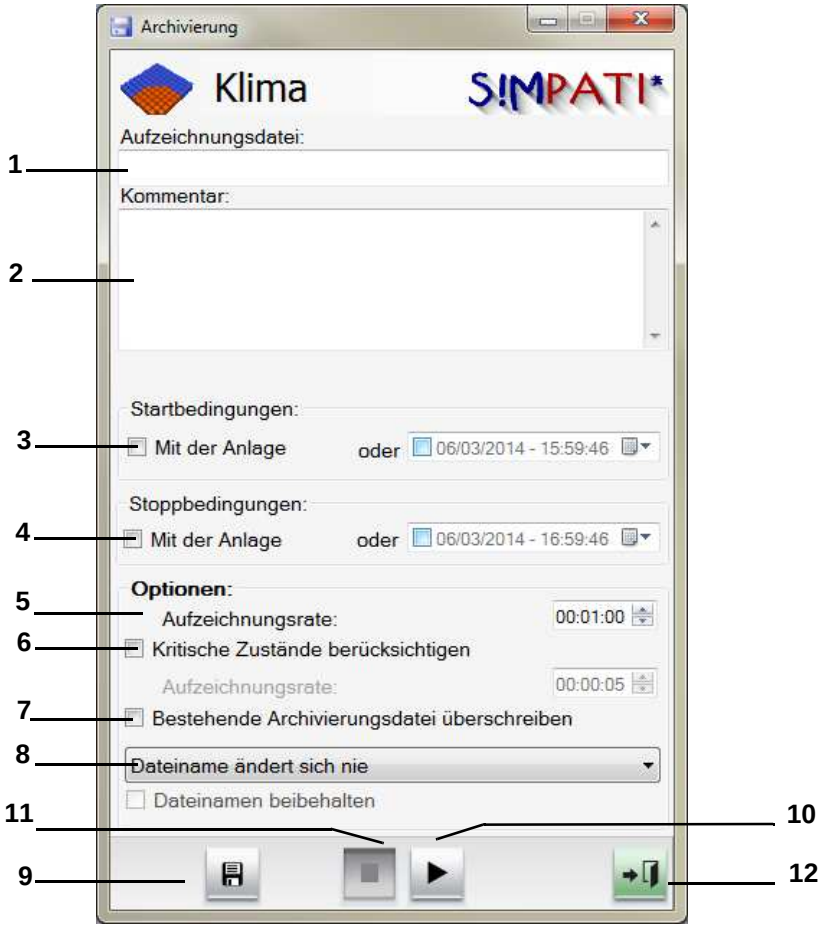


Fig. 13-1: Archiving

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.

1) Option

6 You can define the intervals for the recording in the event of a malfunction, 5 sec or a multiple of 5 sec.

7 You can activate this function and after that the existing file of the same name is automatically overwritten. This must be taken into account particularly if there are several tests on one day which are archived under that day's date. (Does not apply to the application according to 21 CFR Part11.)

8 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.

9 All inputs are saved.

10 Starts archiving immediately; the inputs for Item 3 are ignored.

11 Stops archiving immediately; the inputs for Item 4 are ignored.

12 Close the menu window; archiving will continue to run.

13.2 Graphical evaluation

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 14.

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*«

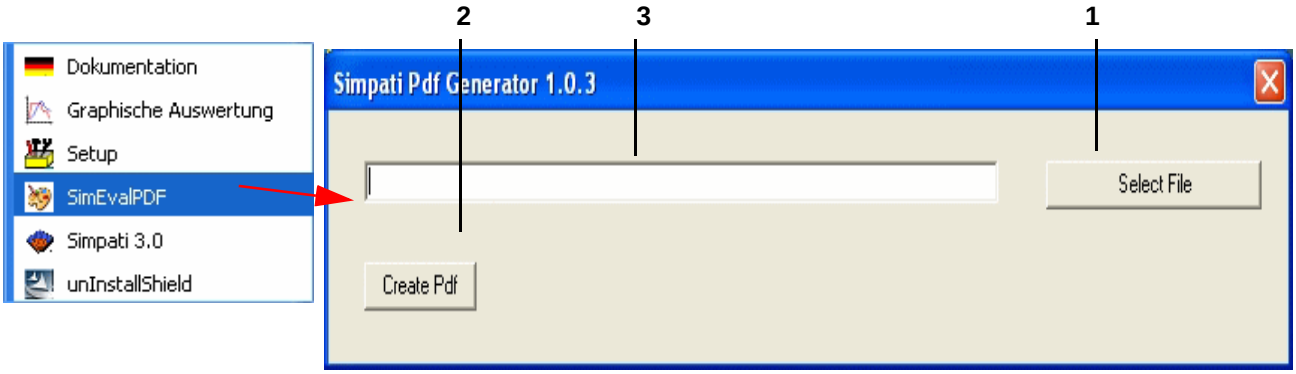


Fig. 13-2: Creating a PDF file

- Select an archive file Item 1; the archive file is displayed Item 2.
- The archive data are displayed via Item 3; closing the graphical evaluation creates and displays the PDF file.

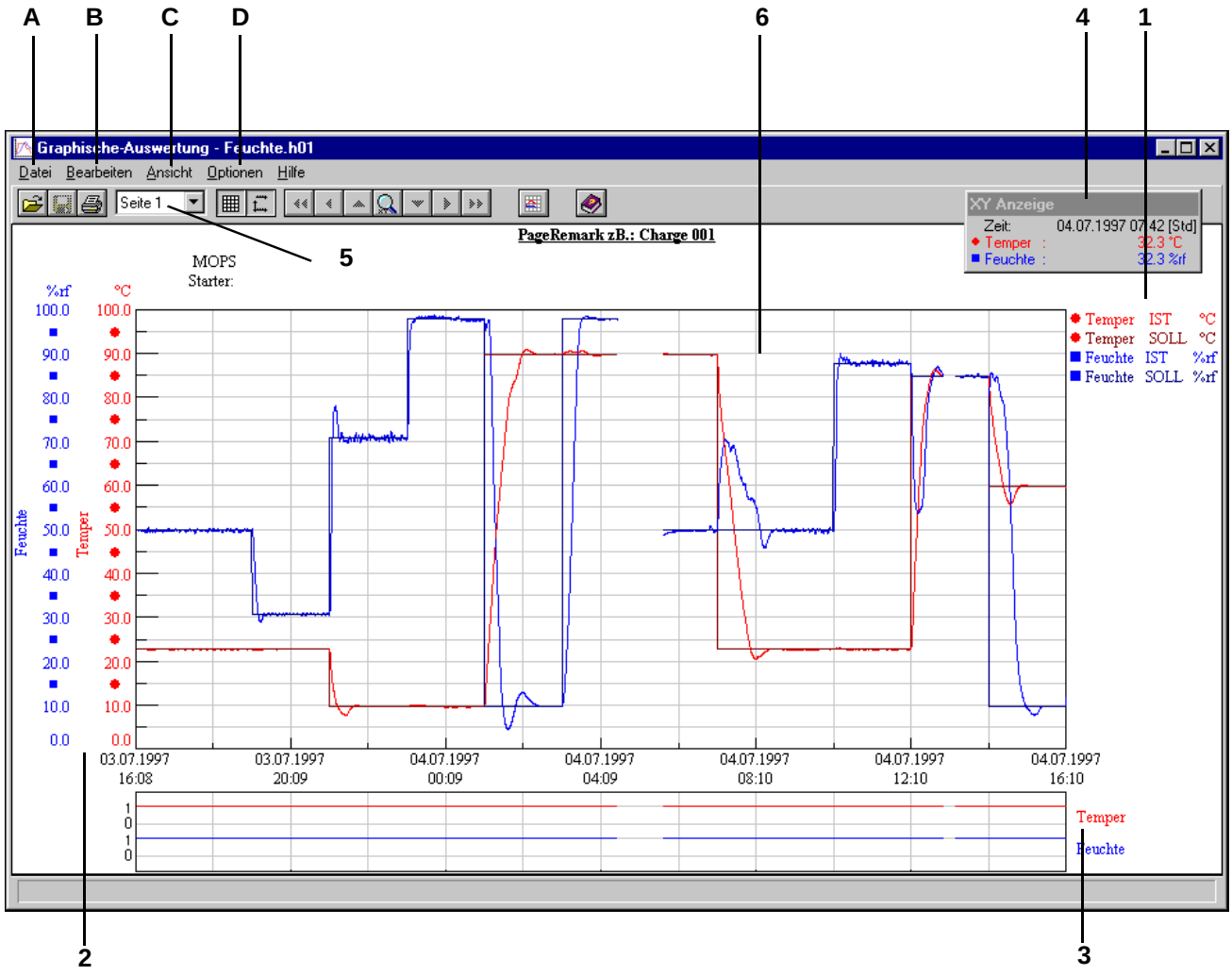


Fig. 13-3: Main menu Graphical evaluation

1 Analog channels legend (control variables)

2 Scale for analog channels (control variables)

3 Scale for digital channels

4 Moveable XY display

5 List box - page selection

6 Measurement curve range

There are eight pages available in a measurement file. These pages can be used to save different representations of the measured values. The pages are selected using the list box (Item 5).

A: The menu function »File«

Opening

When you open the graphical evaluation, the dialog box for opening a measurement file opens automatically or the chamber's measurement file activated in the SIMPATI* main menu is opened.

1) Option

Save As

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

Deleting

This function is used to delete measurement files.

Export

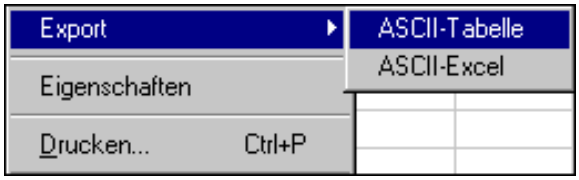


Fig. 13-4: Export formats

A measurement file's active view can be exported and processed using two different ASCII formats.

Fig. 13-5: Export settings

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

Properties

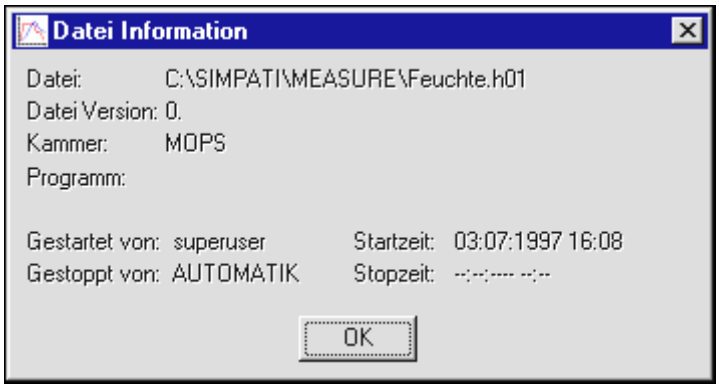


Fig. 13-6: Properties

1) Option

Printing

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«

Copying

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

C: The menu function »View«

Grid

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

Real time

This function enables switching between the relative time display and the real time display.

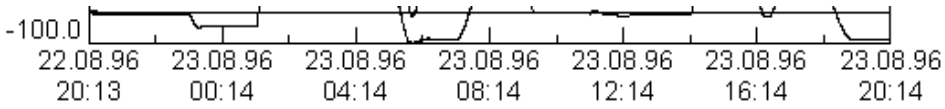


Fig. 13-7: Real time display

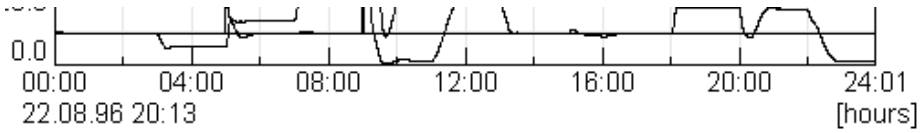


Fig. 13-8: Relative time display

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 active, only measurement points are displayed:

Black & white

All data are displayed in black & white.

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

This function is used for colourless copy for copying and faxing.

Seconds

The time display is accurate to one second.

1/100 scale

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

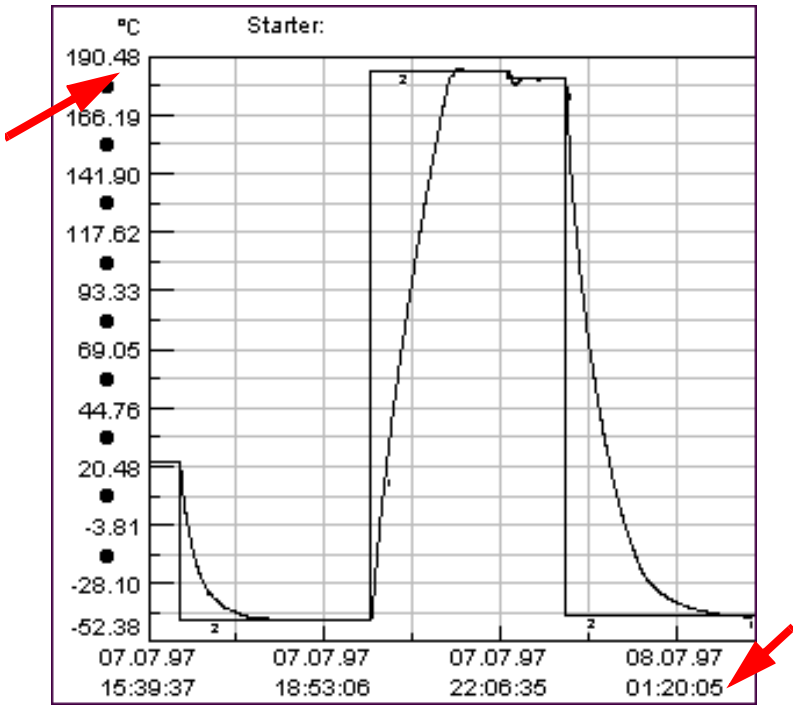


Fig. 13-9: 1/100 scale

Zoom in

Three different zoom functions can be selected using this function.

X/Y

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

X

This function can be used to enlarge a time section.

Y

This function can be used to enlarge a scale section.

A crosshair is displayed in the measurement curve range when the zoom function is active. 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 needs to be moved using the arrow keys. If the shift key is also held down, the crosshair will move in jumps. A mouse click is 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.

1) Option

Value

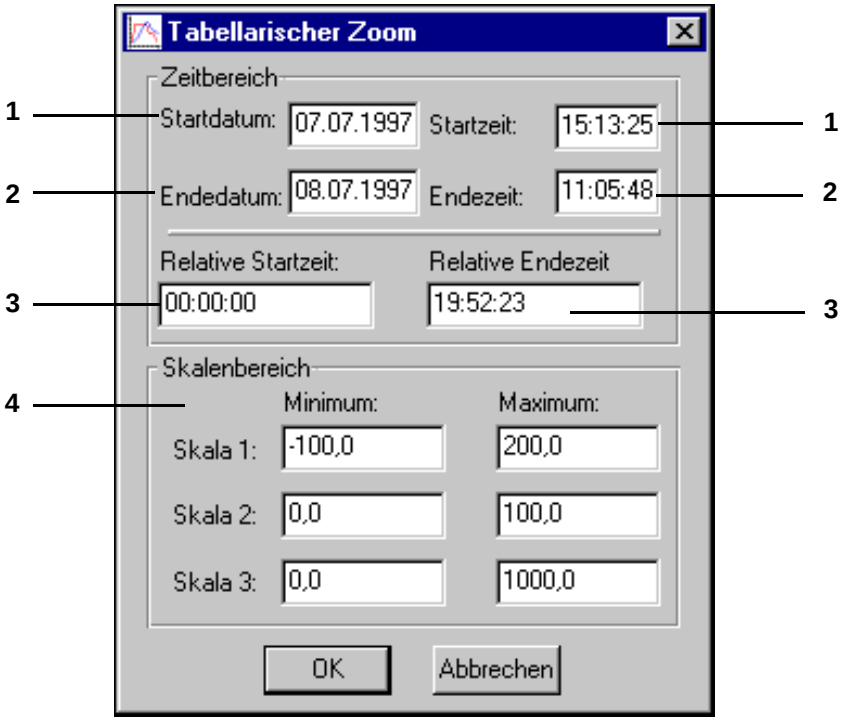


Fig. 13-10: Table zoom

The range can only be enlarged in the time display selected under → *Real time (page 148)*.

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

Here, the height of the zoom range required can be changed. To do this, enter the scale range of the analog channel required. If a range is entered for all three scales, all three ranges are also taken into account.

Moving zoom

This function can be used to move an enlarged section horizontally.

Fig. 13-11: Moving zoom

1) Option

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 returned in steps to the end of the measurement file.

6 The zoom is returned in a single step to the end of the measurement file.

Zooming back

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

Showng all

The entire measurement file is displayed.

D: The menu function »Options«

Measurement function

This function can be used to record rates of change.

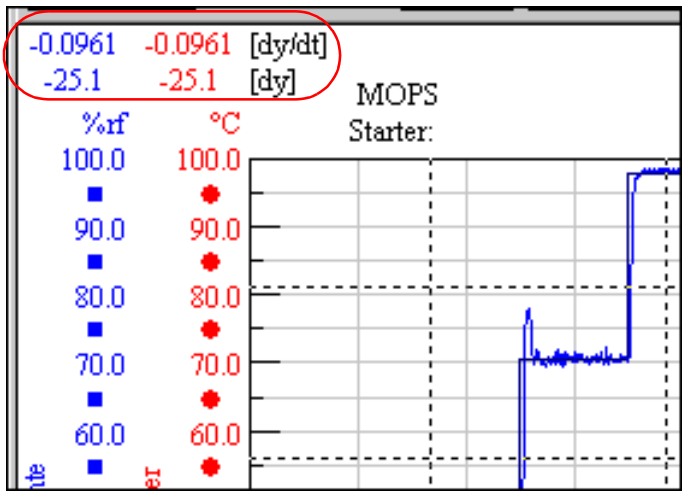


Fig. 13-12: Measurement function

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 → *Zoom in (page 149)* function is disabled as a result.

1) Option

Measurement data display

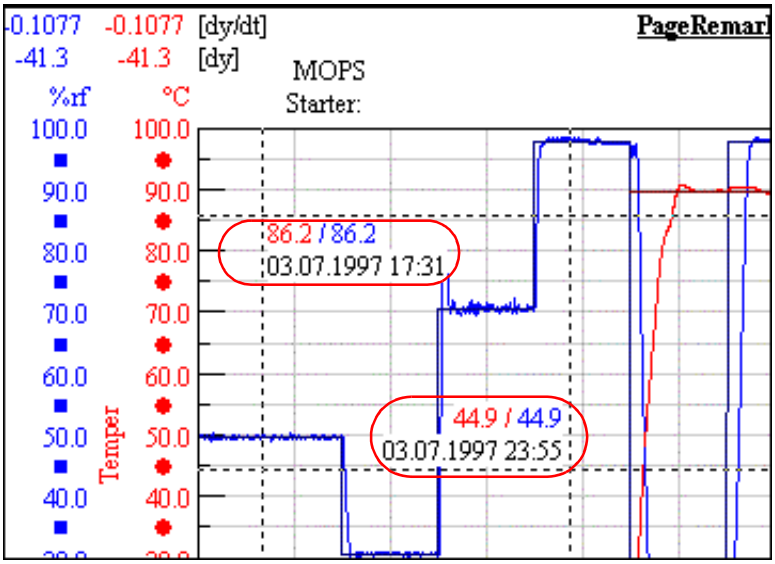


Fig. 13-13: Measurement data display

The actual values and the time are displayed in the zoomed area. To do this, however, the → *Measurement function (page 151)* function has to be active as well.

1) Option

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:

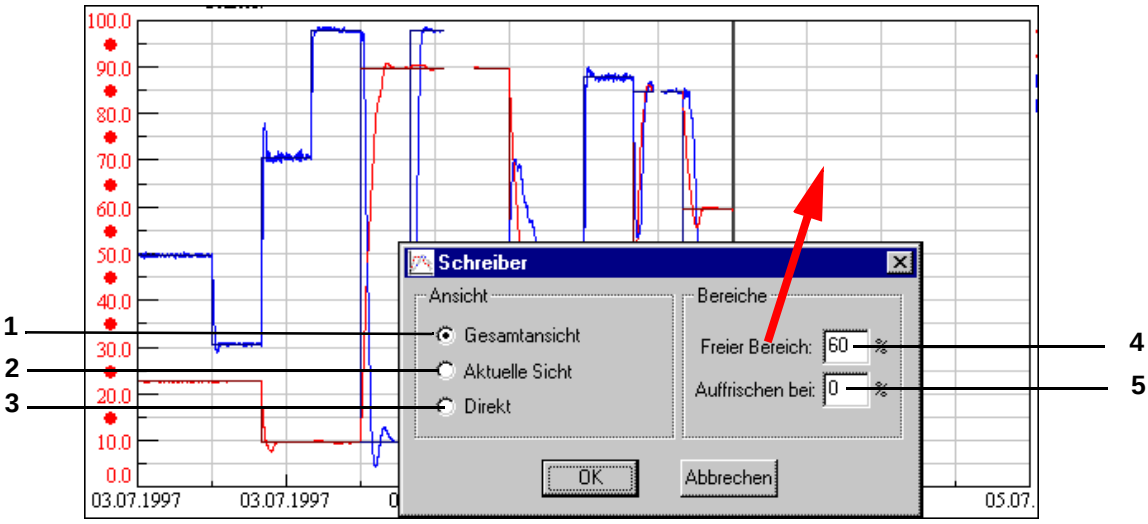


Fig. 13-14: Display Data logger

1 The entire measuring sequence is displayed; the new data points are added in the free area whose size can be input in Item 4. If the area specified in Item 5 is fallen short of, the entire view is re-scaled and another free area is made available.

2 This function is similar to Item 1. However, if the data were zoomed earlier 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:

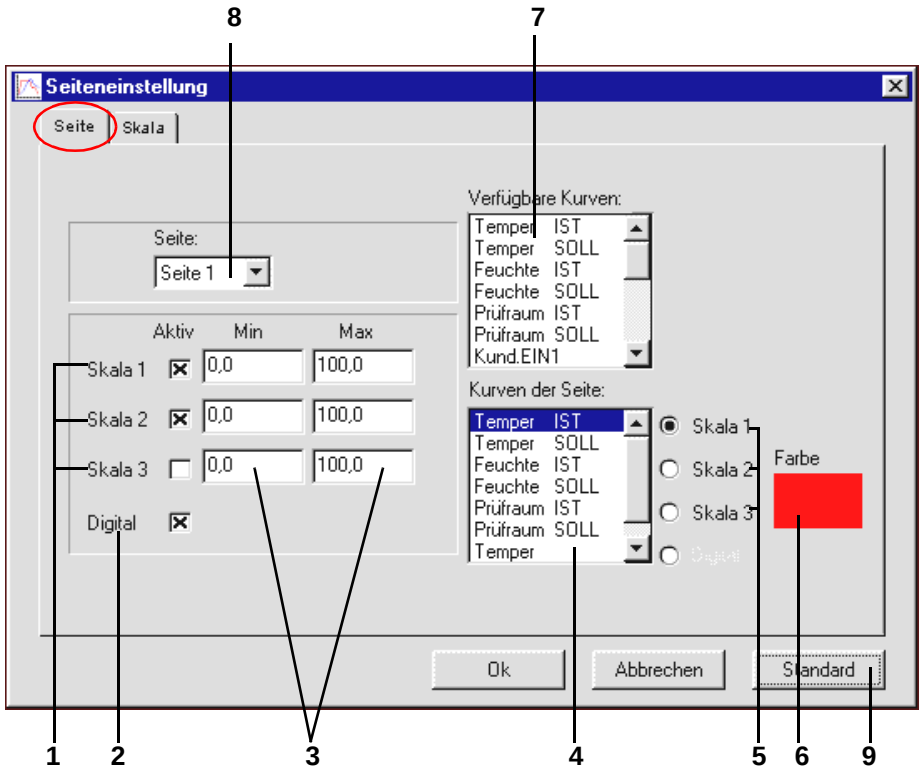


Fig. 13-15: Setting up the graphical evaluation page

1 Switching the scales for analog channels (control variables) on/off
Up to three scales max. for analog channels can be displayed.

2 Showing/hiding the scale for digital channels

3 The scale range for analog 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 that 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 Assigning curves to the scale
Active channels can be assigned to the scales as required. The analog channels legend (control variables) is updated automatically.

6 Assigning colour to the curve selected
The colour of the curve can be selected by clicking on the colour field.

7 List box of all available control variables, setpoints and digital channels

8 Page selection

9 The settings made are applied as default settings.

Scale setting

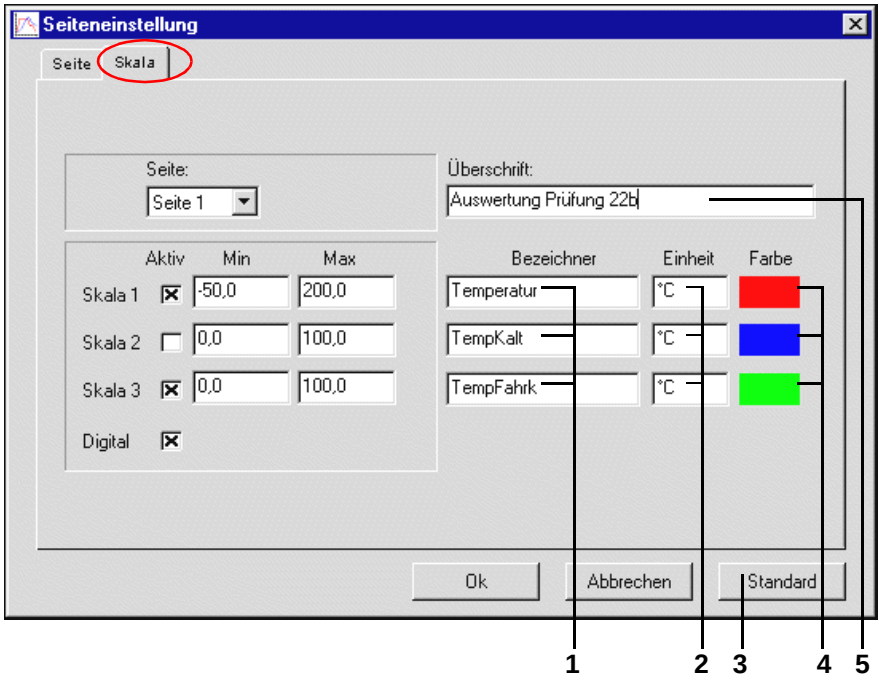


Fig. 13-16: Scale setting

1 Defining horizontal designation of the scale for analog channels (control variables)
This designation is also applied in the XY display.

