

StabNet 1.0



Manual
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StabNet 1.0

Manual

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StabNet 1.0

4.7	Results subwindow	234
4.7.1	Results - General	234
4.7.2	Results - Results	234
4.7.3	Results - Statistics	235
4.7.4	Results - Monitoring	236
4.8	Curves subwindow	237
4.8.1	Curve window - General	237
4.8.2	Curve window - Display	237
4.8.3	Curve window - View	238
4.8.4	Labeling of the axes	238
4.8.5	Zooming	239
4.8.6	Moving the curve	241
4.8.7	Curve window - Properties	241
4.8.8	Curve window - Display of the curves	242
5	Method	243
5.1	Method - General	243
5.1.1	Method - Definition	243
5.1.2	Method - User interface	243
5.1.3	Method - Menu bar	244
5.1.4	Method - Toolbar	245
5.1.5	Method - Functions	245
5.2	Method editor	246
5.2.1	Creating a new method	246
5.2.2	Opening a method	246
5.2.3	Selecting a method	248
5.2.4	Editing a method	249
5.2.5	Checking a method	249
5.2.6	Saving a method	249
5.2.7	Modification comment on method	252
5.2.8	Printing method reports (PDF)	252
5.2.9	Closing a method	253
5.3	Managing methods	253
5.3.1	Managing methods	253
5.3.2	Renaming a method	255
5.3.3	Copying a method	256
5.3.4	Moving a method	256
5.3.5	Deleting a method	256
5.3.6	Sending a method to	257
5.3.7	Exporting a method	257
5.3.8	Importing a method	258
5.3.9	Renaming an imported method	258
5.3.10	Signing methods	258
5.3.11	Showing the method history	263
5.4	Method groups	264
5.4.1	Managing method groups	264
5.4.2	Edit method groups	265

StabNet 1.0

6.7.2	Temperature coefficients table	364
6.7.3	Temperature coefficients - Properties	367
7	Devices	373
7.1	892 Professional Rancimat	373
7.1.1	Device properties	373
7.1.2	Device display	379
7.2	893 Professional Biodiesel Rancimat	380
7.2.1	Device properties	380
7.2.2	Device display	387
7.3	895 Professional PVC Thermomat	388
7.3.1	Device properties	388
7.3.2	Device display	392
8	How to proceed?	394
8.1	Audit Trail	394
8.1.1	Opening the Audit Trail	394
8.1.2	Filtering the Audit Trail	394
8.1.3	Exporting the Audit Trail	396
8.1.4	Archiving the Audit Trail	397
8.1.5	Deleting the Audit Trail	398
8.2	Backup	399
8.2.1	Backing up a database	399
8.2.2	Restoring a database	401
8.2.3	Backing up configuration data	401
8.2.4	Restoring configuration data	403
8.2.5	Backing up methods	404
8.3	Determinations	406
8.3.1	Starting a determination	406
8.3.2	Searching for determinations	406
8.3.3	Filtering determinations	407
8.3.4	Displaying determinations of a batch	409
8.3.5	Signing a determination	409
8.3.6	Exporting determinations	411
8.3.7	Importing determinations	413
8.3.8	Deleting determinations	414
8.3.9	Making a determination version current	414
8.3.10	Reprocessing determinations	415
8.3.11	Printing a determination report	418
8.3.12	Printing a determination overview	419
8.4	Databases	420
8.4.1	Opening a database	420
8.4.2	Closing a database	421
8.4.3	Creating a database	421
8.4.4	Backing up a database	422
8.4.5	Restoring a database	424
8.4.6	Deleting a database	425

■ ■ ■ ■ ■ IX

1 Introduction

1.1 Welcome to StabNet

Introduction



StabNet

StabNet is a control and database software for stability measuring instruments.

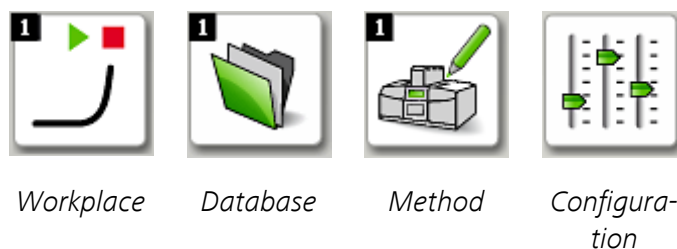
Overview of the main program features

- *User interface: easy to operate and configure*
- *Simple integration of instruments*
- *Convenient method editor*
- *Database-based program with client/server functionality*
- *A wide range of import and export functions*
- *FDA-compatibility in accordance with 21 CFR Part 11*
- *Comprehensive online help*
- *Program versions*

1.2 Operation

Introduction

The modern **user interface** makes it simple for the user to find his/her way around **StabNet**. All commands and control elements are located where you would expect. The bar on the left edge of the screen gives you access to the four basic elements of **StabNet**:



Depending on the access permissions, these buttons are either visible or invisible. The menu bar is in the upper part of the screen. It is also possible for the individual commands to be masked out, depending on the access permissions.

In the centre of the screen are the **information windows** with the settings, sample entry masks, live curves or results. This view can be set individually for each user with the aid of the Layout Manager. This means that the users only see the windows or buttons needed for their work. This reduces the introductory period for routine users to a minimum; incorrect operation as a result of overcrowded screens are also a thing of the past.

A wide range of tried and tested methods allow any user to create new methods quickly and simply and to use them immediately.

1.3 Instrument integration

Introduction

The following instruments can be operated with **StabNet**:

- 892 Professional Rancimat
- 893 Professional Biodiesel Rancimat
- 895 Professional PVC Thermomat

1.4 Method editor

Introduction

A method comprises measuring parameters, evaluation parameters and properties of the sample data, graph and comments. With the aid of the three templates, methods can be created quickly and easily. For most routine and automated tasks, there are tried and tested methods available. Just a few clicks and they are adapted and ready to use.

Overview of functions

- Method editor (*see Chapter 5.2, page 246*)
- Method manager (*see Chapter 5.3.1, page 253*)
- Separate management of access permissions for each method group (*see Chapter 5.4.2.3, page 266*)
- Templates for method development and calculations (*see Chapter 5.2.1, page 246*)
- Plausibility check for methods (*see Chapter 5.2.5, page 249*)

1.5 Database

Introduction

StabNet is based on an **object-oriented database** that has proven itself in practice. All program settings, the user administration, methods and templates are stored in the **configuration database** and the determination data is stored in the **determination databases** defined by the user. These databases can be installed locally on the computer reserved for measurements and make up a simple measurement system. **StabNet** is however scalable and grows with operational requirements. As