2 Defining the scale unit for analog channels (control variables)
The unit is also applied in the XY display.

3 The settings made are applied as default settings.

4 Assigning colours to the scale
Colours are selected by clicking on the colour field.

5 Entering a heading

The data on the left-hand side of this dialogue box are identical to the menu
→ *Fig. 13-15: Setting up the graphical evaluation page (page 154)*

and perform the same function.

Graphical evaluation

1) Option

13.3 Graphical evaluation with »VisuWin«

To be able to use this program viewer, the application "visuwin.exe" needs to be selected in the system configuration → *5.2 Configuration of the main menu (page 28)* as the graphical evaluation tool.

13.3.1 Overview

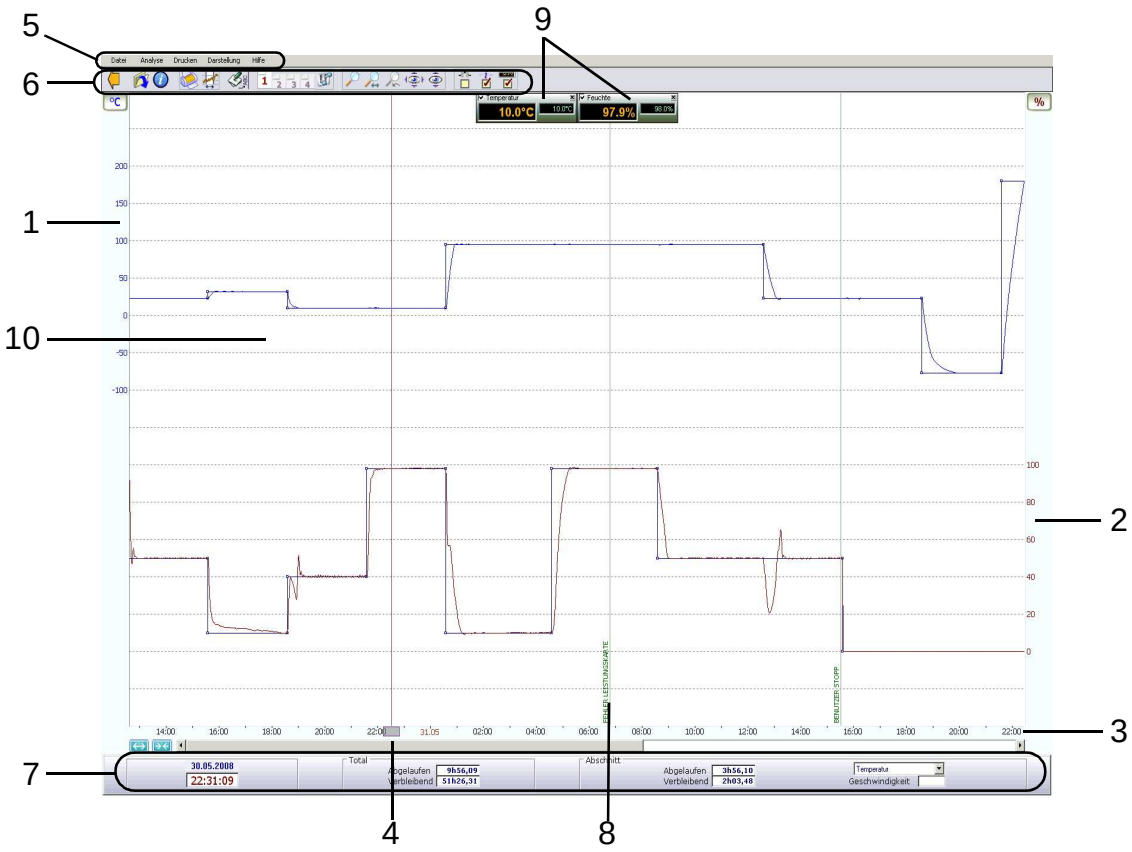


Fig. 13-17: »VisuWin« program viewer overview

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 interruption
9 Scanner
10 Display window

1) Option

13.3.2 Overview of the buttons

Symbol	Designation	Function	Reference
	»Quit«	End program	
	»Display new test«	Open another test	
	»Test information«	Call up test information	
	»Print«	Print test	
	»Specify zone«	Select zone	
	Comment		
	Page name	Other page views	→ *13.3.4 (page 160)*
	»Configure current view«	Configure display	
	Zoom function		
	Automatic adjustment of the scales		
	Show/hide digital channels		
	»Information window«	Show/hide information window	→ *13.3.5 (page 161)*
	Show/hide scanner		
			

1) Option

13.3.3 Display options

Display settings

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

- Select »Defaults« in the menu »Display«

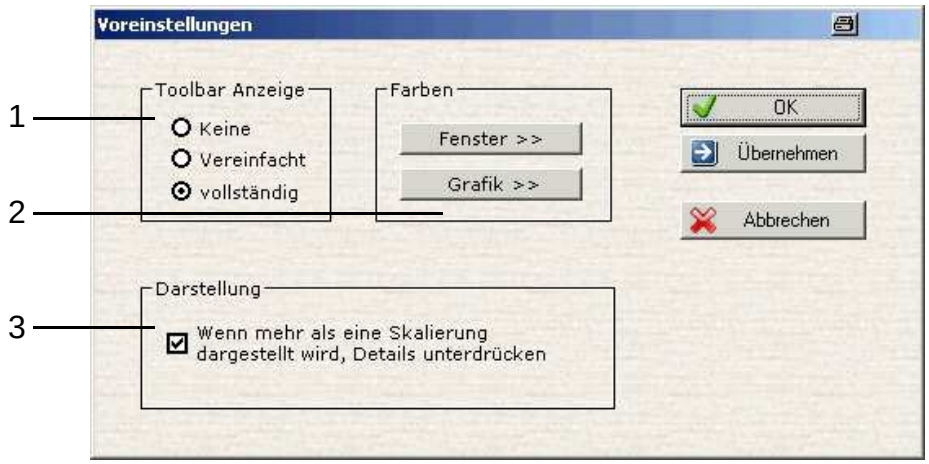


Fig. 13-18: Display settings

1 Display of the buttons

→ *Fig. 13-17: »VisuWin« program viewer overview (page 157)* Item 6

None	No buttons are displayed
Simplified	The buttons are displayed in a simplified manner
Full	All buttons are displayed in full

2 Colour settings of the display

Window	Colour selection of the window
Graphic	Colour selection of the graphic window

3 Adjustment of the scale relationship

13.3.4 Page view

If a test has a lot of 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:

• Switch to the page required. The page selected is displayed highlighted.

• To configure the page, press the button.

1) Option

13.3.5 Ruler and information window

The ruler

→ *Fig. 13-17: »VisuWin« program viewer overview (page 157)* Item 4

can be moved along the time axis. A scanner and the information window are part of it. It has the following functions:

– Positioning comments

1 Position the ruler at the point where the comment is to be inserted

2 Select »Display« → »Comments« → »New comment (on selection)«

3 Enter the text for the comment

– Measuring of time intervals

– Display of values

1 Press the grey rectangle on the time axis to move the ruler.

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

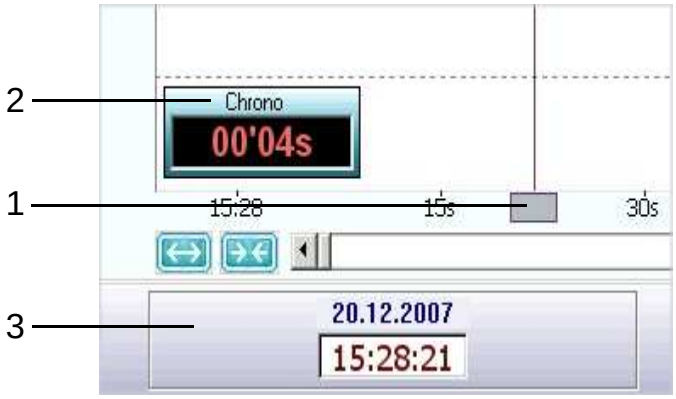


Fig. 13-19: Ruler

1 Field for moving the ruler

2 Scanner - relative time display

3 Information window

1) Option

Information window

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

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

Fig. 13-20: Information window

1	Date and time	At the position of the ruler
2	Total duration	»Elapsed« Elapsed time since the start of recording »Remaining« Remaining time until the end of the recording
3	Segment	»Elapsed« elapsed time of this segment »Remaining« remaining time of this segment »Speed« speed of the segment during ramping
4	Selecting the nominal value profile	

13.3.6 Exporting the 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 %.

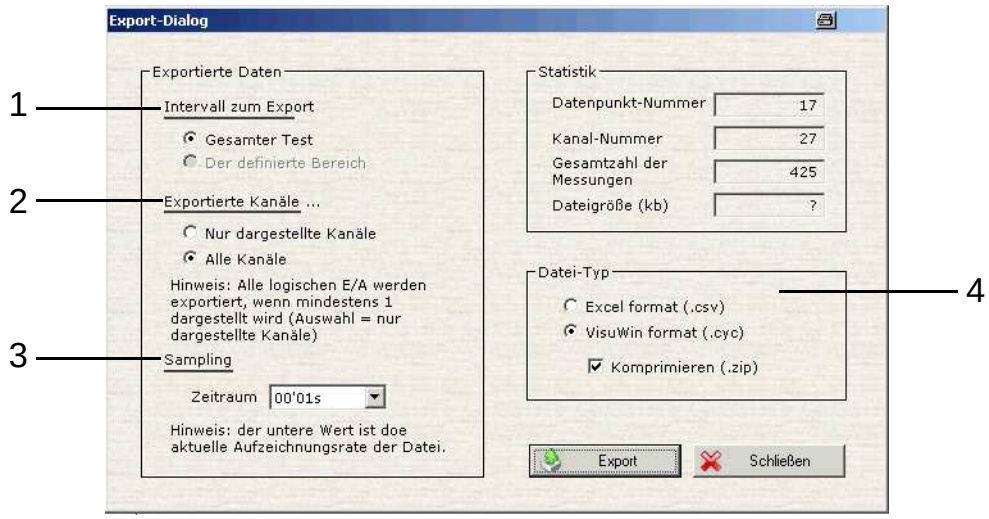


Fig. 13-21: Exporting the test

1 Select whether the entire test or only the selected range should be exported

2 Select whether only the channels displayed or all channels should be exported

3 Points of data are reduced in size as the timeframe becomes greater

4 Selection of data format

1) Option

13.3.7 Test information

Press the button to call up the test information.

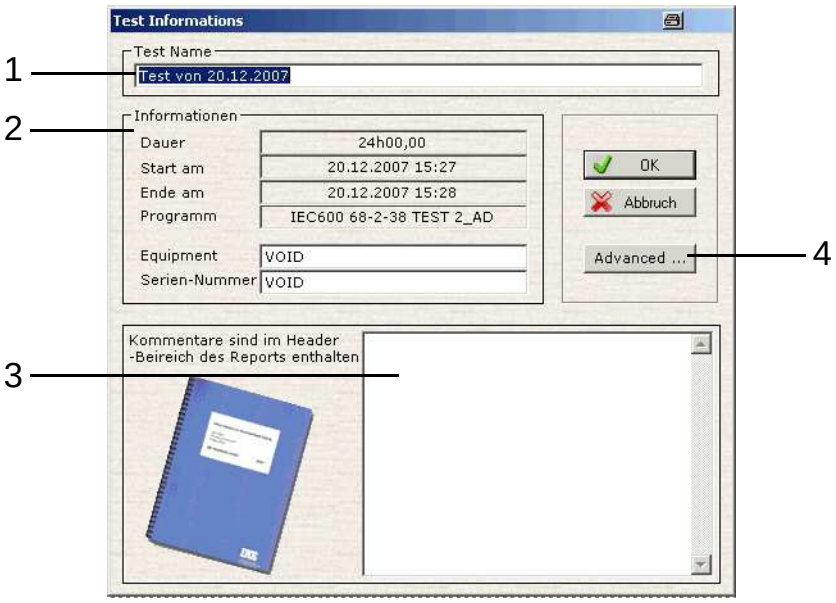


Fig. 13-22: Test information

1 Program name

2 Additional information on the test

Duration	Total duration of the test
Start on	Date and time of the start of the test
End on	Date and time of the end of the test
Program	Name of the program when using manual mode »Manual-Mode« appears
Equipment	Designation of the test chamber
Serial number	Serial number of the test chamber

3 Comments... The text entered in this field appears in the header of the printout

4 Advanced Further information on test

13.3.8 Analysis

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

- Press the button and assign a range that is to be analysed.
- Select »Homogeneity, regulation« in the menu »Analysis«.

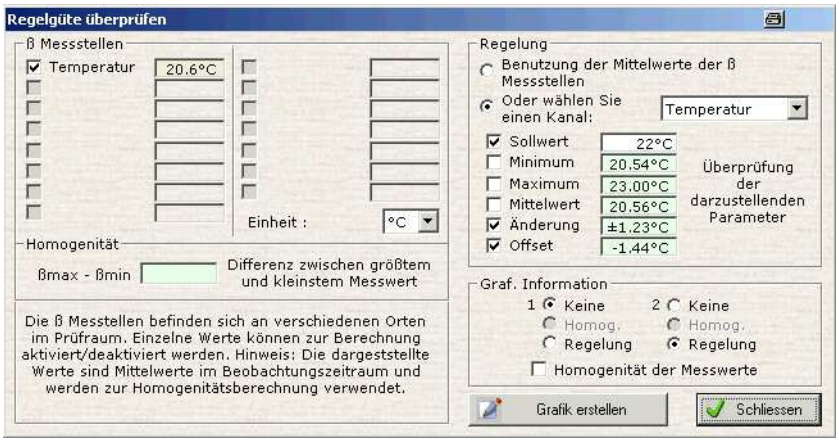


Fig. 13-23: Analysis of homogeneity

- Press the button and assign a range that is to be analysed.
- Select »Modification speed« in the menu »Analysis«.

Fig. 13-24: Average speed

1) Option

13.4 Chamber reports, message list (Simreport)

You can access the menu via the context menu of the chamber.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)* Item 15.

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

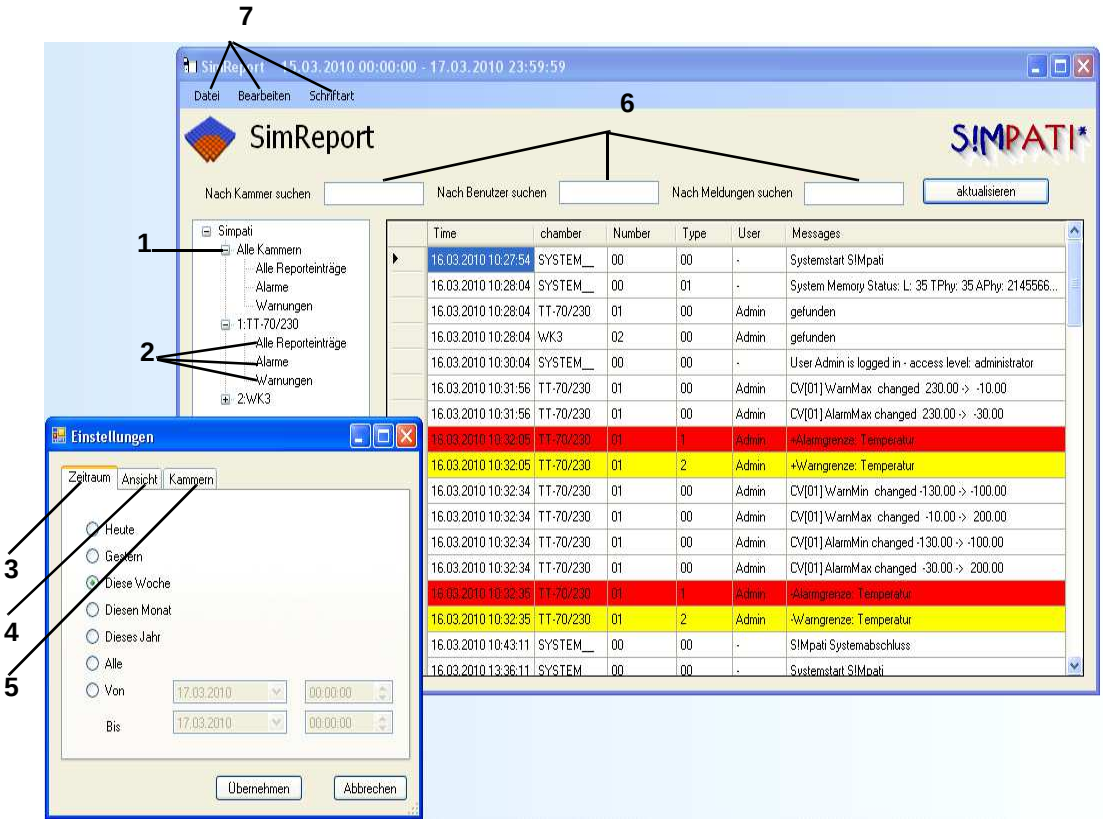


Fig. 13-25: SimReport

1 The warning/alarm/error messages and reports of all or multiple chambers can only be displayed via the context menu of this directory (Item 1).

→ *Fig. 13-25: SimReport (page 165)*

2 Every chamber has 3 selection options:

- Display all report entries
- Display alarms only
- Display warnings only

3 Selection of reports after the creation date (Today, Yesterday, This week, This month, This year, All)

4 Select the display of the following events: warning/alarm/system messages, all messages. The text colour (foreground) and background colour can be defined for this type of message (background).

5 Configure the appearance of the chambers.

6 Messages can be filtered according to chamber, user and messages.

1) Option

7 In the context menu File, messages can be printed, exported to PDF or the program can be cancelled.

Settings can be configured in the context menu Edit.

The font can be configured in the context menu Font.

Zeit	Kammer	Nummer	Typ	Benutzer	Meldung
05.03.2010 08:15:30	SYSTEM__	00	00	-	S!Mpati Systemabschluss
05.03.2010 08:16:07	SYSTEM__	00	00	-	Systemstart S!Mpati
05.03.2010 08:16:17	SYSTEM__	00	01	-	System Memory Status: L: 37 TPhy: 35 APhy: 2145566720
05.03.2010 08:16:17	TT-70/230	01	00	Admin	gefunden
05.03.2010 08:16:17	WK3	02	00	Admin	gefunden
05.03.2010 08:16:17	SYSTEM__	00	00	-	User Admin is logged in - access level: administrator
05.03.2010 08:22:46	SYSTEM__	00	00	-	S!Mpati Systemabschluss
08.03.2010 08:17:20	SYSTEM__	00	00	-	Systemstart S!Mpati
08.03.2010 08:17:31	SYSTEM__	00	01	-	System Memory Status: L: 39 TPhy: 38 APhy: 2145566720
08.03.2010 08:17:31	TT-70/230	01	00	Admin	gefunden
08.03.2010 08:17:31	WK3	02	00	Admin	gefunden
08.03.2010 08:17:40	SYSTEM__	00	00	-	User Admin is logged in - access level: administrator
08.03.2010 08:52:01	SYSTEM__	00	00	-	S!Mpati Systemabschluss
08.03.2010 11:08:30	SYSTEM__	00	00	-	Systemstart S!Mpati
08.03.2010 11:08:40	SYSTEM__	00	01	-	System Memory Status: L: 43 TPhy: 41 APhy: 2145566720
08.03.2010 11:08:40	TT-70/230	01	00	Admin	gefunden
08.03.2010 11:08:40	WK3	02	00	Admin	gefunden
08.03.2010 11:08:41	SYSTEM__	00	00	-	User Admin is logged in - access level: administrator
08.03.2010 11:13:10	SYSTEM__	00	00	-	S!Mpati Systemabschluss
12.03.2010 10:05:30	SYSTEM__	00	00	-	Systemstart S!Mpati
12.03.2010 10:05:40	SYSTEM__	00	01	-	System Memory Status: L: 27 TPhy: 26 APhy: 2145566720
12.03.2010 10:05:40	TT-70/230	01	00	Admin	gefunden
12.03.2010 10:05:40	WK3	02	00	Admin	gefunden
12.03.2010 10:05:55	SYSTEM__	00	00	-	User Admin is logged in - access level: administrator
12.03.2010 10:31:24	TT-70/230	01	02	Admin	Admin : Stop Simulationsprg.TestScheduler
12.03.2010 10:31:51	SYSTEM__	00	00	-	S!Mpati Systemabschluss
16.03.2010 10:27:54	SYSTEM__	00	00	-	Systemstart S!Mpati
16.03.2010 10:28:04	SYSTEM__	00	01	-	System Memory Status: L: 35 TPhy: 35 APhy: 2145566720
16.03.2010 10:28:04	TT-70/230	01	00	Admin	gefunden
16.03.2010 10:28:04	WK3	02	00	Admin	gefunden
16.03.2010 10:30:04	SYSTEM__	00	00	-	User Admin is logged in - access level: administrator
16.03.2010 10:31:56	TT-70/230	01	00	Admin	CV[01] WarnMax changed 230.00 -> -10.00
16.03.2010 10:31:56	TT-70/230	01	00	Admin	CV[01] AlarmMax changed 230.00 -> -30.00
16.03.2010 10:32:05	TT-70/230	01	1	Admin	+Alarmgrenze: Temperatur
16.03.2010 10:32:05	TT-70/230	01	2	Admin	+Warngrenze: Temperatur
16.03.2010 10:32:34	TT-70/230	01	00	Admin	CV[01] WarnMin changed -130.00 -> -100.00
16.03.2010 10:32:34	TT-70/230	01	00	Admin	CV[01] WarnMax changed -10.00 -> 200.00
16.03.2010 10:32:34	TT-70/230	01	00	Admin	CV[01] AlarmMin changed -130.00 -> -100.00
16.03.2010 10:32:34	TT-70/230	01	00	Admin	CV[01] AlarmMax changed -30.00 -> 200.00
16.03.2010 10:32:35	TT-70/230	01	1	Admin	-Alarmgrenze: Temperatur
16.03.2010 10:32:35	TT-70/230	01	2	Admin	-Warngrenze: Temperatur
16.03.2010 10:43:11	SYSTEM__	00	00	-	S!Mpati Systemabschluss

Page 10 of 11

Fig. 13-26: Report entries exported in PDF format

14 AUTOMATIC GENERATION OF E-MAIL MESSAGES IN SIMPATI*

SIMPATI*S!MPATI continuously monitors the error status of every chamber connected. If a change in status 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 start file simpati.str.

98:01:simmailer::
For automatic activation see:

→ *14.4.1 Automatic activation on SIMPATI* startup (page 172)*

SimMailer is opened in the taskbar with the right mouse button and "Show" or a double-click.

Fig. 14-1: SimMailer

1 SimMailer

14.1 Requirements for operation

SMTP server

NOTE
The SMTP server is not a part of the SIMPATI software.*

1) Option

14.2 Configuring messages

To configure, you need to be logged in to SIMPATI* and have the respective SIMPATI* rights. 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).

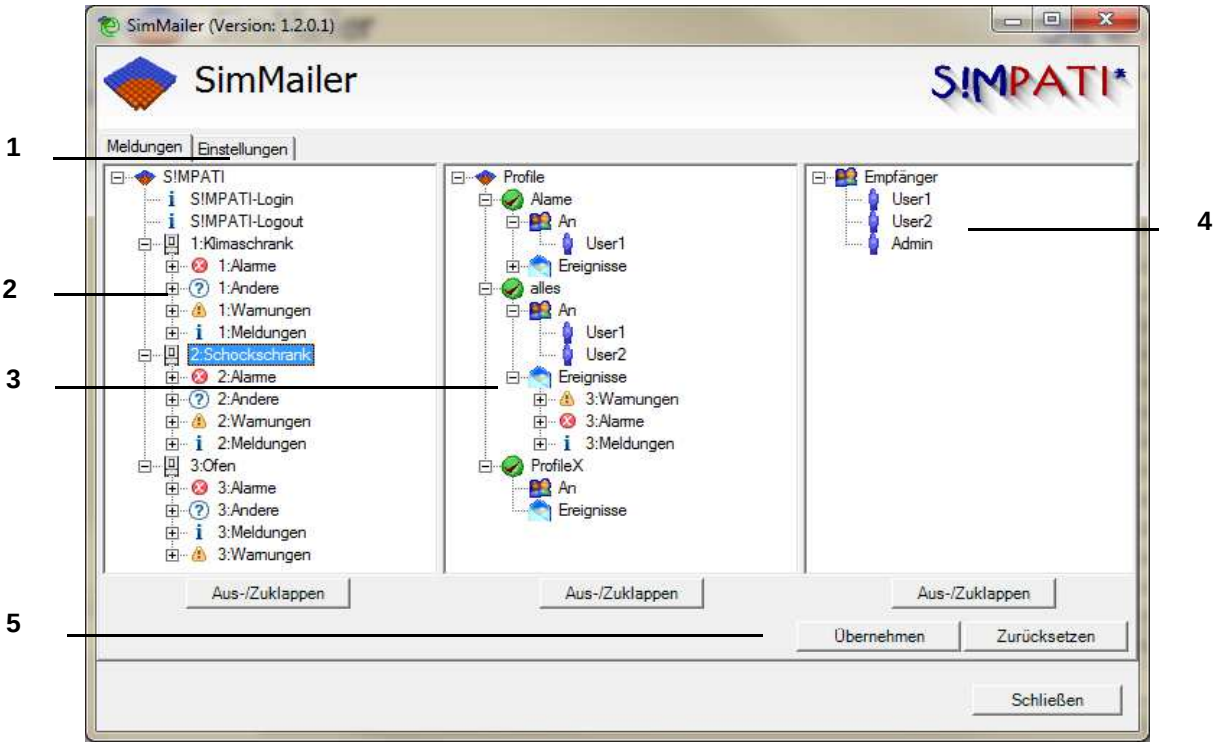


Fig. 14-2: SimMailer basic menu

1 Settings → *14.3 Basic settings (page 171)*

2 Message list: selection of chambers and type of message

3 Here, profiles can be created and configured and which messages are to be sent to which recipients.

4 Recipient list: selection of recipients

5 »Accept« or »Reset« changes

NOTE

Profile features are applied by dragging and dropping the relevant messages and users into the profile.

14.2.1 Configuring a profile

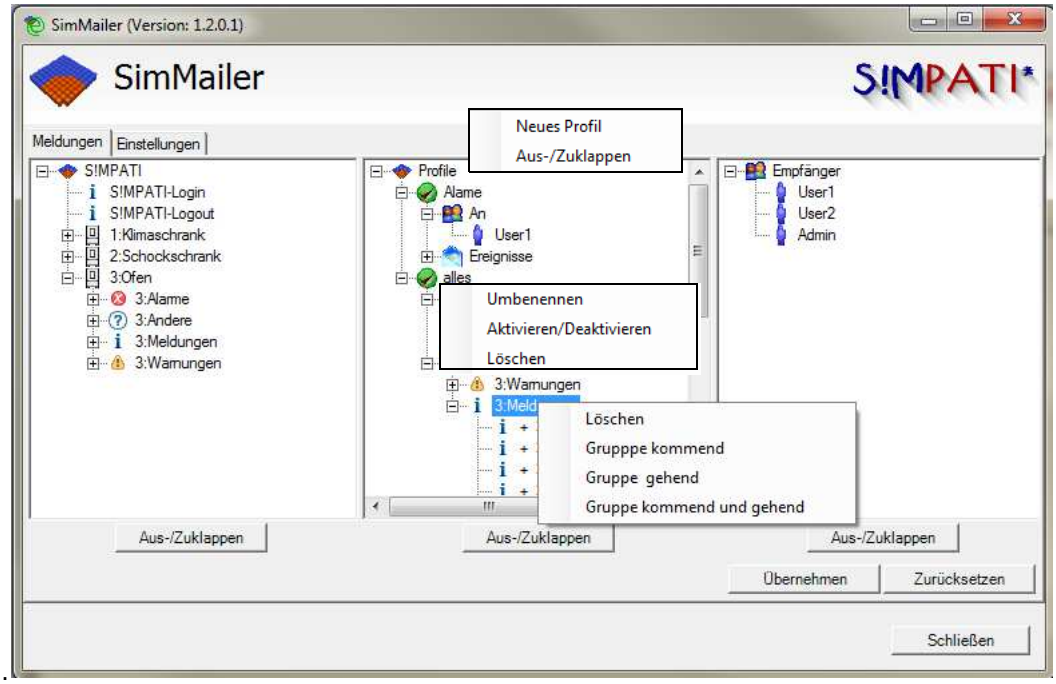


Fig. 14-3: Configuring events

The events can be configured in groups or individually.

incoming	only incoming messages are sent
outgoing	only outgoing messages are sent
incoming and outgoing	all messages are sent

New profiles can be created and deleted; individual profiles can be activated and deactivated. If a profile is deactivated, no messages are sent to this profile.

1) Option

14.2.2 Configuring a recipient

New users can be added by right-clicking on »Recipient«.

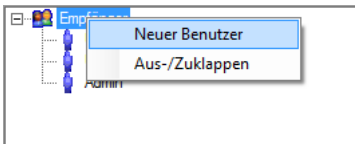


Fig. 14-4: Configuring a recipient

The settings for the recipient can be opened by right-clicking on the particular user.

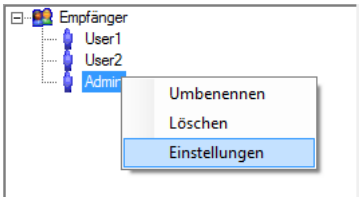


Fig. 14-5: Settings Recipient

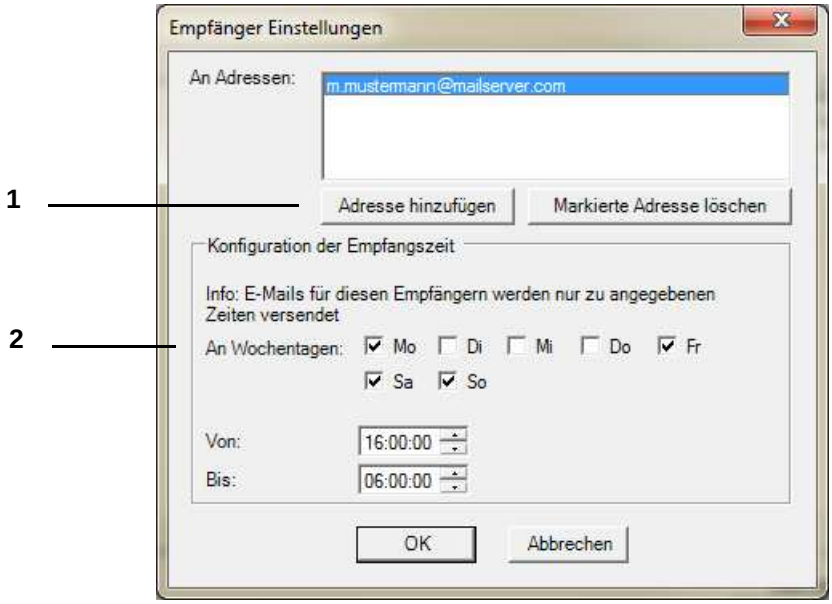


Fig. 14-6: Setting up an e-mail address

1 Inputting an e-mail address
A recipient may have one or several addresses.

2 Configuring the reception time, on which days and at what time the messages should be sent to the above-noted e-mail addresses

1) Option

14.3 Basic settings

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

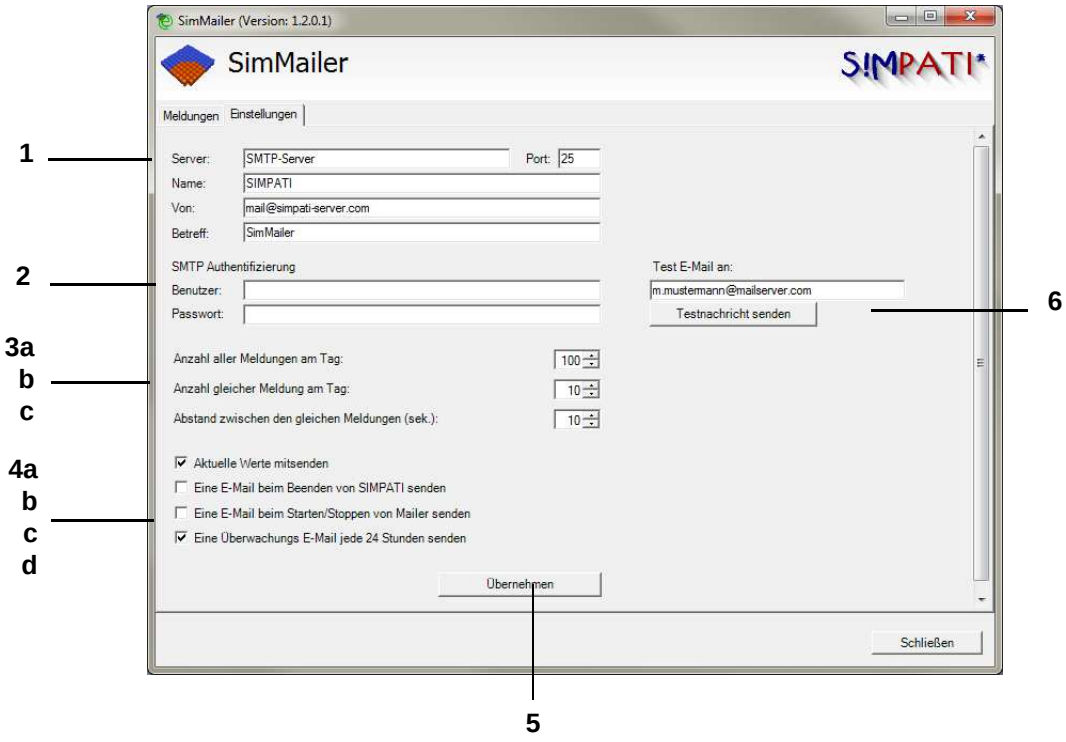


Fig. 14-7: Configuring mail settings

1 Server: name or IP address of the SMTP server
Port: port via which the e-mails are sent

2 SMTP: authentication; if the server does not require authentication, the fields remain empty

3 Setting frequency of messages

a: Total number of messages in a day
To avoid an overload of the server, the maximum number of messages within a 24 hour period can be set.

– b: Number of identical messages within 24 hours (max.)
A message occurring several times will be sent within a 24 hour period only as many times as are set here

– c: Spacing between identical messages (sec)
Time interval between the identical messages; all messages in between them are ignored

1) Option

4 Selecting additional message types

- a: Sending current values
  The current status of the values of the chambers selected is sent
- b: Sending an e-mail when SIMPATI* closes
  If SIMPATI* closes, an e-mail is sent
- c: Sending an e-mail when SimMailer is started/stopped
  An e-mail is sent if SimMailer is started or stopped
- d: Sending a monitoring e-mail every 24 hours
  A collective message with the total number of e-mails sent is sent every 24 hours to every user activated

5 The settings are saved by clicking on »Accept«.

6 The SMTP configuration can be tested via »Send test report«.

14.4 Activating/deactivating SimMailer

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

Fig. 14-8: Activating/deactivating SimMailer

14.4.1 Automatic activation on SIMPATI* startup

To automatically activate the profiles configured on SIMPATI* startup, the following entry must be made in start file simpati.str.

98:01:simmailer:-start:

1) Option

15 MALFUNCTIONS, WARNING MESSAGES/ ALARM MESSAGES/ERROR MESSAGES

The menu for displaying warning messages/alarm messages/error messages is accessed via the context menu of the chamber. → *Fig. 5-1: SIMPATI* Main menu (page 25)*

15.1 Displaying a list of warning messages/alarm messages/error messages

This menu is accessed via the context menu of the chamber or via the single user interface.
→ *Fig. 5-1: SIMPATI* Main menu (page 25)*

Two different lists of messages can be displayed:

– all current warning messages/alarm messages/error messages (→ Fig.)

– all messages configured for this chamber

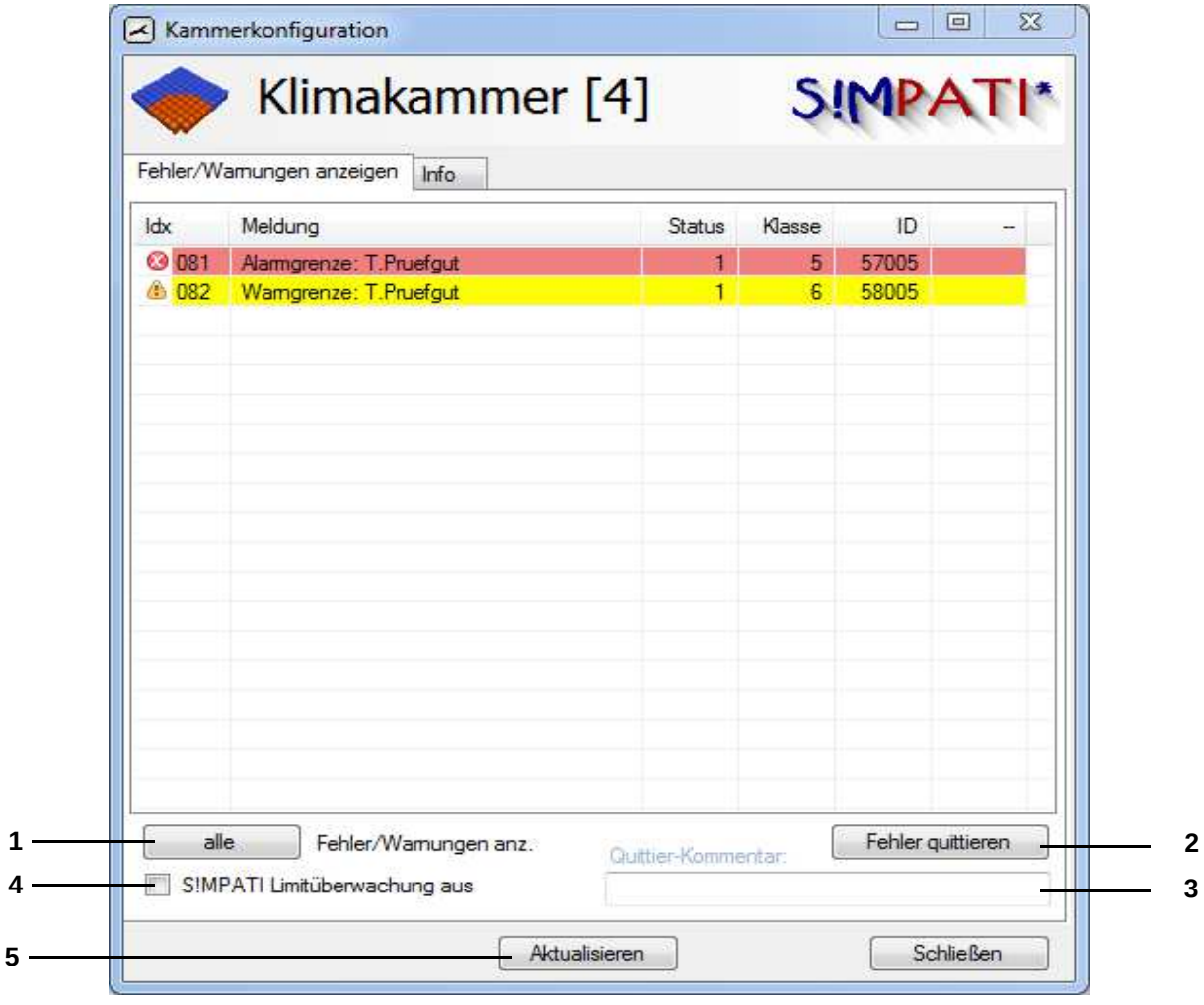


Fig. 15-1: Display current warning messages/alarm messages/error messages

1) Option

Displaying a list of warning messages/alarm messages/error messages

1 Using this button you can switch between the message lists

In the list containing all of the warning messages/alarm messages/error 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 Comment about acknowledging the error in the overall list of messages.

4 Using the checkbox you deactivate SIMPATI* limit monitoring for warnings and alarms. The checkbox can be activated only if you have "Change alarms/warnings“ permission.

NOTE

If SIMPATI limit monitoring is disabled (box is checked), entries for warning and alarm reports are not generated. System faults continue to be monitored. If function "21.CFR Part 11" is active, the checkbox is hidden.*

5 Update the view.

NOTE

Messages originating in the chamber have to be acknowledged after the cause is corrected, first at the chamber and then in SIMPATI.*

A description of the error messages that originate from the chamber controller can be found in the operating manual for the chamber.

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 number on the terminal is 1 digit smaller than the address number 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 number on the terminal is 1 digit smaller than the address number 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*	

1) Option

3 CHAMBERS WITH A MINCON/SIMCON CONTROLLER

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

To check the settings of the interface parameters, press this icon in the basic menu, then the following menu appears:

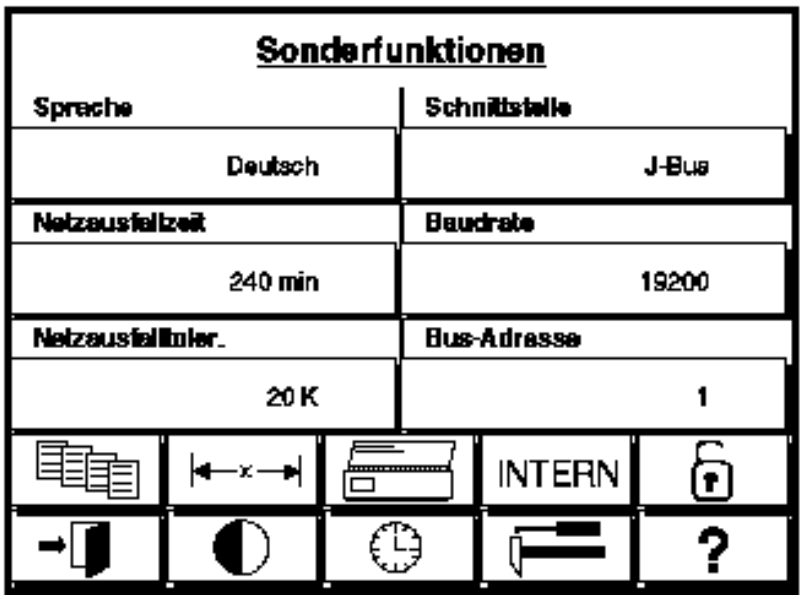


Fig. 3-1: Special functions

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.

1) Option

4 CHAMBERS WITH A SIMPAC CONTROLLER

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 switchgear 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« mode at the factory.
- Follow the instructions

  → *Appendix: Connecting cable pin assignment (page 181)*
  → *4 RS 232 interface for Mincon/Simcon/Simpac and DMR controllers (page 182)*

1) Option

1) Option

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

To use the type 8990-6C data logger with checksum in conjunction with SIMPATI*, proceed according to the following steps:

1 CONNECTING 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 make sure that this COM port is permanently available for SIMPATI and that no other applications access it.*

2 CONFIGURING THE START FILE

To enable communication, the SIMPATI*.str file in the ..\simpati\system directory needs to be extended by inputting:

30:01:simwutdata::

As an alternative, the SIMPATI*.str file in the ..\simpati\system directory on the configuration diskette can be copied to the ..\simpati\system directory on the hard drive. Before copying the SIMPATI*.str file, please make sure that SIMPATI* is closed because 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 file, please call our Hotline for assistance.*

→ *1.7 Online help and operating manual (page 3)*

3 PREPARING THE CONFIGURATION FILE

The configuration file is made available through our Hotline.
→ *1.7 Online help and operating manual (page 3)*

Copy configuration file SIMPATI*.cxx from the configuration diskette to the simpati\INIT directory. In the \simpati\INIT directory, please change the file extension from .cxx to match the appropriate chamber number, e.g. if the data logger is the second device supported by SIMPATI*, the extension should be changed to c02.

4 RESTARTING SIMPATI*

Quit SIMPATI* and restart SIMPATI*.

5 CHECKING THE INSTALLATION

After SIMPATI* is restarted, the taskbar incudes the entry simwutdata.exe.

1) Option

APPENDIX: CONNECTING CABLE PIN ASSIGNMENT

The pin assignment for the various other cables can be found in chapter → *3.9 (page 18)*.

1 ETHERNET INTERFACE FOR SIMCON AND SIMPAC CONTROLLERS

For connection to the network you will need 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

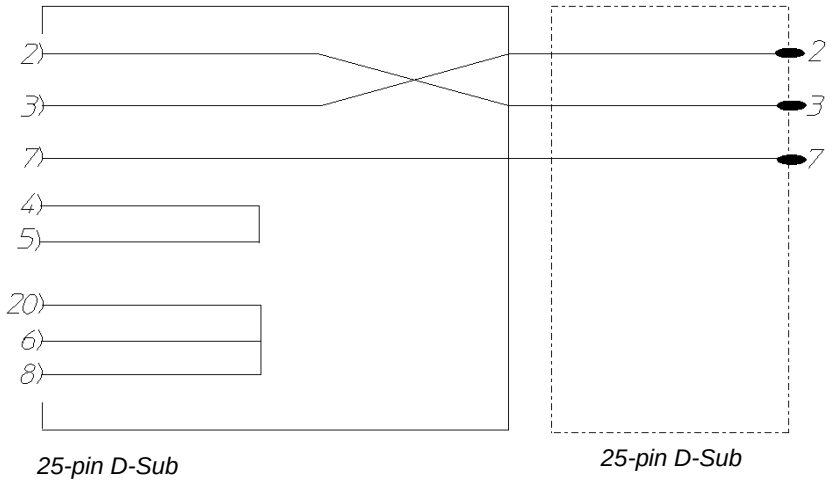


Fig. 2-1: Pin assignment for RS 232 interface cable 25/25 pole for CTC/TC and MOPS controllers

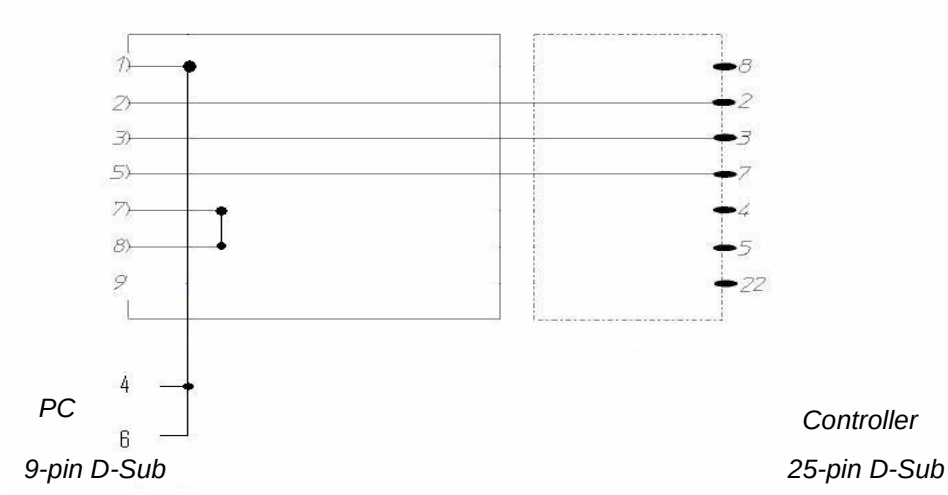


Fig. 2-2: Pin assignment for RS 232 interface cable 9/25 pole for CTC/TC and MOPS controllers

3 RS 485 INTERFACE FOR CTC/TC AND MOPS CONTROLLERS

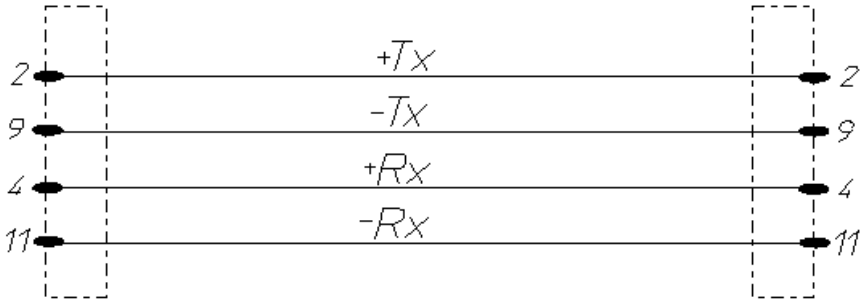


Fig. 3-1: Pin assignment for RS 485 interface cable for CTC/TC and MOPS controllers

4 RS 232 INTERFACE FOR MINCON/SIMCON/SIMPAC AND DMR CONTROLLERS

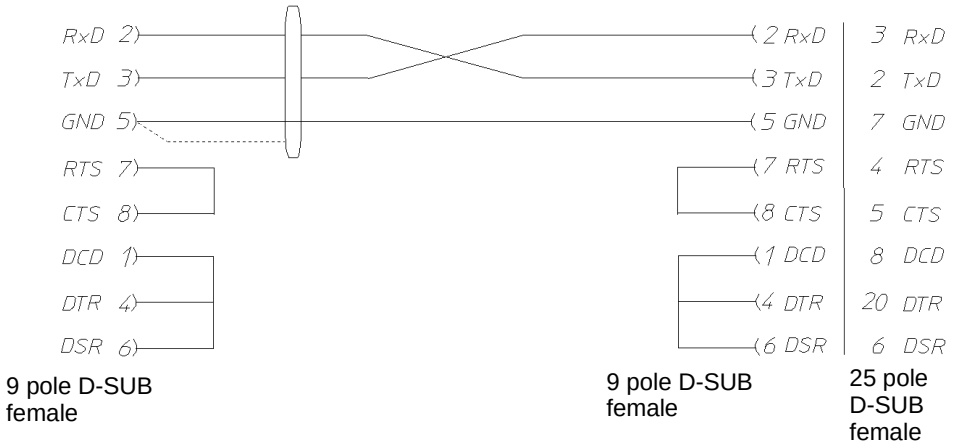


Fig. 4-1: Pin assignment for RS 232 interface cable for Mincon/Simcon/Simpac and DMR controllers

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.

1) Option

5 RS 485 INTERFACE CABLE FOR MINCON/SIMCON AND DMR CONTROLLERS

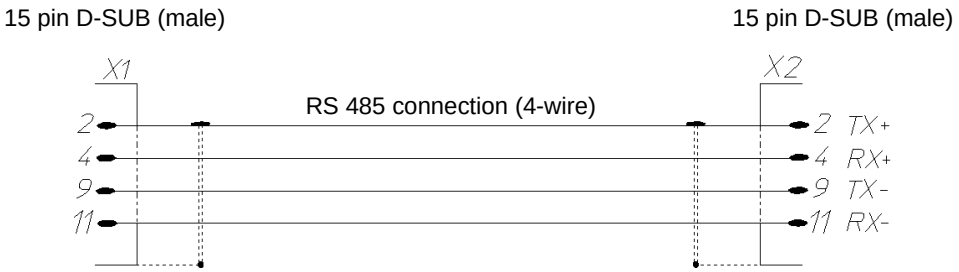


Fig. 5-1: Pin assignment for RS 485 interface cable for Mincon/Simcon and DMR controllers

Bond the shielding expansively to each cable housing.

6 RS 485 INTERFACE CABLE FOR DICON 50X/100X CONTROLLERS AND IMAGO 500

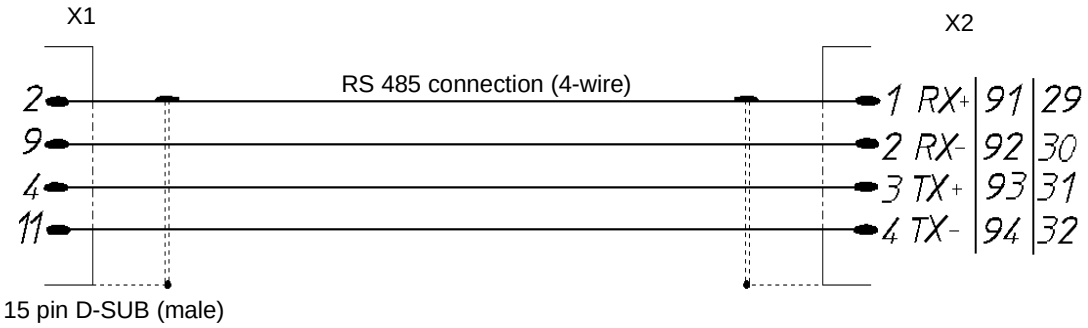


Fig. 6-1: Pin assignment for RS 485 interface cable for Dicon 50x/100x controllers and Imago 500

7 RS 485 AND RS 232 INTERFACE CABLES FOR DICON SM

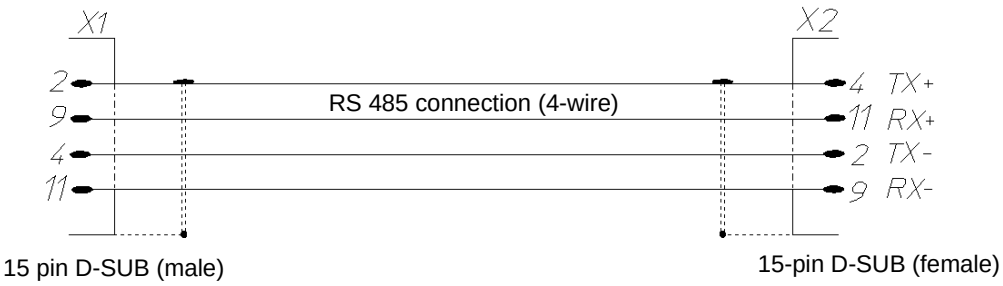


Fig. 7-1: Pin assignment for RS 485 interface cable for Prodicon Plus and SBC controllers

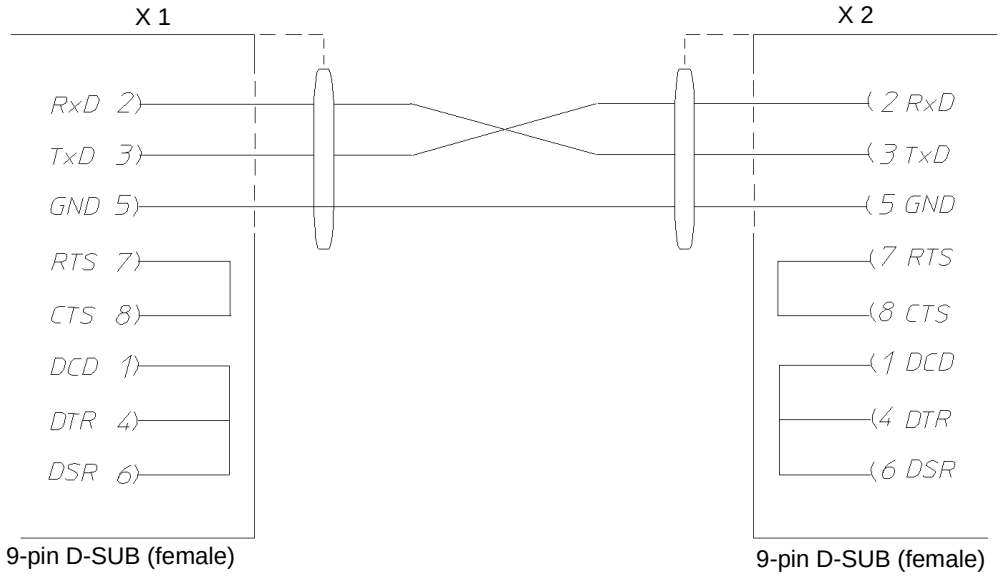


Fig. 7-2: Pin assignment for RS 232 interface cable for Prodicon Plus and SBC controllers

1) Option

8 RS 232 INTERFACE CABLE FOR 2/3-CHANNEL PROCESS INTERFACE

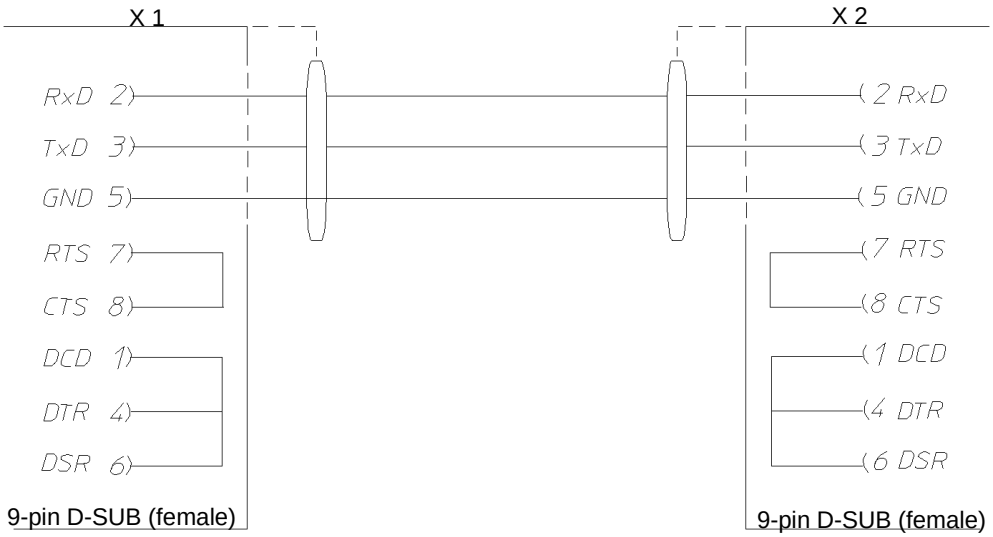


Fig. 8-1: Pin assignment for 232 interface cable for 2/3-channel process interface

9 RS 232 INTERFACE CABLE FOR DICON PRS CONTROLLERS

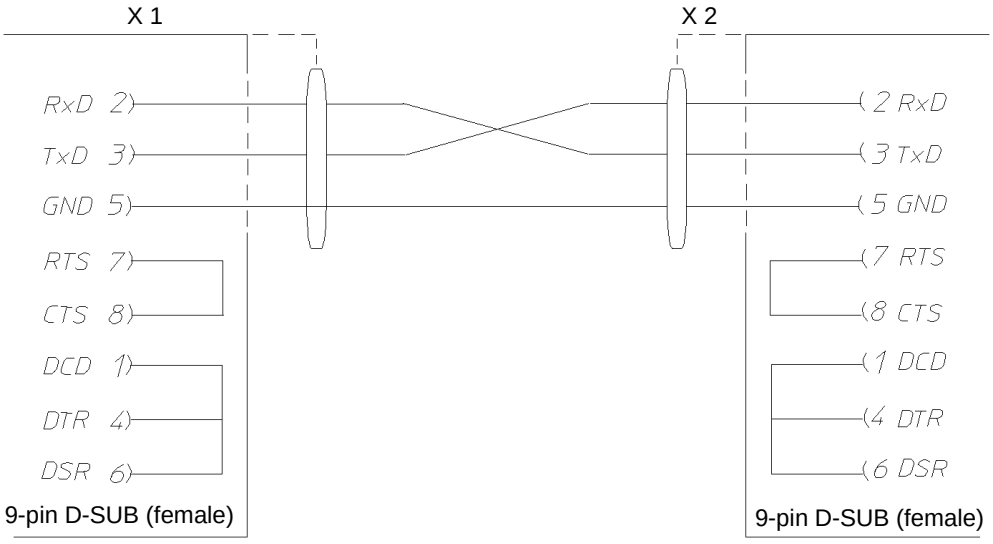


Fig. 9-1: Pin assignment for RS 232 interface cable for Dicon PRS controllers

1) Option

10 RS 485 INTERFACE CABLE FOR ANAPROG CONTROLLERS

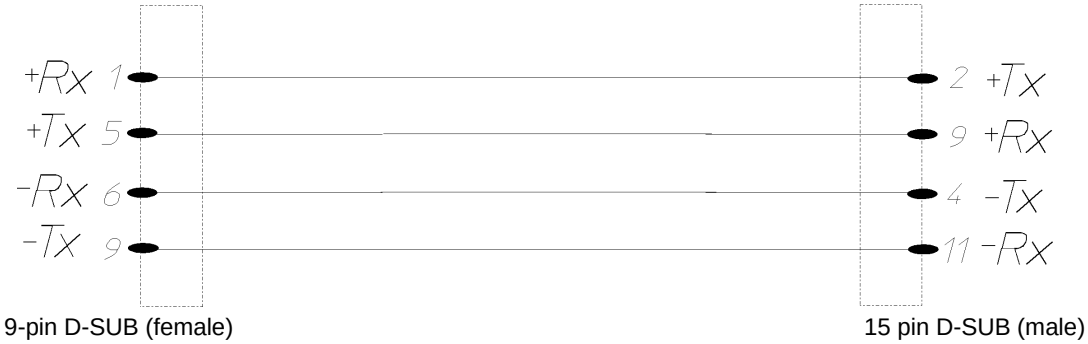


Fig. 10-1: Pin assignment for RS 485 interface cable for Anaprog controllers

11 RS 232 INTERFACE CABLE FOR ZPG 2000/ZPR 2000 CONTROLLERS

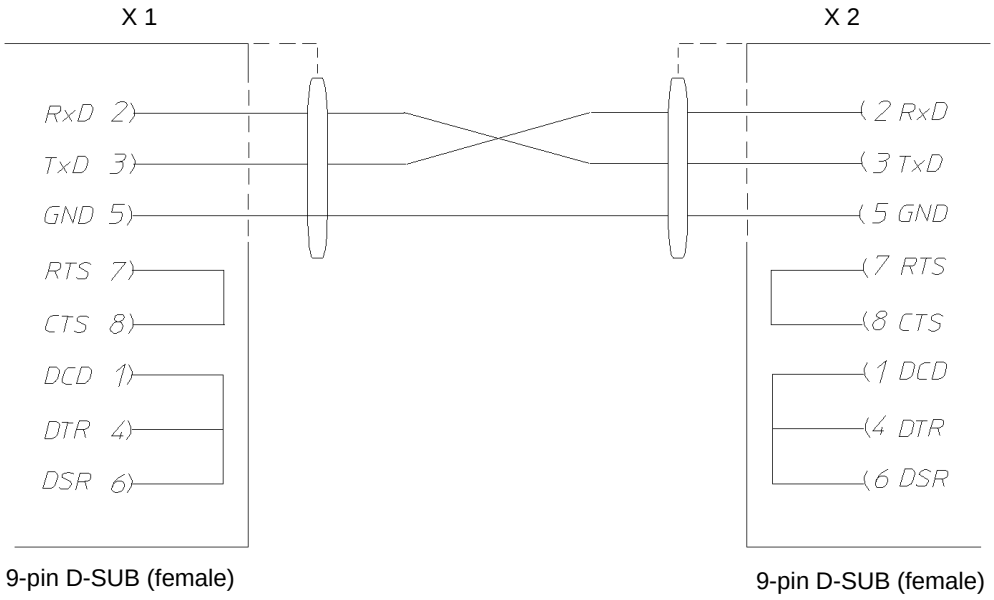


Fig. 11-1: Pin assignment for RS 232 interface cable for ZPG 2000/ZPR 2000 controllers

1) Option

12 RS 485 INTERFACE CABLE FOR TESTA FID 2000 MP

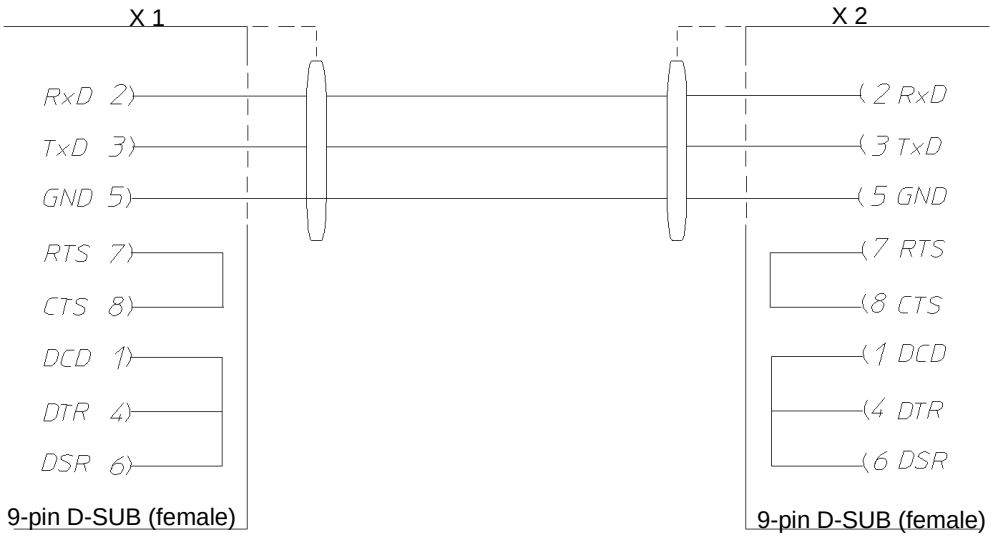


Fig. 12-1: Pin assignment for 232 interface cable for 2/3-channel process interface

1) Option

1) Option

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 (Item 1) to be uploaded to the chamber controller of this or a compatible chamber.

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

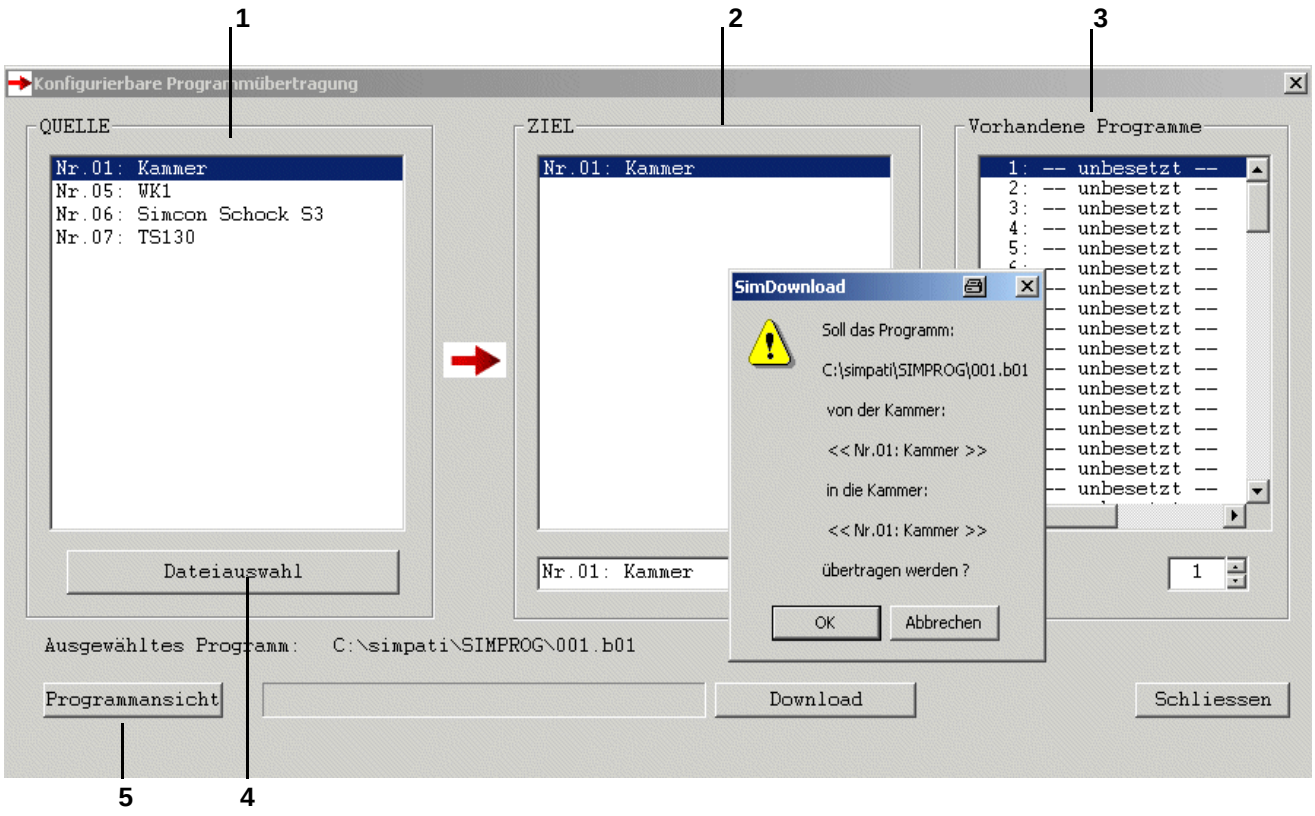


Fig. 0-1: Main menu SimDownload

1 All chambers with a Simcon, Simpac or Mincon controller are shown.

2 Only chambers that are compatible with the selected source chamber are shown here.

3 The test programs that are saved in the selected target chamber are shown here. Select the program number under which the test program should be saved.

4 Select the test program that is to be uploaded to a chamber controller.

5 The symbolic editor opens. You can view the test program again.

1) Option

1) Option

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 PREREQUISITES

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 simhttp.exe web server automatically generates html pages that can be loaded from any location on the network. This web server must be running. It is located in the ..\simpati\system\ directory.

  – -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 file »simhttp.exe«.

Automatic start?

To start the HTTP server with SIMPATI*, make the following entry in 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
#
```

Fig. 2-1: Example of file »Simpati.str«

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

1) Option

NOTE

The http server does not support any 64-bit Java version!
Therefore, depending on the operating system and the Java version used, problems can occur when displaying the SIMPATI http server: The http server is not started or the website is not displayed in the browser.*
In this case it is necessary to install as Java 32-bit version in the main partition of the computer (usually "C:\") and to start the http server with path specification.

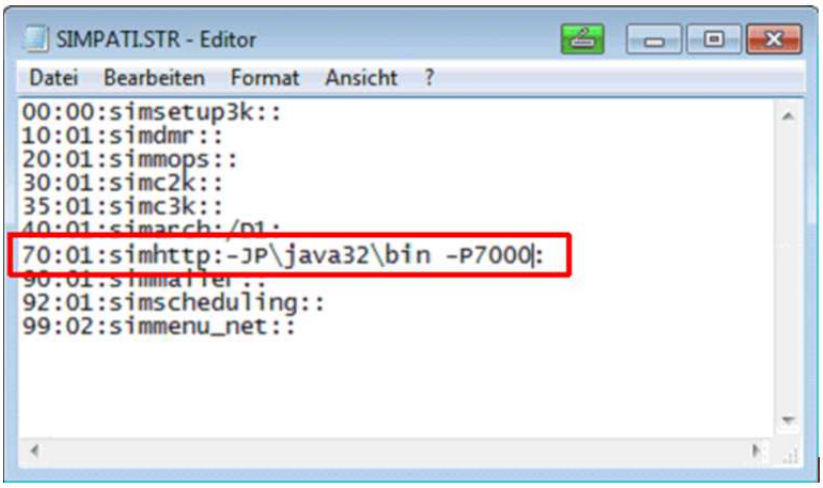


Fig. 2-2: simpati.str file

NOTE

The Java version must not update itself automatically!

3 ACCESSING SIMPATI*

Enter the IP address or the hostname (with specification of the URL) of the SIMPATI* PC. For instance, this may appear as follows:

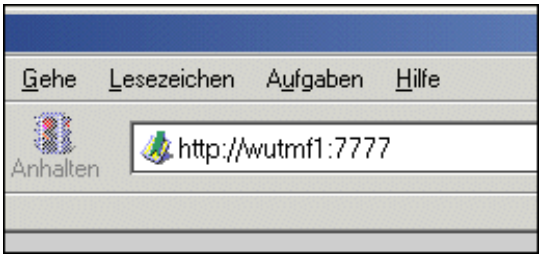


Fig. 3-1: Example SIMPATI PC address (here Netscape 6)*

http:// - protocol (therefore also the name of the server)

wutmf1 or 192.168.1.12 - hostname or IP address of the SIMPATI* PC

:7777 - default port on the server which awaits queries from the client

The HTML page is now automatically generated and updated.

1) Option

4 HTTP SERVER INTERFACE

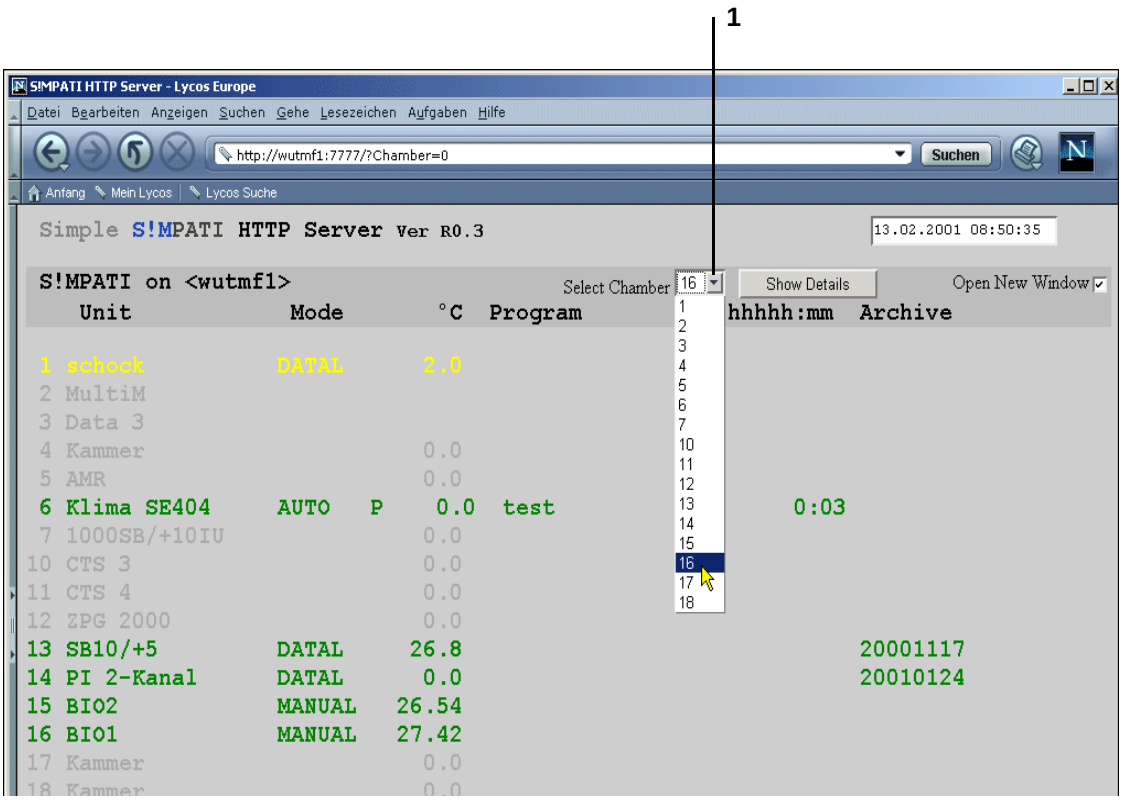


Fig. 4-1: Server interface

1) Option

Select the chamber needed from the list under Item 1 and you get the status display.

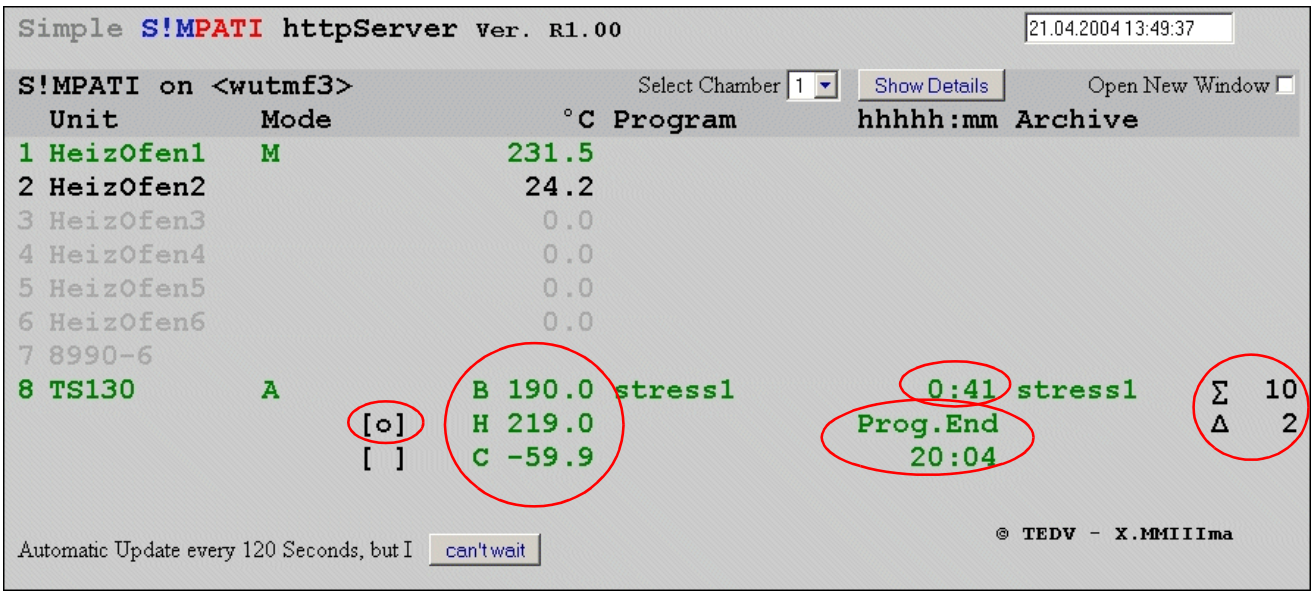


Fig. 4-2: Example: Interface for a shock chamber

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:	Time elapsed since the start of the test
Prog. end 20:04:	The test is expected to end at this time (if necessary with date specification). This is an average value calculated from the duration and the number of cycles elapsed and the cycles yet remaining.
∑ 10:	There are 10 cycles remaining which still need to be processed.
Δ 2:	2 cycles have elapsed.

1) Option

APPENDIX: SIMPATI* WEB SOFTWARE[1)]

The SIMPATI* web application enables the following activities:

– Information queries of chamber status or chamber configuration, for instance

– Starting or stopping tests in manual and automatic/program mode, i.e. changing control 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 change 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 directory ..\netframe\.

The following software can be useful for function tests:

– Microsoft Internet-Explorer 1.0 / Mozilla Firefox 1.1.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 SIMPATI* web application must have sdministrator rights.

1.2 Client requirements

Internet browser

– Microsoft Internet Explorer 1.0 / Mozilla Firefox 1.1.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) Option

1.3 Installation

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

Installation protocols

The installation protocol can be found in 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 SIMPATI* web application:

– Open: Manager / Computer Manager / Services and Applications / Internet Information Services and the web application (»SimpatiWeb«) installed 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 SIMPATI* → *1.2 Client requirements (page 195)* 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

1) Option

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 SIMPATI* web application can be started in the browser:

Server: http(s)://localhost/SimpatiWeb

Client: http(s)://IP_ADRESSE_SERVER/SimpatiWeb

Server / page certificate

The security configuration in the SIMPATI* web application can be expanded by an encrypted transmission of confidential data. This would be passwords or user rights that authorise the user for certain actions on 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 SIMPATI* WEB LOGIN

Once the SIMPATI* web home page has been called, a login form appears.

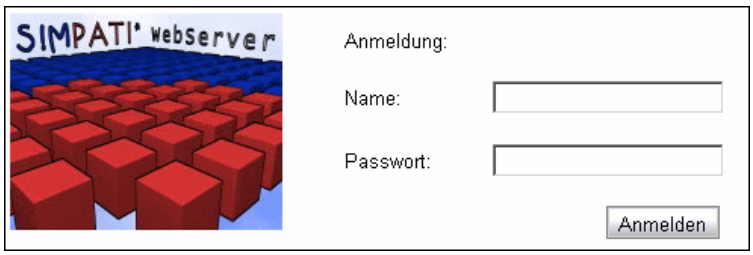


Fig. 2-1: SIMPATI web login*

The login requires the name and password of a valid SIMPATI* user.

→ *Fig. 4-2: Password (page 24)*.

Potential causes of a login failure:

– Incorrect user name/password

– User has been deactivated in SIMPATI*

→ *5.5 User administration (page 31)*

– SIMPATI* has not been started on the server

– SIMPATI* is running on the server in the wrong context, i.e. SIMPATI* is not executed by the SimpatiUser.

1) Option

3 LOGOUT IN SIMPATI* WEB

DANGER

The user must log out correctly to ensure that the SIMPATI web software runs error-free and to prevent unauthorised manipulation of the chambers. Once the user has completed his work, he must log out using the logout*

→ *Fig. 4-1: SIMPATI* web main menu (page 199)*

button.

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

After closing SIMPATI*, it is also important to terminate the SIMPATI* web 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.

1) Option

4 MAIN MENU IN THE SIMPATI* WEB

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 be assigned specifically for this user.

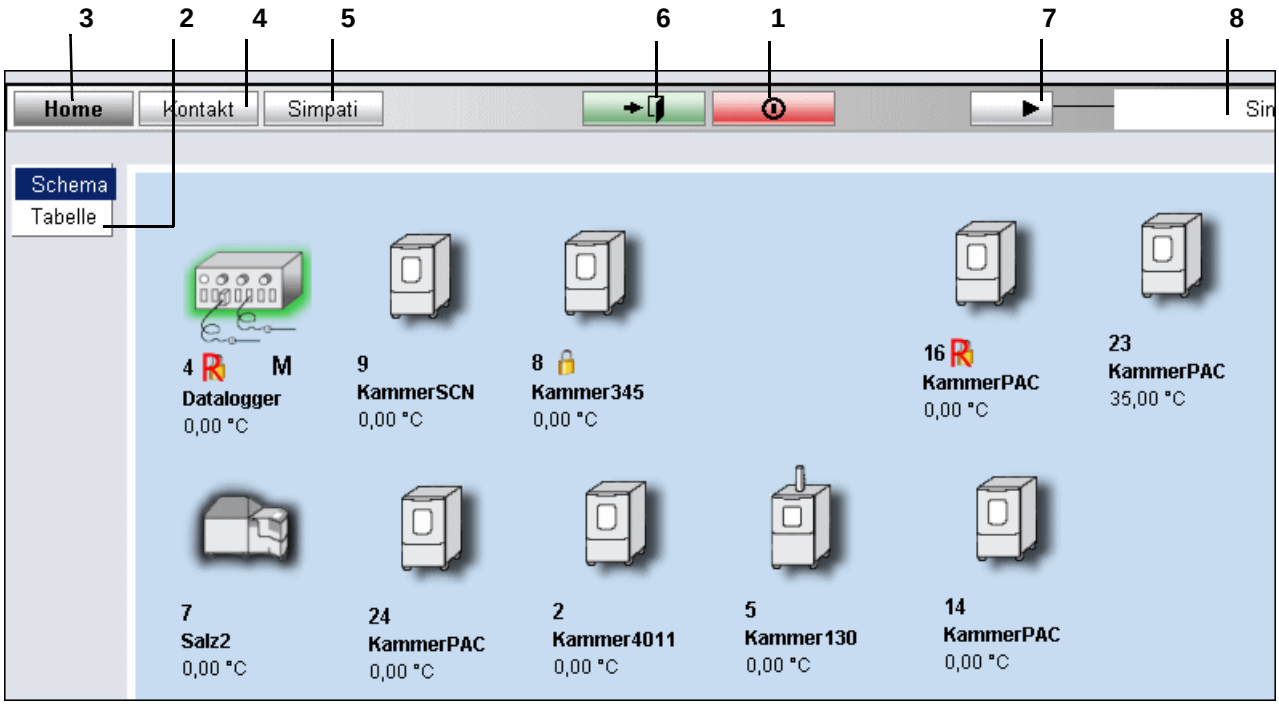


Fig. 4-1: SIMPATI web main menu*

1 Logout button

2 Toggle between tabular

→ *4.3 Tabular view (page 200)*

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

8 Name of the user who is currently logged in

The chambers are identified with the symbols according to the chamber or processing status.

1) Option

4.2 Changing the background image

You can change the background for the SIMPATI* web application as follows. To do this, you will need to have access to the directories on the SIMPATI* web server.

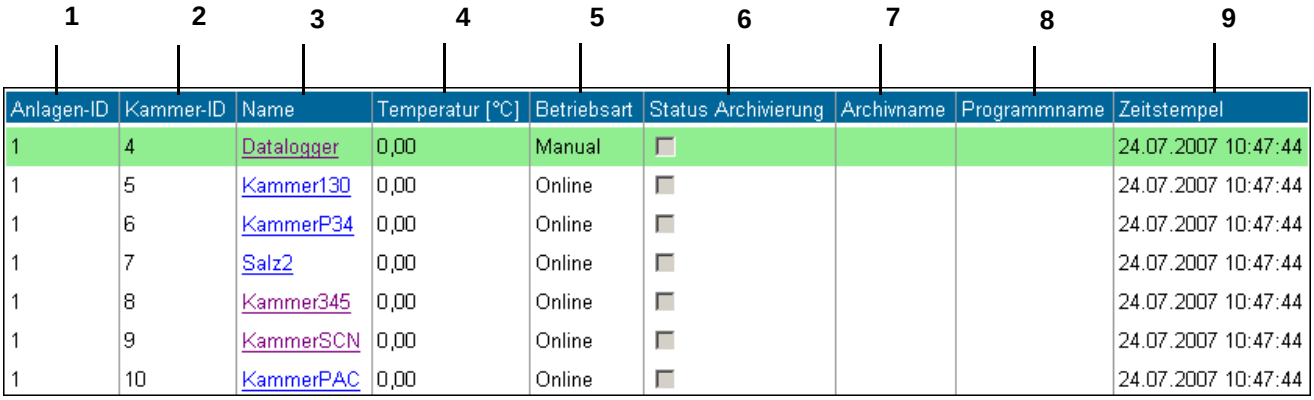
The default directory path is ..\Inetpub\wwwroot\SimpatiWeb.

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

We recommend you use the same background image as in SIMPATI*.

4.3 Tabular view

Alternatively, you may display the chambers in table form.



Anlagen-ID	Kammer-ID	Name	Temperatur [°C]	Betriebsart	Status Archivierung	Archivname	Programmname	Zeitstempel
1	4	Datalogger	0,00	Manual	☐			24.07.2007 10:47:44
1	5	Kammer130	0,00	Online	☐			24.07.2007 10:47:44
1	6	KammerP34	0,00	Online	☐			24.07.2007 10:47:44
1	7	Salz2	0,00	Online	☐			24.07.2007 10:47:44
1	8	Kammer345	0,00	Online	☐			24.07.2007 10:47:44
1	9	KammerSCN	0,00	Online	☐			24.07.2007 10:47:44
1	10	KammerPAC	0,00	Online	☐			24.07.2007 10:47:44

Fig. 4-4: SIMPATI web tabular 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 is running
yellow	Warning signal
red	Alarm signal

1) Option

4.5 Chamber operation

NOTE

Remember that the data in the SIMPATI web application are queried and displayed with a time delay or at appropriate intervals.*

You get to the chamber operation menu by clicking the chamber symbol or the chamber name in the table

→ *Fig. 4-4: SIMPATI* web tabular view (page 200)* Item 3.

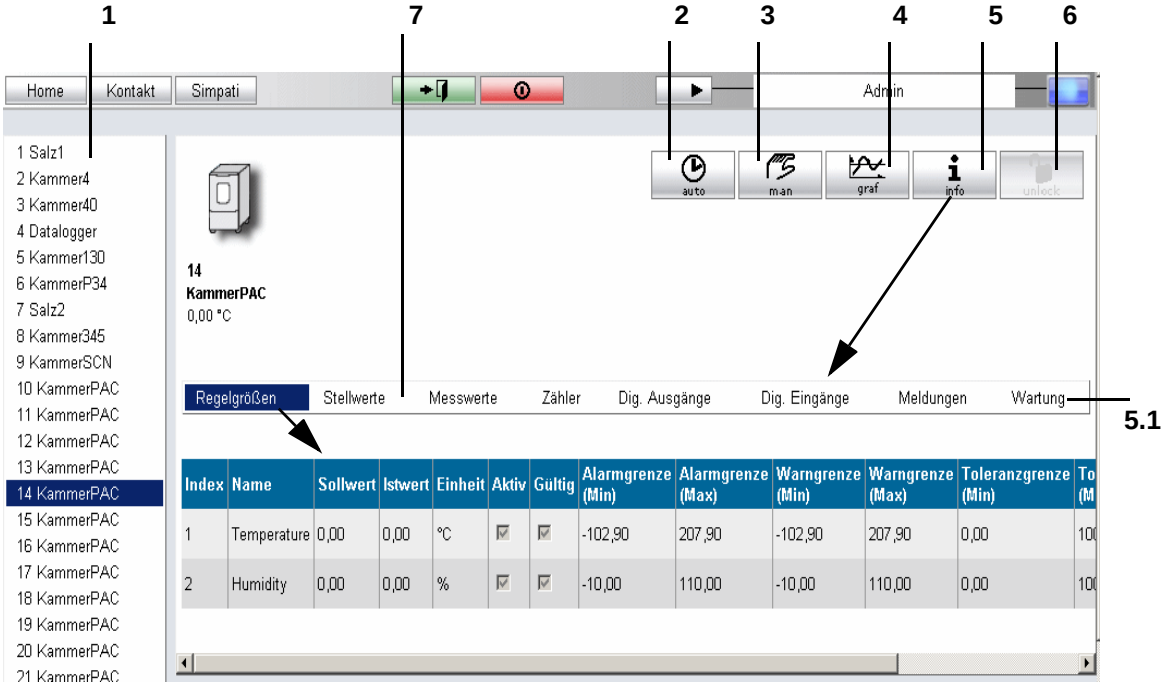


Fig. 4-6: SIMPATI web chamber information*

1 Chamber selection

2 Navigates to the automatic/program mode page → *4.9 Automatic/program mode*

3 Navigates to the manual mode page → *4.7 Manual mode*

4 Navigates to the line graph display → *4.11 Generating line graphs*

5 Chamber information → *4.14 Chamber information*

→ *Fig. 4-6: SIMPATI* web chamber information* enables you to display parameter information (control variables, setpoints, measurement values, counters, digital outputs, digital inputs, messages).

→ *Maintenance documentation*

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 SIMPATI* User Manager.

4.7 Manual mode

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

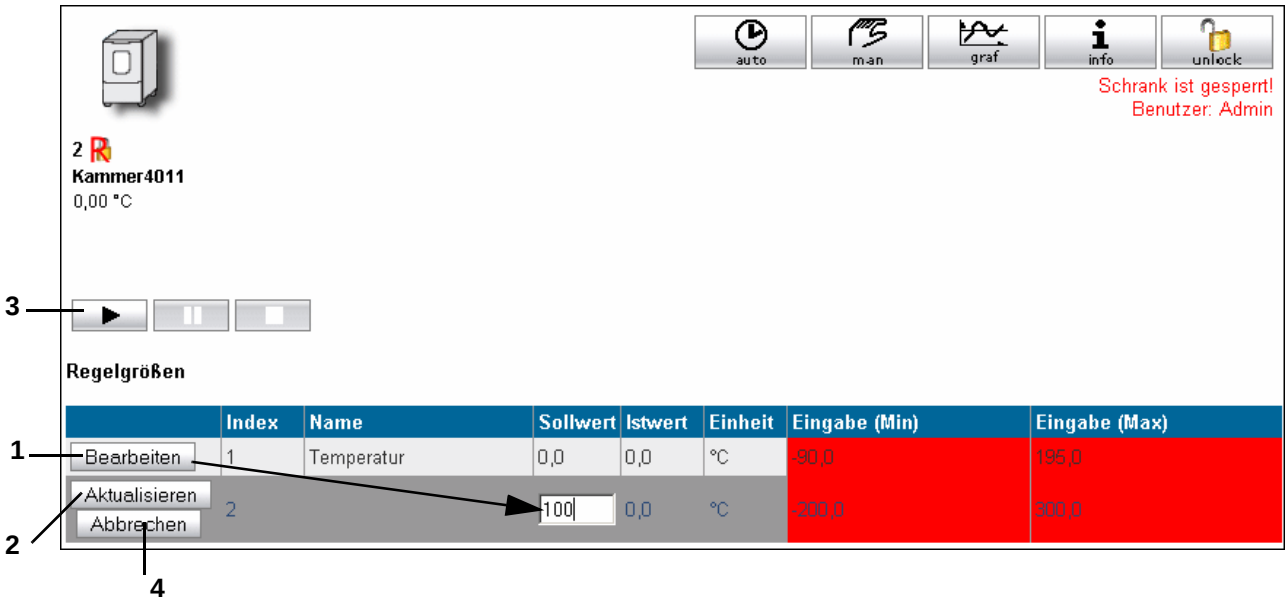


Fig. 4-8: SIMPATI web manual mode*

1 Editing values

The input limits have a red background.

2 Storing values and updating the view

3 Starting/stopping a test

The test can also be started/stopped via digital channel 1.

4 Cancelling input

Save the new value via.

→ *Fig. 4-8: SIMPATI* web manual mode (page 202)*

1) Option

4.9 Automatic/program mode

When changing 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 125)*.

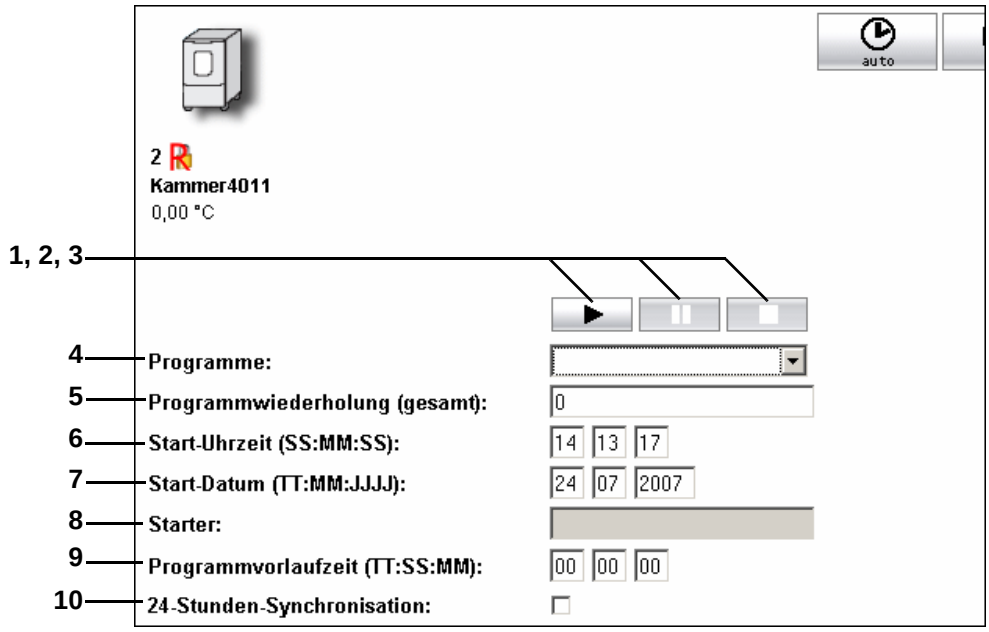


Fig. 4-10: SIMPATI web automatic/program mode*

1 Test program start
2 Test program pause
3 Test program 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

→ *11 Starting/stopping a test program (page 125)* Item 11.

1) Option

4.11 Generating line graphs

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

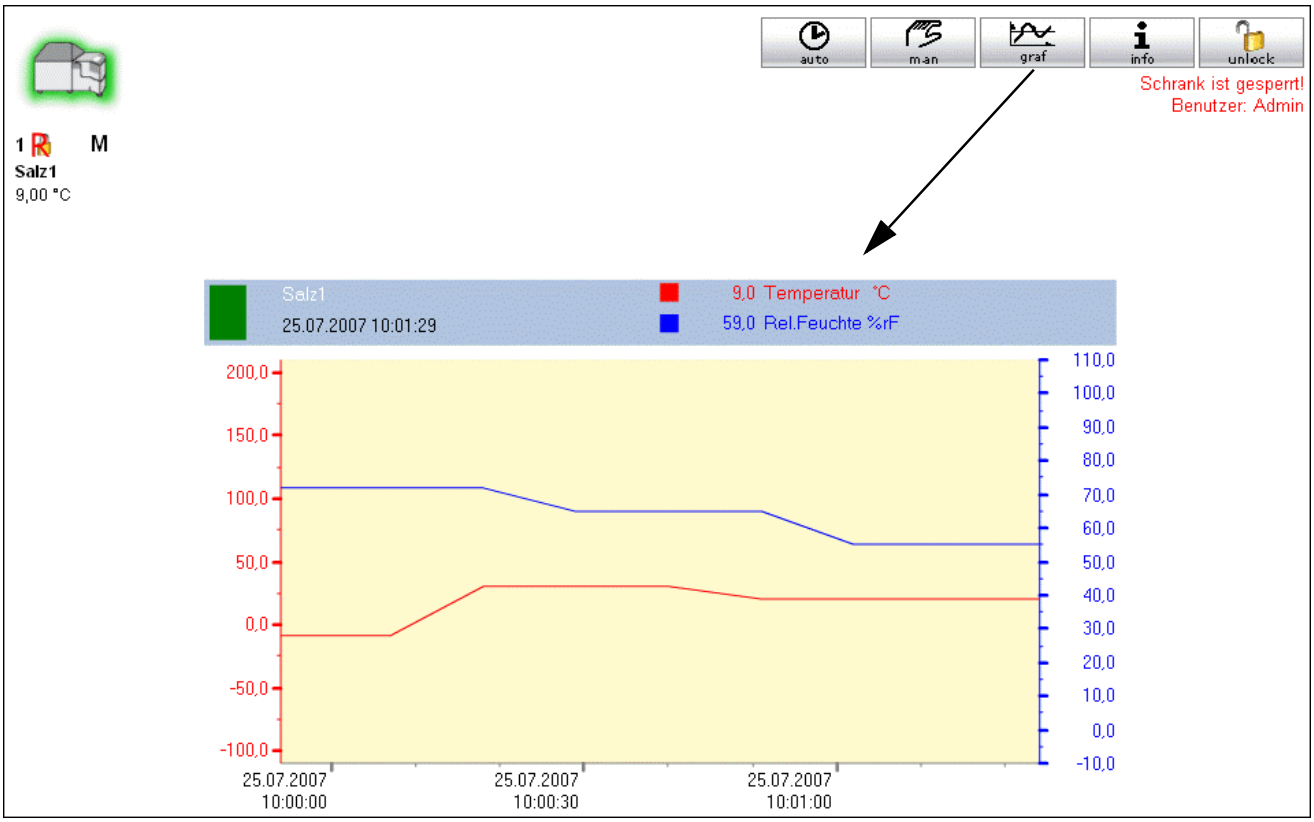


Fig. 4-12: Line graph

→ *4.13 Starting the line graph with SIMPATI* simultaneously (page 205)*

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.

1) Option

4.13 Starting the line graph with SIMPATI* simultaneously

To start SimFlashGraph and SIMPATI* simultaneously, the file ..\simpati\system\simpati.str must be expanded accordingly.

If the SimFlashGraph is started without parameters (i.e. here without a chamber number), then this program will generate a line graph for all chambers.

Example: 60:01:SimFlashGraph:

With a large number of chambers this can result in delays in data acquisition and therefore cause 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).

4.14 Chamber information

Maintenance documentation

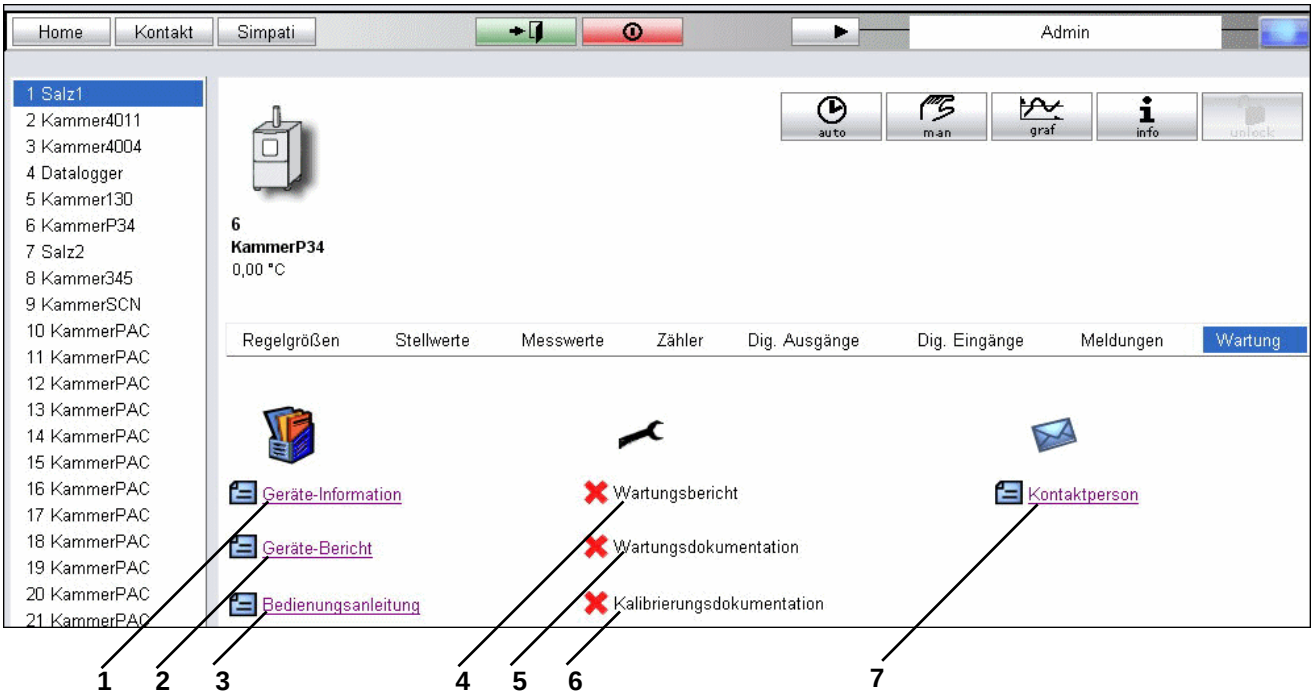


Fig. 4-15: SIMPATI web maintenance*

The document is saved with the correct name on the server; the link is active

The document is 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 that was created using any editor following the last servicing, required name: maintenance.txt

5 General maintenance documentation, required name: maintenance.pdf

6 Calibration certificate for the chamber, required name: calibration.pdf

7 Contact information for service personnel, required name: internal_contract.pdf

1) Option

Storage of the documents on the server:

The documents are saved as follows in the SIMPATI* web application directory according to the chamber numbers assigned.

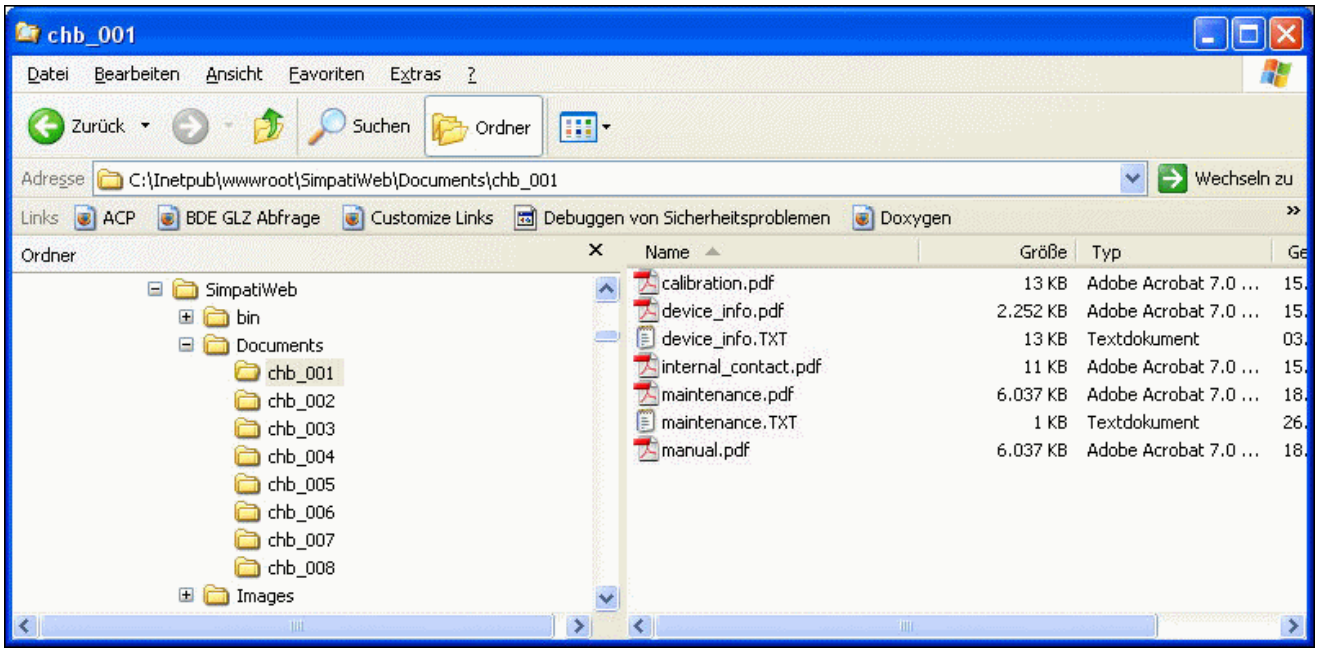


Fig. 4-16: Storage of the documents

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

1) Option

1) Option

APPENDIX: ETHERNET INTERFACE

The Ethernet interface is intended solely for use with the SIMPATI* software package.

NOTE

If SIMPATI networking is implemented on the LAN, it must be assured that no conflicts arise with other network users when applying the communication paths and addresses (e.g. double connections). We strongly recommend that you have your network administrator set up the network!*

CAUTION

Improper configuration may adversely affect network operation even outside the SIMPATI network.*

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 on 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 reading in and starting the driver, the appropriate port also has to be entered.

2 MAKING THE NETWORK CONNECTIONS

- Connect the controller to the nearest hub or switch intended for this purpose using a suitable network cable.

3 CHECKING THE NETWORK CONNECTION TO THE PC

- Make sure that the PC designated 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 Example of networking two chambers via Ethernet (page 211)*

  If the test was successful, the chamber configuration can be read in the next step.

1) Option

4 READING THE CONFIGURATION FILE »SCANNING«

- Make sure that SIMPATI* has not been started.
- Start the scanning process in the ..\simpati\system directory 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 Example of networking two chambers via Ethernet → Reading the configuration file »Scanning« (page 212)*

  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.

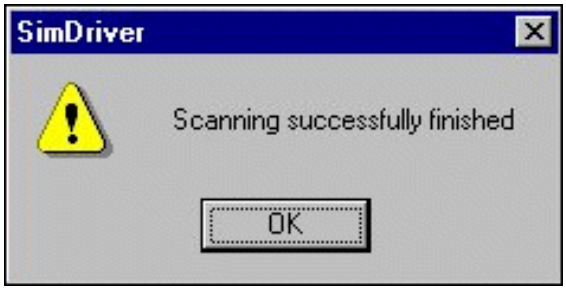


Fig. 4-1: Readout successful

  An entry in the ..\simpati\system directory is generated for each chamber in the course of this.

  → *Reading the configuration file »Scanning« (page 212)*

  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 read the configuration in for all of the other chambers that are to be networked via Ethernet.

Adapting the SIMPATI*.str file

For example, the SIMPATI*.str file contains the 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 shortcut on the desktop.

1) Option

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 cmd.exe file:

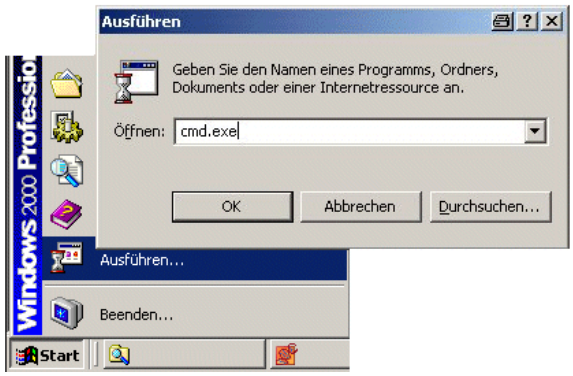


Fig. 5-1: Executing cmd.exe file

- Input: ping 192.168.121.36

Response:

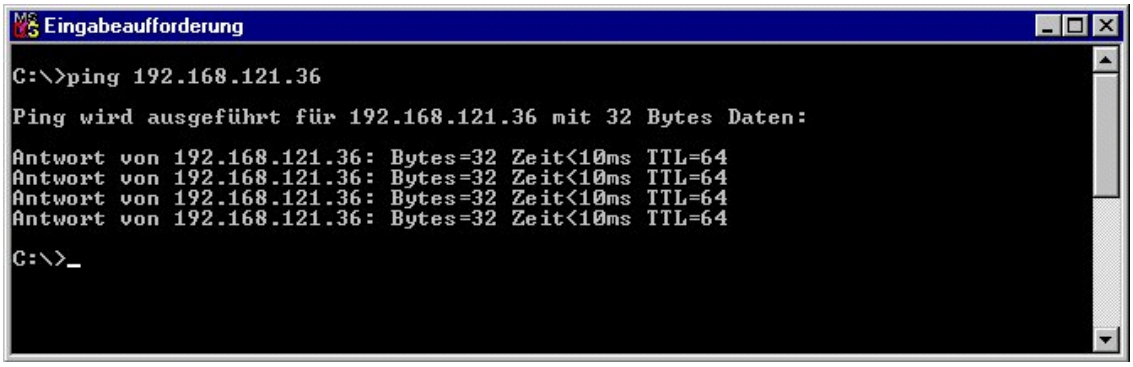


Fig. 5-2: Connection OK

1) Option

Response:

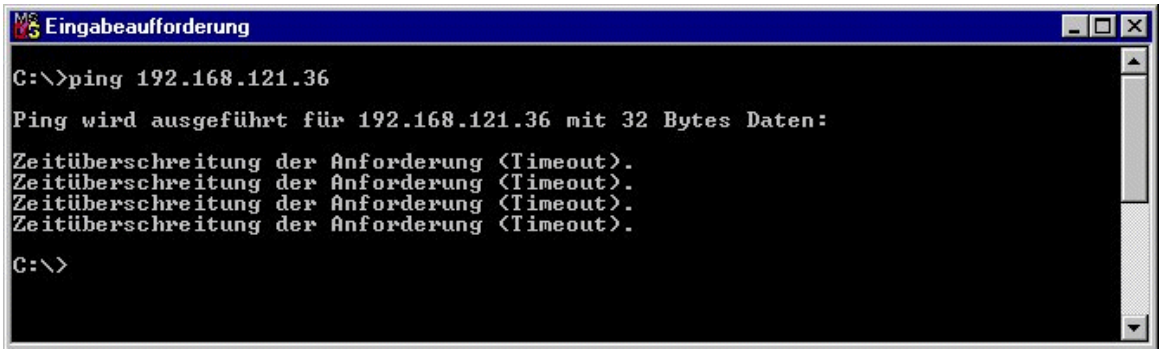


Fig. 5-3: Connection NOK

- Check the communication path.

Reading the configuration file »Scanning«

The directory is: ..\simpati\system

- → • *Open cmd.exe file: (page 211)*
- Entries:

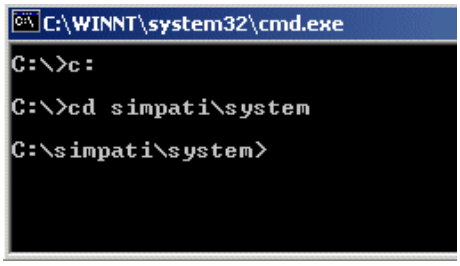


Fig. 5-4: Entry

- Input: simc2k /SCAN_TCPIP#192.168.121.36#7777#1#51

Response:

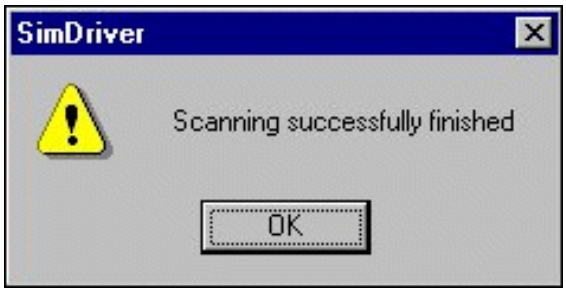


Fig. 5-5: Read-in OK

This function reads the chambers with the IP address 192.168.121.36 connected via the LAN, port 7777 as chamber number 1 with the logical address 51.
Saving the configuration

→ *Fig. 3-3: System configuration (page 9)* Item 7.

1) Option

Response:

Fig. 5-6: Read-in faulty

- Check the protocol selection and port on the control unit and adjust them if necessary.
  → *Checking the network connection (page 211)*

Chamber 2

Repeat these steps for the second chamber with the address 192.168.121.37

6 CHECKING THE ADDRESS TABLE

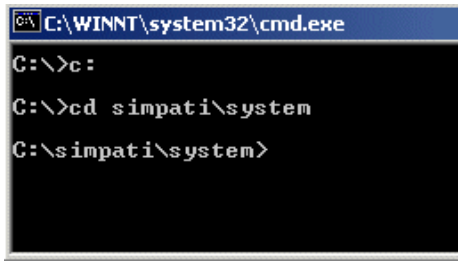


Fig. 6-1: Entry

- Input: type simpati.adr

Output:

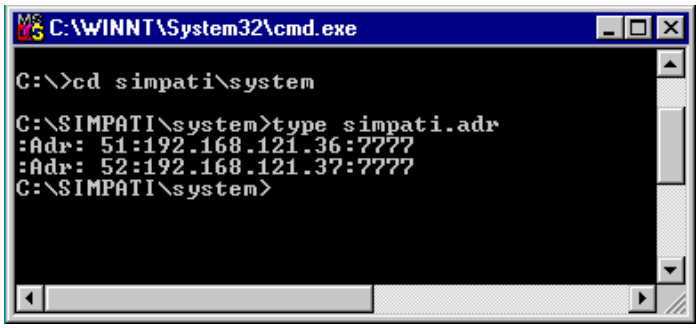


Fig. 6-2: Output OK

1) Option

Output:

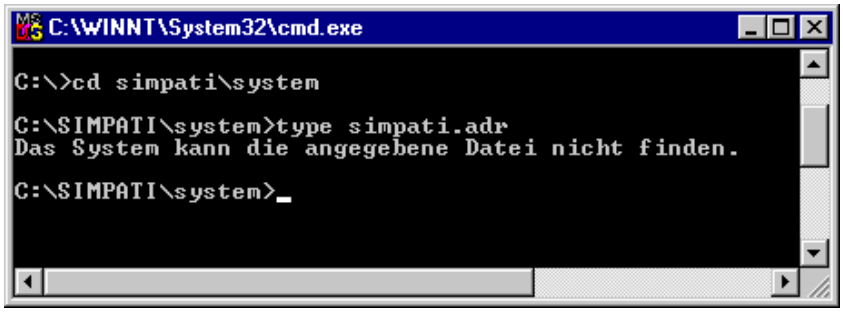


Fig. 6-3: Output faulty

Error: SIMPATI*.adr file was created.

Procedures:

→ *Checking the network connection (page 211)* and repeat
→ *Reading the configuration file »Scanning« (page 212)*

- Start SIMPATI*

1) Option

APPENDIX: SIMPATI* TCP/IP INTERFACE (SIMSERV)

1 DESCRIPTION

With the aid of "simserv", applications such as LabView, HP VEE Lab or Siemens-S7 can communicate across platforms with SIMPATI* via the Windows TCP/IP socket interface and thus can exchange all relevant process data with SIMPATI*.

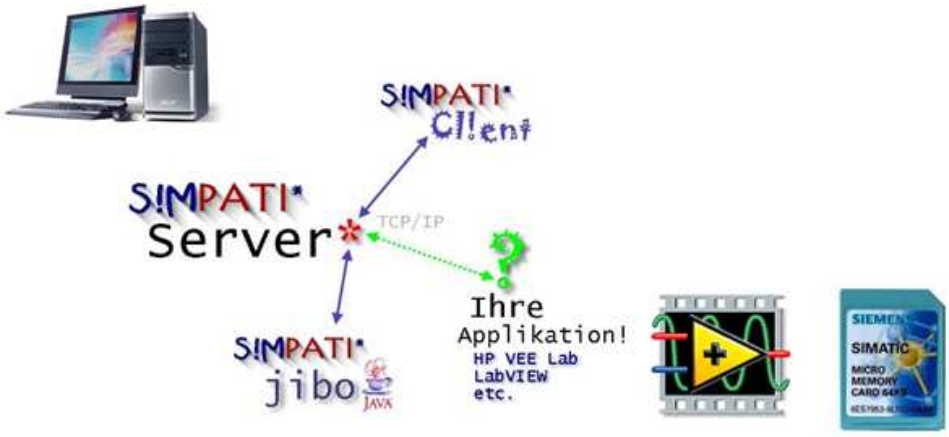


Fig. 1-1: Cross-platform communication

NOTE

The TCP/IP interface is supported from SIMPATI **2.0**. Not every command may be available in older versions.*

2 FUNCTION

The mode of operation is illustrated below:

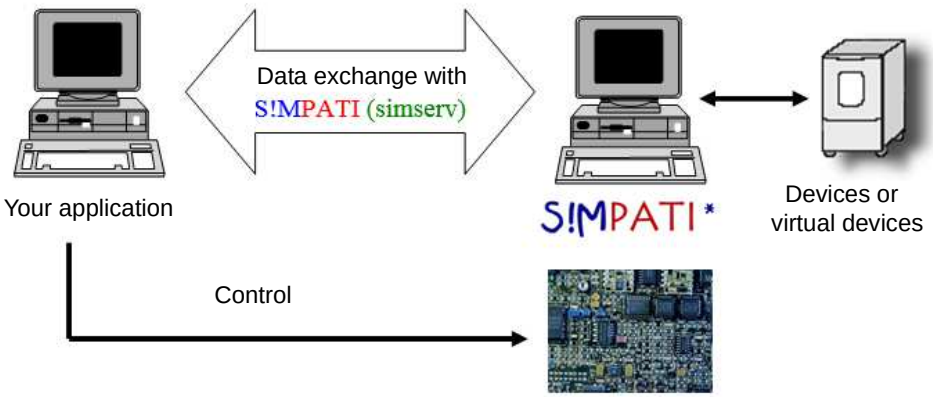


Fig. 2-1: Overview of the mode of operation

1) Option

3 INSTALLATION

The TCP/IP server software is started with the entry **80:01:simserv:-P7777**:

in the **simpati.str** file in the ..\simpati\system directory.

Then SIMPATI* needs to be restarted.

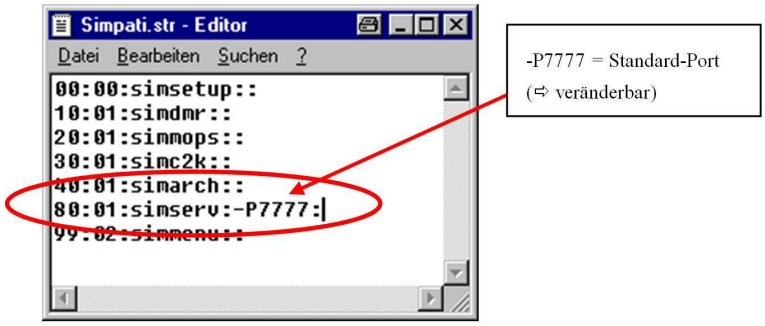


Fig. 3-1: Starting the TCP/-IP server software

CAUTION

Quit 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 consecutive numbering. Incorrect entries can cause SIMPATI to crash!*

4 COMMAND SEQUENCE

It is not possible to establish a permanent socket connection to the server. As a result, a server can, however, serve several clients simultaneously.

The following structure must be observed for every command:

1 Establish connection

2 Send command

3 Read response

4 Close connection

1) Option

5 FUNCTION COMMANDS

The function commands setup (Simserv commands for data exchange with SIMPATI*) is illustrated below.

5.1 Setup

The function commands are set up as follows:

Setup									
Command	TZ	Chamber index	TZ	Argument 1	TZ	Argument 2	TZ	etc., up to 4 arguments, depending on the function	CR

Tab. 5-1: Function commands setup

TZ = TrennZeichen [separator] = "¶" (ASCII 182)
CR = CarriageReturn (\r) end of command (ASCII 13)

In case of an error

ErrorCode	CR

Tab. 5-2: Error

is returned as the status, where the following error codes are possible:

ErrorCode	**Error text**
-1	The receipt string; was empty
-2	Missing chamber ID
-3	Chamber ID is in an invalid range
-4	Chamber not present
-5	Unknown command ID
-6	Too few or incorrect parameters
-7	No server (for server service functions)

Tab. 5-3: Error codes

If there are no errors a "1" is returned.

1) Option

5.2 Examples

Set the nominal temperature value of the 2nd chamber to 25 °C:

11001	¶	2	¶	1	¶	25.0	CR

NOTE
For the 1st control variable Temperature a 1 is always returned as the value, for the 2nd control variable (e.g. Humidity) a 2, etc.!

Set the actual temperature value of the 2nd chamber to 30 °C:

11003	¶	2	¶	1	¶	30.0	CR

Query the actual temperature value of the 2nd chamber:

11004	¶	2	¶	1	¶	CR

Response of the servers to a GET ACTUAL VALUE command:

1	¶	23.9000	CR

Set digital channel 1 (Start) of the 2nd chamber:

11003	¶	2	¶	1	¶	30.0	CR

Start/stop archiving "test" of the 2nd chamber:

18011	¶	2	¶	test	CR
19050	¶	2	¶	256	CR
19050	¶	2	¶	512	CR

1) Option

6 TEST PROGRAM

The TCP/IP connection can be tested using the "**Servtest.exe**" client test program which is located in the …\simpati\system directory (carry out point 1.3 in advance!).

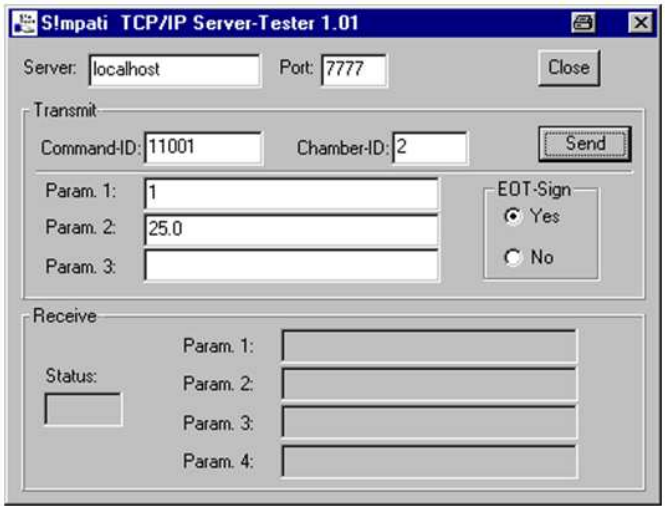


Fig. 6-1: Client test program

1) Option

7 LABVIEW APPLICATION

Example of a LabView application.

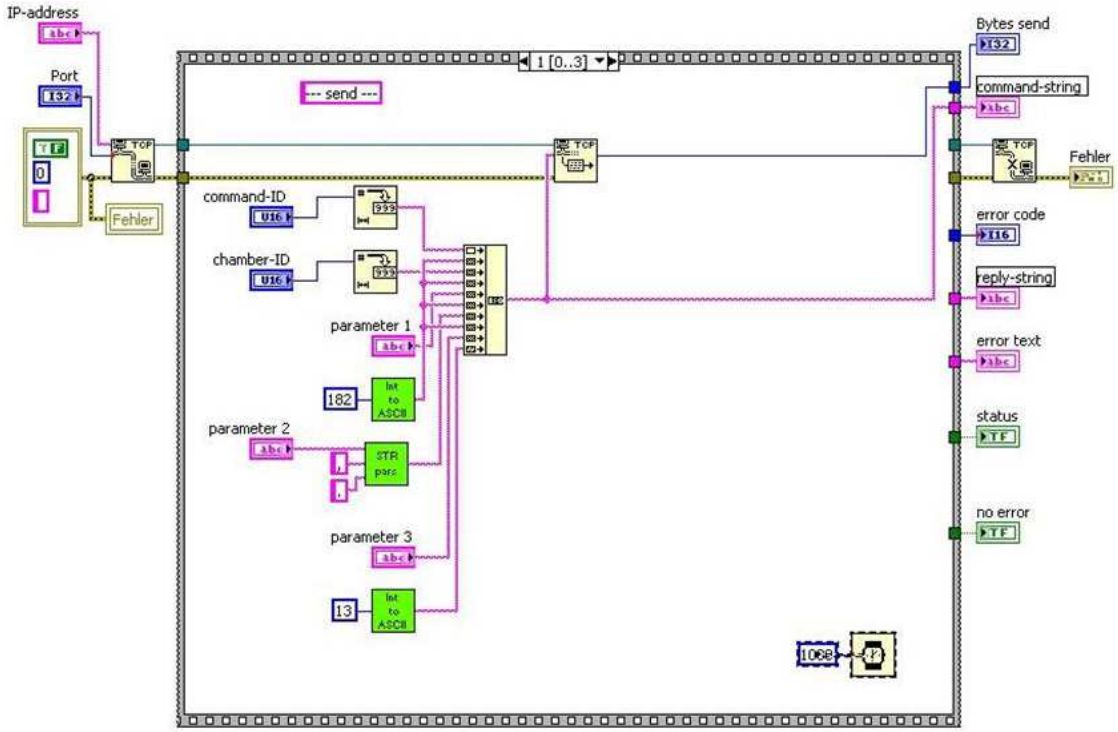


Fig. 7-1: LabView application

8 COMMAND LIST

Available functions

COMMAND	Function No	Chamber ID	Param 1-4	Response	
CHAMBER INFORMATION					
GET CHAMBER NAME	10006	Chamber index		CHAMBER NAME	
GET CHAMBER TYPE	10017	Chamber index		VÖTSCH	10001
				WEISS DMR	20001
GET CONTROL VARIABLE_COUNT	11018	Chamber index		CONTROL VARIABLE	
GET DIGITAL CHANNEL_COUNT	14007	Chamber index		DIGITAL CHANNEL	
GET ERROR_COUNT	17002	Chamber index		ERROR	
GET OPERATING STATUS (Flags)	10012	Chamber index		AVAILABLE	0x1
				RUN	0x2
				WARNING	0x4
				ALARM	0x8

Tab. 8-1: Command list

1) Option

COMMAND	Function No	Chamber ID	Param 1-4	Response	
GET OPERATING MODE (Flags)	10010	Chamber index		DATA LOGGING	0x1
				MANUAL	0x2
				AUTOMATIC	0x4
				PAUSE	0x8
				BUSY	0x10
GET SCANNING CYCLE TIME	10034	Chamber index		SCANNING CYCLE TIME	
CONTROL VARIABLE					
GET NAME	11026	Chamber index	Value	NAME	
GET NOMINAL VALUE	11001	Chamber index	Value		
GET UNIT	11023	Chamber index	Value	UNIT	
GET NOMINAL VALUE	11002	Chamber index	Value	NOMINAL VALUE	
SET ACTUAL VALUE	11003	Chamber index	Value		
GET ACTUAL VALUE	11004	Chamber index	Value	ACTUAL VALUE	
GET INPUT LIMIT MIN	11007	Chamber index	Value	MIN	
GET INPUT LIMIT MAX	11009	Chamber index	Value	MAX	
GET WARNING LIMIT MIN	11016	Chamber index	Value	MIN	
GET WARNING LIMIT MAX	11017	Chamber index	Value	MAX	
GET ALARM LIMIT MIN	11014	Chamber index	Value	MIN	
GET ALARM LIMIT MAX	11015	Chamber index	Value	MAX	
CONTROL VALUE					
GET NAME	13011	Chamber index	Value	NAME	
GET UNIT	13010	Chamber index	Value	UNIT	
GET NOMINAL VALUE	13005	Chamber index	Value	NOMINAL VALUE	
SET NOMINAL VALUE	13006	Chamber index	Value		
GET INPUT LIMIT MIN	13002	Chamber index	Value	MIN	
GET INPUT LIMIT MAX	13004	Chamber index	Value	MAX	
MEASURED VALUE					
GET NAME	12019	Chamber index	Value	NAME	
GET UNIT	12016	Chamber index	Value	UNIT	
SET ACTUAL VALUE	12001	Chamber index	Value		
GET ACTUAL VALUE	12002	Chamber index	Value	ACTUAL VALUE	
GET WARNING LIMIT MIN	12010	Chamber index	Value	MIN	
GET WARNING LIMIT MAX	12011	Chamber index	Value	MAX	
GET ALARM LIMIT MIN	12008	Chamber index	Value	MIN	
GET ALARM LIMIT MAX	12009	Chamber index	Value	MAX	
DIGITAL CHANNELS					

Tab. 8-1: Command list

1) Option

COMMAND	Function No	Chamber ID	Param 1-4	Response
SET DIGITALOUT	14001	Chamber index	DigiNo + 0/1	
GET DIGITALOUT	14003	Chamber index	DigiNo	DIGITALOUT, 0/1
SET DIGITALIN	15001	Chamber index	DigiNo + 0/1	
GET DIGITALIN	15002	Chamber index	DigiNo	DIGITALIN, 0/1
COUNTER				
SET COUNTER	16002	Chamber index	Value	
ERROR				
GET ERROR TEXT	17007	Chamber index	ErrorNo	ERROR TEXT
SET ERROR STATUS	17008	Chamber index	ErrorNo + 0/1	
GET ERROR STATUS	17009	Chamber index	ErrorNo	ERROR STATUS, 0/1
SET ERROR ID	17022	Chamber index	ID	
AUTOMATIC MODE				
SET STARTZPGPRGNUMBER	19014	Chamber index	PrgNo + Loops	
SET STOPZPGPRG	19015	Chamber index		
SET DOWNLOAD	19001	Chamber index	PrgName+PrgLocation	
GET PROGRAM NAME	19031	Chamber index		PrgName
GET PROGRAM STATUS	19062	Chamber index		TRUE / FALSE (1/0)
GET PROGRAM START	19064	Chamber index		Param1-4: Name, Loops, PRE-RUN TIME, START DATE
SET PROGRAM SET ARCHIVE ON/OFF	19050	Chamber index	PAUSE 0x20	
			NEXT 0x40	
			START 0x100	
			STOP 0x200	
SET ALL LOOPS	19003	Chamber index	0=External 1=Internal	
GET ALL LOOPS	19004	Chamber index	0=External 1=Internal	ALL LOOPS
GET ACTUAL LOOPS	19006	Chamber index	0=External 1=Internal	ACTUAL LOOPS
ARCHIVING				
SET ARCHIVE NAME	18011	Chamber index	Archive name	
GET ARCHIVE NAME	18012	Chamber index		Archive name
SET ARCHIVE COMMENT	18023	Chamber index	text	
GET ARCHIVE COMMENT	18024	Chamber index		TEXT

Tab. 8-1: Command list

1) Option

APPENDIX: OPERATION OF A TYPE TS 130 SHOCK CHAMBER WITH SIMCON/32 CONTROLLER UNDER THE SIMPATI* SOFTWARE PACKAGE

1 GENERAL

When creating a program using SIMPATI* care must be taken that at control value No. 3 "Max. Umtemp.Time" a target value of at least 15 minutes is entered.

If the control value is not programmed (target value = 0) this leads to error message"A031: Wait function time exceeded" immediately after the program starts.

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 QUITTING SIMPATI*

- Quit the SIMPATI* software package.

3 EDITING THE CONFIGURATION FILE

Open the configuration file (simpati.cxx) of the relevant system using 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:Rotation:Fan.Speed :% : 30.0: 100.0:1:
:ST:002:DEF :Defrost : : 0.0: 1000.0:2:
:ST:003:MUT :Max.Umtemp.time :Min : 15.0: 100.0:3:

Close and save the file.

4 DELETING SHARED MEMORY

- Delete the hidden sim.cxx files in directory c:\simpati\system.
  (xx = system number)

5 STARTING SIMPATI*

- Start the SIMPATI* software package.

6 INITIALISING LIMIT VALUE

- Click with the right mouse button on the relevant system in the SIMPATI* main menu and select the »Limits« menu.

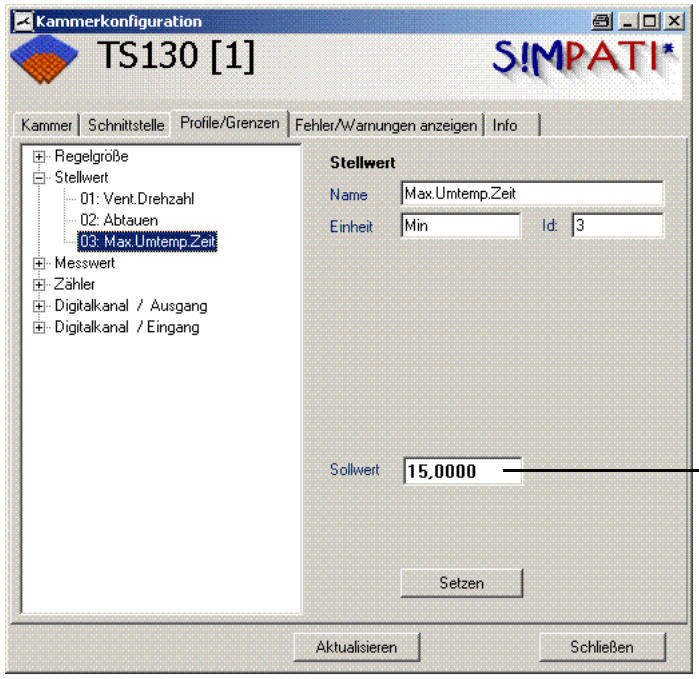


Fig. 6-1: Setting control value

- Set the nominal value (1) of the control value to "15.0"

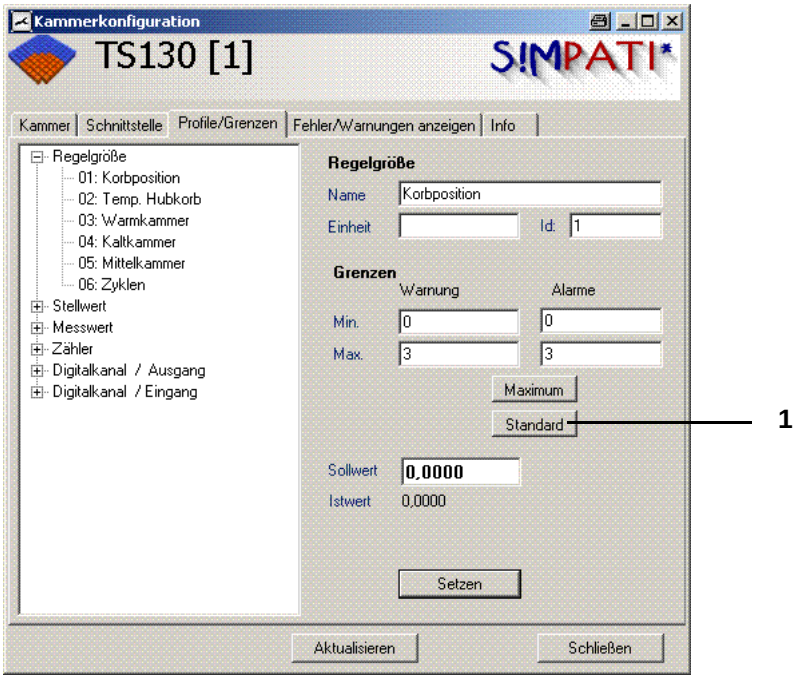


Fig. 6-2: Setting control variable

- Click on "Default" (1) for a control variable and then on "Set".

1) Option

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 so that installation, configuration and startup can be performed with SIMPATI* administrator rights.

Users work on the PC with restricted standard user rights only. As a result, the SIMPATI* installation (installed files and folders) is hidden 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

- When logging in to SIMPATI* for the first time, enter the password »admin« ad 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 30 characters, but 8 is selected by default). In addition, the password needs to 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 ({ } [ ] , . < > ; : , " ? / \ | `% ^& * ( ) _ - + =)
- Password and user name must not be identical.
- The password can neither be entered via the clipboard (copy and paste) nor via keyboard or mouse events.
- Passwords expire after 60 days (however this can be increased to between 1 and 100 days by the administrator) and must be renewed. You will be prompted to do this automatically when you log in. 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 in.
- The number of unsuccessful login attempts after which an individual user is blocked is set to 3 attempts by default (this can be configured to between 1 and 3 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 independent of groups.
- The user is automatically logged out if there is no activity in the system for a set time (between 40 and 300 seconds). The user needs to log back in again to be able to continue working.

1) Option

3 SYSTEM PREREQUISITES

- Windows operating system Microsoft 2008, 2012
- Windows operating system Microsoft 7, 8, 8.1l
- Uninterruptible power supply to the PC

4 USER LOGOUT

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. The following procedure describes the installation of a SIMPATI* service.

1) Option

APPENDIX: STARTING SIMPATI AS A SERVICE

A prepared script executes the setup of a "SIMPATI* service" automatically. The script creates the service called "SimpatiService", generates all the registry entries required and produces a shortcut on the desktop for starting the main menu.

Every program started as a service runs "hidden" in the background, even the main menu for example. For the purpose of resource protection the call can, therefore, be deactivated in the SIMPATI* start file.

However, in order to be able to operate SIMPATI*, this shortcut is used to start the main menu in the context of the SIMPATI* service user.

NOTE

Every Windows user who wants to operate SIMPATI needs this shortcut. In order to prevent SIMPATI* from inadvertently being started twice, the two shortcuts produced during the basic installation of SIMPATI* for starting SIMPATI* on the desktop and in the Windows start menu should be deleted.*

1 EXECUTING THE SCRIPT

- In order to do this, open in Windows → »Start menu« → »Accessories« a command prompt (console window) as administrator.

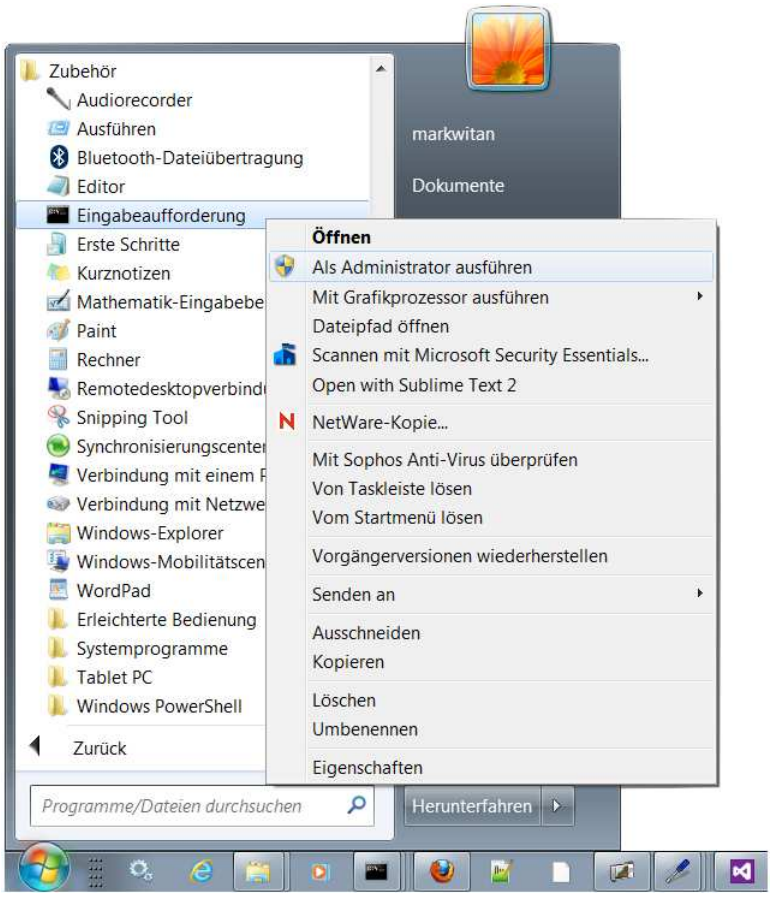


Fig. 1-1: Executing command prompt as administrator

1) Option

The following actions are carried out in the console window:

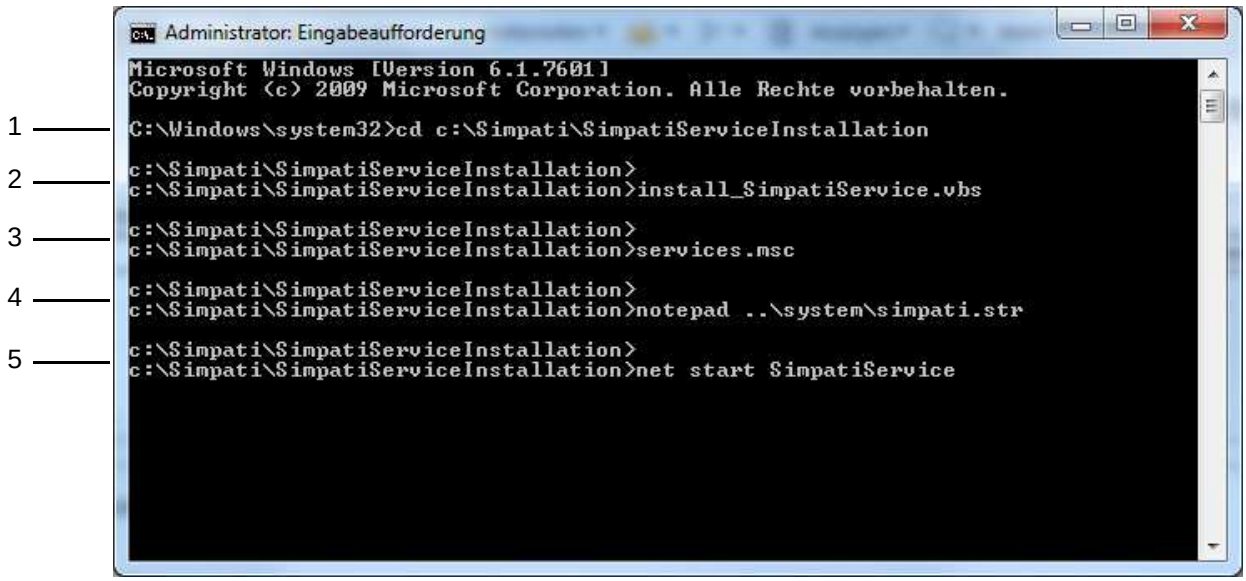


Fig. 1-2: Console window

1 Switch to the script directory: cd c:\simpati\SimpatiServiceInstallation

2 Start script: install_SimpatiService.vbs ENTER

– Confirm SIMPATI* installation path

Fig. 1-3: Installation path

If the installation is successful, a desktop shortcut for starting the SIMPATI* main menu is created.

Fig. 1-4: Desktop shortcut

1) Option

2 CREATING USER AND LINKING WITH "SIMPATISERVICE"

The service still has to be linked with the user (in the following example: SimpatiServiceAdmin). This user has to be provided with modification rights for the entire SIMPATI* directory structure (c:\simpati) and also the right to start and to terminate services.

- Start service administration; the command reads:-> services.msc

3 Keep the »Automatic« setting; as a result, the service is automatically started by Windows.

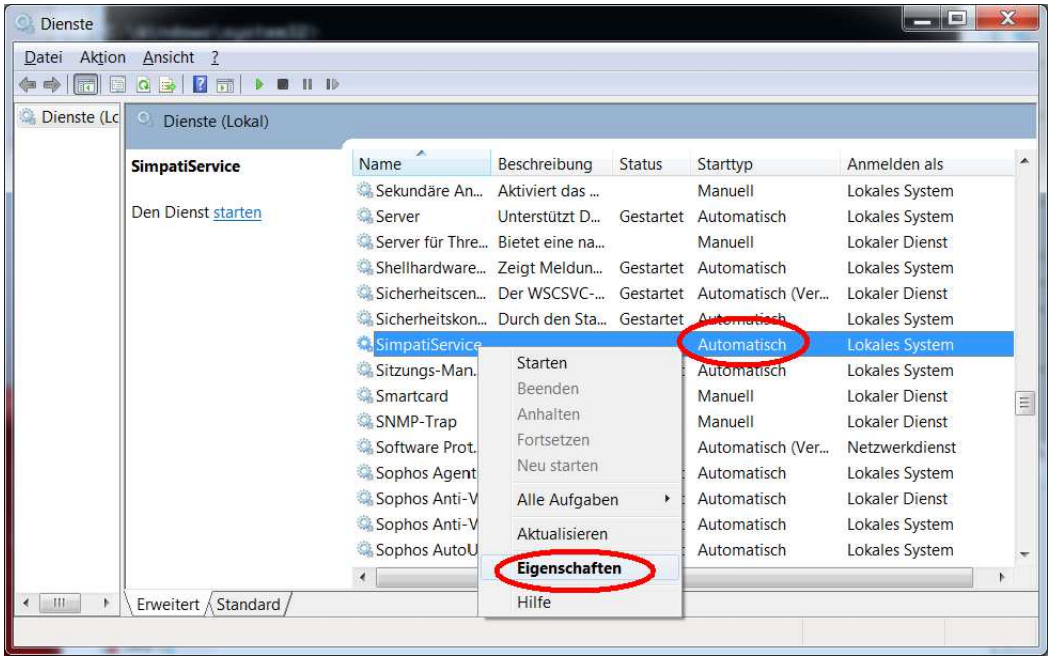


Fig. 2-1: Starting service automatically

1) Option

3 EDITING THE SIMPATI* START FILE "SIMPATI.STR".

- Deactivate the SIMPATI* main menu.

4 Console entry> notepad ..\system\simpati.str

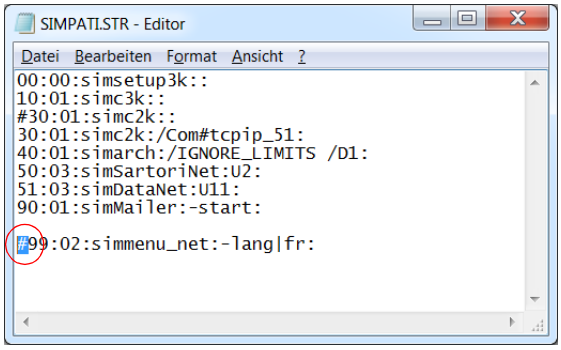


Fig. 3-1: SIMPATI start file*

Deactivate entry **:simmenu_net:*“ with a »#« at the beginning of the line.

Example:

\simpati\system\simpati.str

00:00:simsetup3k::

10:01:simc3k::

#30:01:simc2k::

30:01:simc2k:/Com#tcpip_51:

40:01:simarch:/IGNORE_LIMITS /D1:

50:03:simSartoriNet:U2:

51:03:simDataNet:U11:

90:01:simMailer:-start:

#99:02:simmenu_net:-lang|fr:

»#« = at the beginning of the line deactivates the command

- Save modified file.

1) Option

4 TESTING THE SERVICE - STARTING THE SERVICE

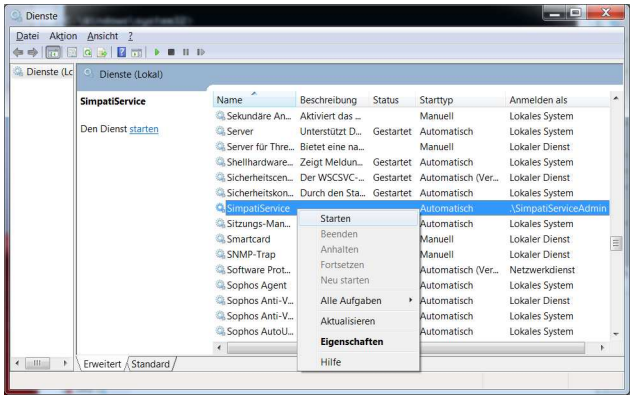


Fig. 4-1: Starting the service

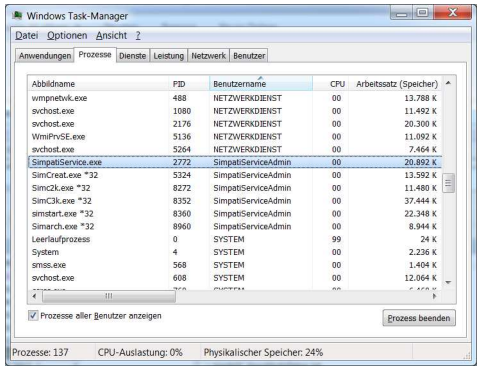


Fig. 4-2: Process started

1) Option

5 STARTING THE MAIN MENU FOR SIMPATISERVICE

The "Service SIMPATI* Main Menu" shortcut for starting the main menu still has to be linked with the "SimpatiServiceAdmin" user.

- Open the shortcut's Properties dialog.
- Replace the question mark in the "Target" input field with the user name.

For example:

– Target: C:\Windows\system32\runas.exe /env /savecred /user:???

– Target: C:\Windows\system32\runas.exe /env /savecred /user:SimpatiServiceAdmin

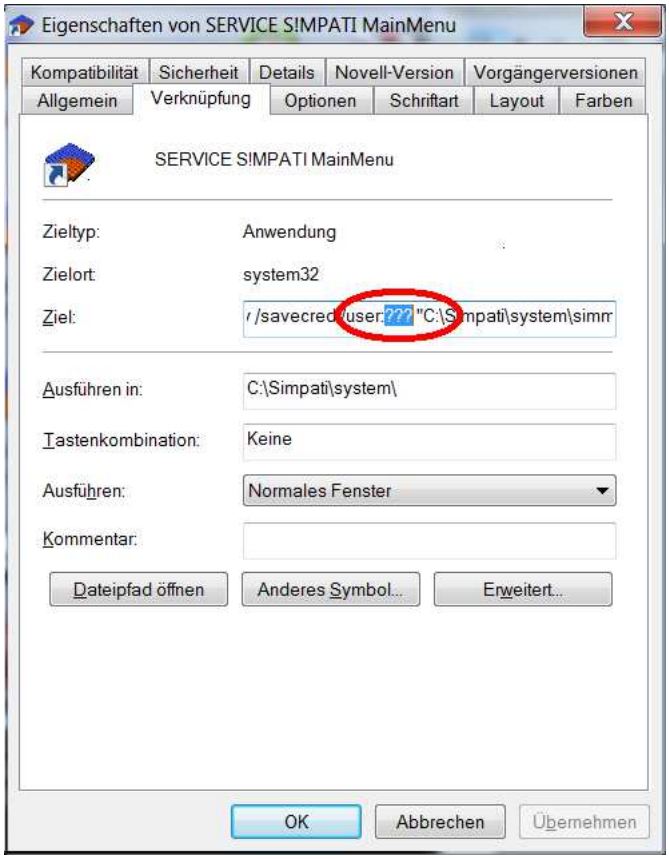


Fig. 5-1: Entering user name

When the main menu is started, the password of the SimpatiServiceAdmin user is queried in a command prompt.

With the runas option / savecred (see target) the password is entered just once on initial startup.

1) Option

APPENDIX: EXAMPLES

1 PROGRAMMING EXAMPLE FOR A TEMPERATURE AND CLIMATIC TEST CHAMBER WITH A SIMCON CONTROLLER

This example explains step by step how to create a temperature and climatic program in the symbolic editor.

General descriptions of the basic editor functions can be found in chapter → *9.2 (page 65)*.

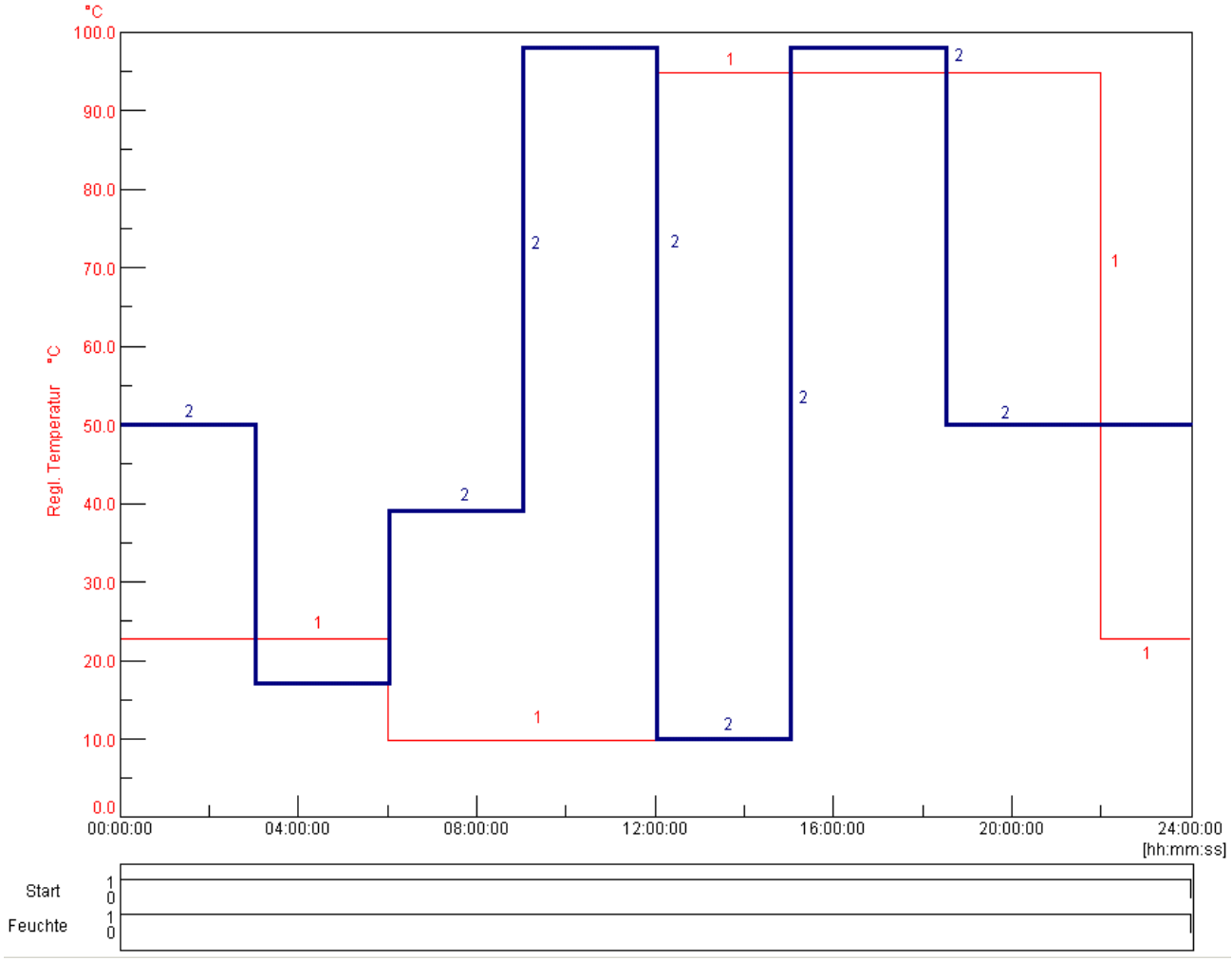


Fig. 1-1: Program preview

1 Control variable Rel. humidity % r.h.

2 Control variable "temperature" °C

1) Option

Programming the »Start« digital channel

Programming symbol / input → explanation of programming symbol		Explanation
	Start value 1	Activate this digital channel to start the chamber.
	24 hours constant	The previously set status of the digital channel is retained for 24 hours.
	Insert this programming symbol in the symbol chain to deactivate the digital channel	

Programming the »Humidity« digital channel

Programming symbol / input → explanation of programming symbol		Explanation
	Start value 1	Activate this digital channel to switch on the humidity controller.
	24 hours constant	The previously set status of the digital channel is retained for 24 hours.
	Insert this programming symbol in 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 234)*	The rel. humidity is set to 50 %.
	3 hours constant → *(page 70)*	The previously entered nominal value is retained
	17 % → *(page 70)*	There is a jump down to 17 % r.h., the humidity is reduced as quickly as possible
	3 hours constant	The previously entered nominal value is retained
	39 %	There is a jump up to 39 % r.h., the humidity is increased as quickly as possible
	3 hours constant	The previously entered nominal value is retained
	89 %	There is a jump up to 89 % r.h., the humidity is increased as quickly as possible
	3 hours constant	The previously entered nominal value is retained
	10 %	There is a jump down to 10% r.h., the humidity is reduced as quickly as possible

1) Option

Programming symbol / input → explanation of programming symbol		Explanation
	3 hours constant	The previously entered nominal value is retained
	89 %	There is a jump up to 89 % r.h., the humidity is increased as quickly as possible
	3 hours constant	The previously entered nominal value is retained
	50 %	There is a jump down to 50 % r.h., the humidity is reduced as quickly as possible
	6 hours constant	The previously entered nominal value (50 % r.h.) is retained until the program has ended.

Programming the »Temperature« control variable

Programming symbol / input → explanation of programming symbol		Explanation
	Start value: 23 °C → *9.2.3 (page 67)*	The temperature is set to +23 °C.
	6 hours constant → *(page 70)*	The previously entered nominal value is retained
	Jump down to 10 °C → *(page 70)*	There is a temperature change to +10 °C the nominal value is approached as quickly as possible
	6 hours constant	The previously entered nominal value is retained
	Jump up to 95 °C → *(page 70)*	The temperature is increased to +95 °C the nominal value is approached as quickly as possible
	10 hours constant	The previously entered nominal value is retained
	Jump down to 23 °C → *(page 70)*	There is a temperature change to +23 °C the nominal value is approached as quickly as possible
	2 hours constant	The previously entered nominal value is retained

1) Option

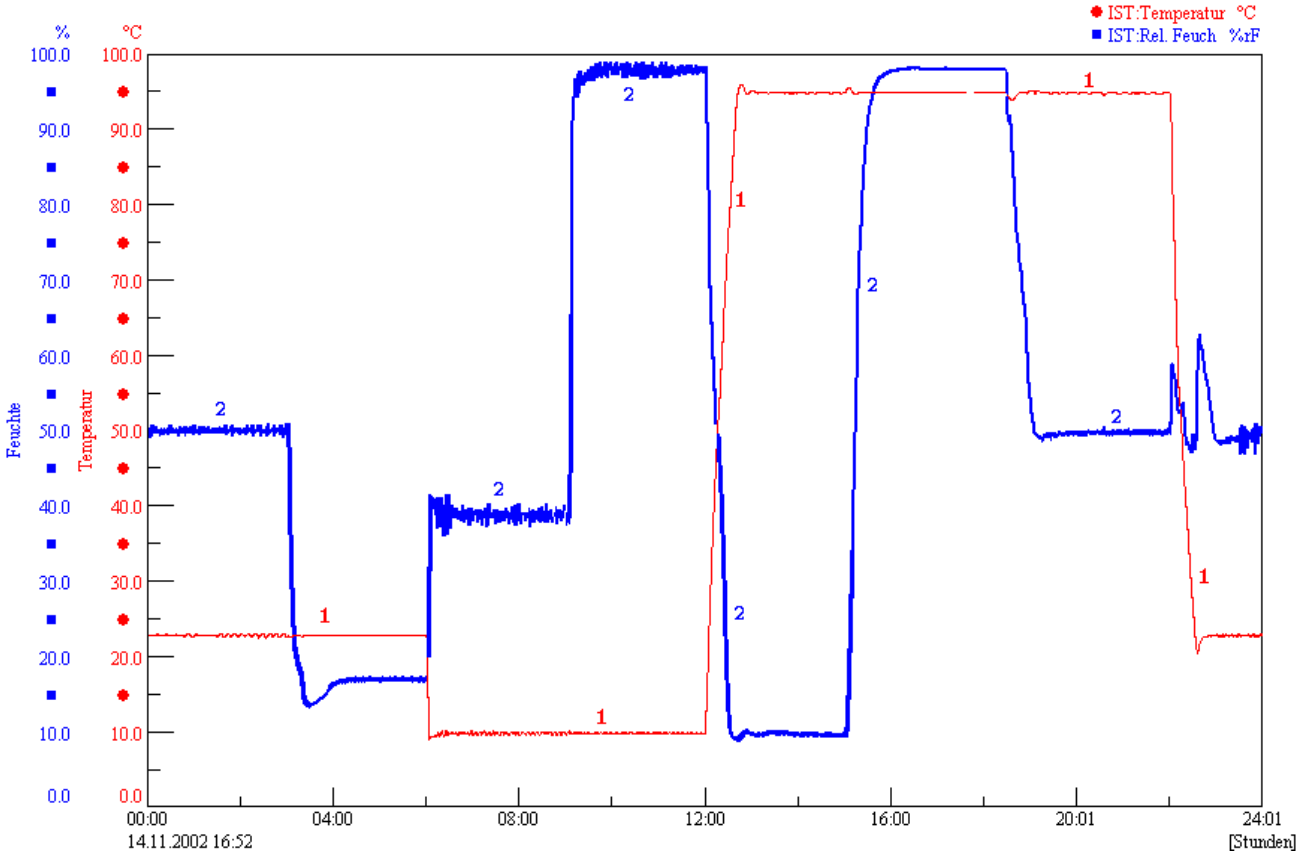


Fig. 1-2: Program sequence

1) Option

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.

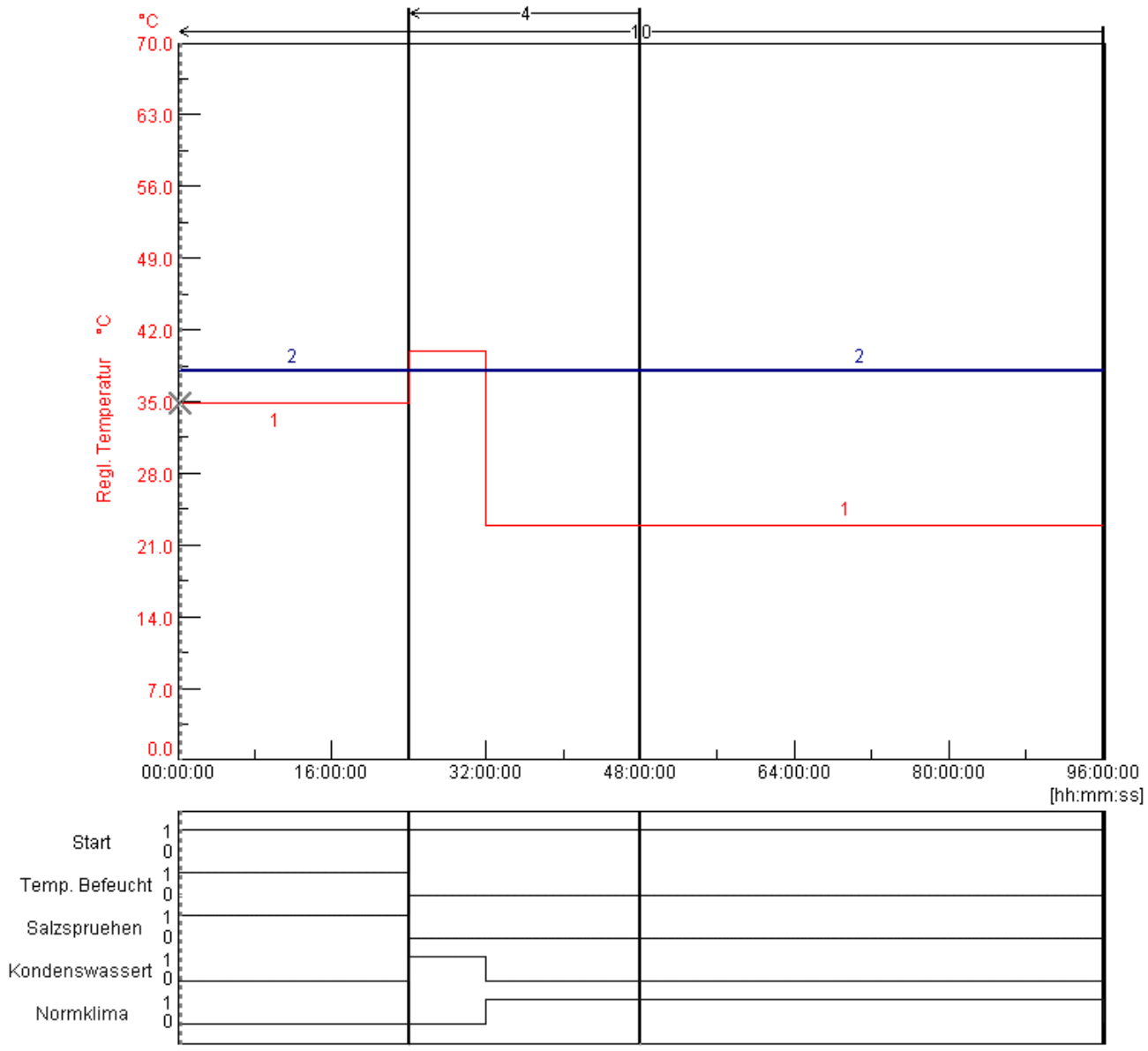


Fig. 2-1: Program preview

1) Option

Programming the »Start« digital channel

Programming symbol / input → explanation of programming symbol		Explanation
	Start value: 1 → *(page 70)*	Activate this digital channel to switch on the chamber.
	24 hours constant → *(page 70)*	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 → *(page 70)*	Activate this digital channel to enable the humidifier's temperature nominal value
	24 hours constant → *(page 70)*	The previously set status of the digital channel is retained for 24 hours.
	Insert this programming symbol in 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 → *(page 70)*	Activate this digital channel to switch on the salt spray test.
	24 hours constant → *(page 70)*	The previously set status of the digital channel is retained for 24 hours.
	Insert this programming symbol in 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.

1) Option

Programming the »Condensation Water« digital channel

Programming symbol / input → explanation of programming symbol		Explanation
	0 → *(page 70)*	Activate this digital channel to switch on the condensation water test
	24 hours constant → *(page 70)*	The digital channel has no effect on the testing sequence for the next 24 hours.
	Insert this programming symbol in the symbol chain to reactivate the digital channel.	
	8 hours constant	The digital channel is switched on for 8 hours.
	Insert this programming symbol in 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	Activate this digital channel to switch on the standard climate test
	24 hours constant	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.
	Insert this programming symbol in the symbol chain to reactivate the digital channel.	
	16 hours constant	The digital channel is enabled for 16 hours.
	48 hours constant	The digital channel remains enabled for another 48 hours.
	Insert this programming symbol in 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 → *(page 70)*	The temperature is set to +35 °C.
	24 hours constant → *(page 70)*	The previously entered nominal value is retained
	Jump up to 40 °C → *(page 70)*	The temperature is increased to +40 °C, the nominal value is approached as quickly as possible
	8 hours constant	The previously entered nominal value is retained
	Jump down to 23 °C → *(page 70)*	There is a temperature change to +23 °C, the nominal value is approached as quickly as possible
	16 hours constant	The previously entered nominal value is retained
	48 hours constant	The previously entered nominal value is retained

Programming the control variable »Contr. humidifier«

Programming symbol / input → explanation of programming symbol		Explanation
	Start value: 49 °C, → *(page 70)*	The temperature nominal value of the humidifier is set to 49 °C.
	Repeat 10	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 accepted in all profiles.
	24 hours constant	The previously entered nominal value 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 accepted in all profiles.
	24 hours constant	The previously entered nominal value is retained
	Repeat 4	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 nominal value 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.

1) Option

3 PROGRAM EXAMPLE FOR A SHOCK CHAMBER WITH DMR CONTROLLER

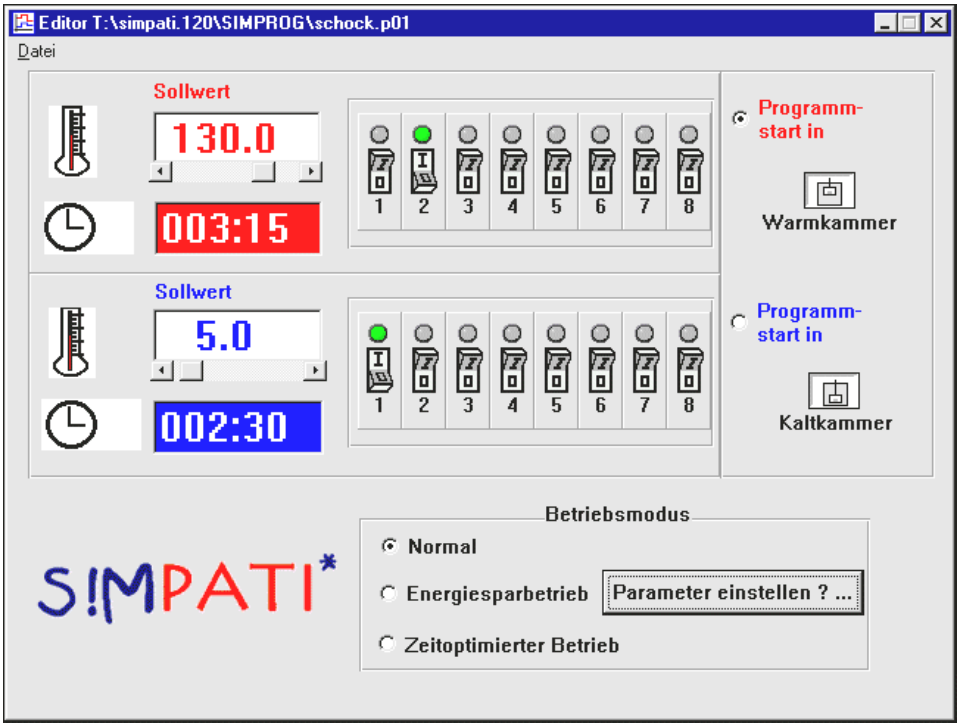


Fig. 3-1: Example: Shock chamber editor with DMR controller

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 mode.

In addition, the 2nd customer output is set in the hot chamber and the 1st customer output is set in the cold chamber.

1) Option

4 EXAMPLE OF A TEST PROGRAM WITH PROGRAM ADVANCE

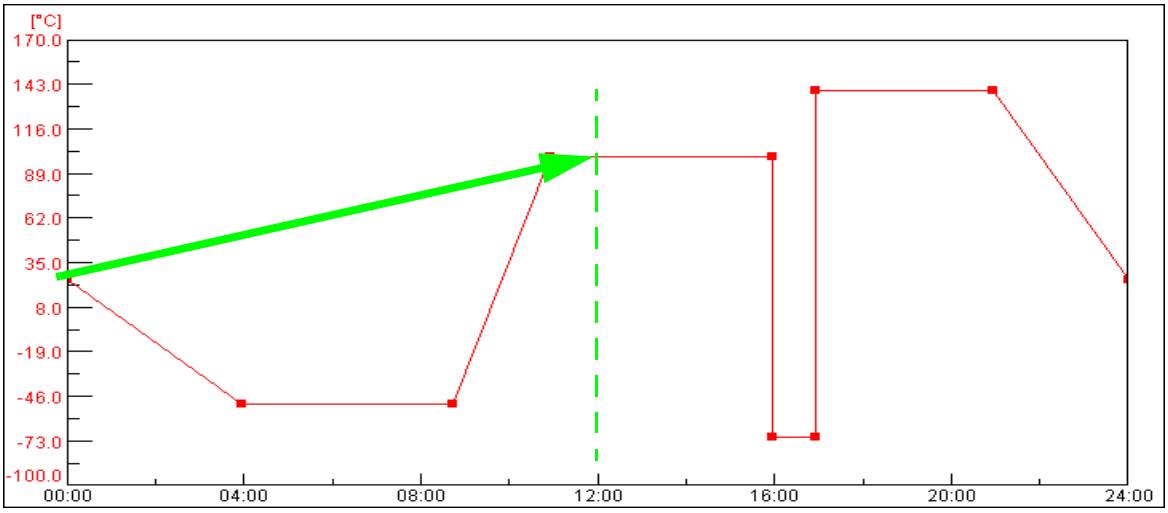


Fig. 4-1: Example »Program advance«

Start time: 12:00 o'clock

The function → *11 Starting/stopping a test program (page 125)* is active; after startup the test program immediately goes to the status that would be reached after 12 hours according to 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
TempHot	°C	120.0	-90.0	230.0
TempCold	°C	-40.0	-90.0	230.0
PretmpHot	°C	130.0	0.0	240.0
PretmpCold	°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 (cycles) start, a time duration of 1 minute is completed
Start	ON	System status is ON
TempHot	ON	Hot chamber temperature control is active
TempCold	ON	Cold chamber temperature control is active
Lift. Bask. Up	ON	Lifting basket to start in hot chamber

1) Option

Before the loop		
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 pre-tempered to 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 run with the wait function, this has to be subsequently programmed in the graphical editor → *General profile settings (page 91)*.
CO2/LN2	OFF	CO2 or LN2 cooling is not active
Contr./lifting basket	OFF	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	After the loops (cycles) finish, a time duration of 30 minutes is completed
Start	ON	System status is ON
TempHot	OFF	Hot chamber temperature control is inactive
TempCold	OFF	Cold chamber temperature control 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 pre-tempered
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 run with the wait function, this has to be subsequently programmed in the graphical editor → *General profile settings (page 91)*.
CO2/LN2	OFF	CO2 or LN2 cooling is not active
Contr./lifting basket	OFF	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

1) Option

1st section		
Time [min]	60	Dwell time in hot chamber 60 min
Start	ON	System status is ON
TempHot	ON	Hot chamber temperature control is active
TempCold	ON	Cold chamber temperature control 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 pre-tempered to 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 run with the wait function, this has to be subsequently programmed in the graphical editor → *General profile settings (page 91)*.
CO2/LN2	OFF	CO2 or LN2 cooling is not active
Contr./lifting basket	OFF	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

2nd section		
Time [min]	60	Dwell time in hot chamber 60 min
Start	ON	System status is ON
TempHot	ON	Hot chamber temperature control is active
TempCold	ON	Cold chamber temperature control 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 pre-tempered to 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 run with the wait function, this has to be subsequently programmed in the graphical editor → *General profile settings (page 91)*.
CO2/LN2	OFF	CO2 or LN2 cooling is not active
Contr./lifting basket	OFF	Control from the lifting basket is not active

1) Option

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 involves a program example for a double shock chamber; no programming is required

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

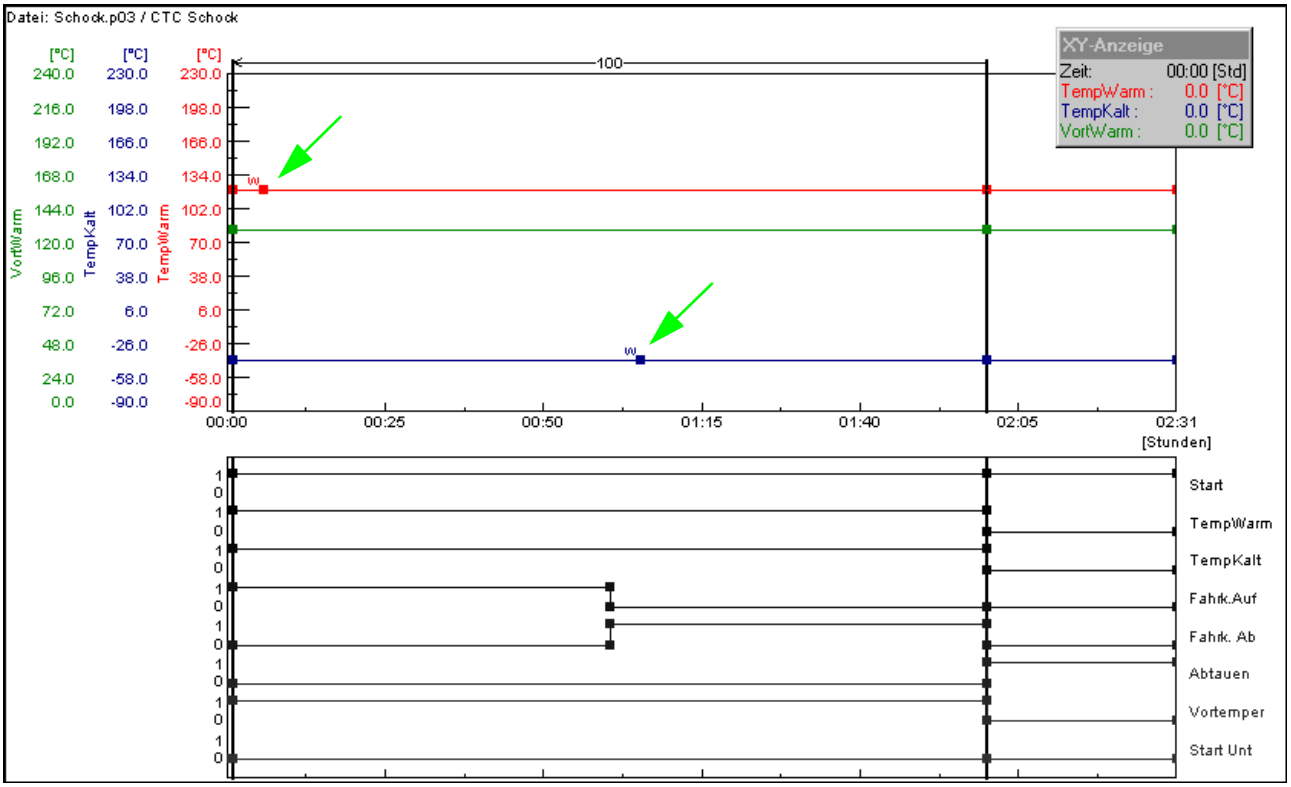


Fig. 5-1: Graphical representation of the shock test program

Insertion of the wait functions ensures that the cycle time set is run only after the lifting basket temperature is within the adjustable wait tolerance limits of +/-5 K (standard value set at 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.

1) Option

1) Option

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 test process is based on a test program.

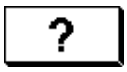
EPROM version

The EPROM version number briefly lights up on the E4 terminal after starting.

On the C terminal, press the »SYSTEM PARAM.« softkey 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

Analog channel. Contains a measured value (actual value) and a set value (nominal value). 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 that is to be processed.

NOTE

Availability of the context menu commands may depend on the chamber controller and therefore may vary.

Measured value

Actual value, analog input

1) Option

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 has the format *.pxx if it was created using the graphical editor → *9.3 Creating a test program with the graphical editor (page 82)*.

– *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 was created in the symbolic editor → *9.2 Creating a test program with the symbolic editor (page 65)* or in the shock chamber editor → *9.5 Creating a test program for a shock chamber (page 110)*.

– Format *.rpt

  A report file has the format *.rpt The report files store daily reports.
  File names defined by SIMPATI* have the following date 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 measured values. When a measurement file is loaded, the header file is loaded and the measured 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 processes header and body files automatically in the course of every operation.

– Format *.dxx

  The test program can be displayed step by step, printed and saved in a written format as a program list (*.dxx). However, changes cannot be made to the test program in this instance.

1) Option

Control value

Analog 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 → *Call Program* function are being used.

Please make sure that you follow the instructions for the various types of controllers in chapter → *3.9 Other controllers, third party devices and their special features (page 18)*.

Counter

Displays counter values

1) Option

1) Option

APPENDIX: INDEX

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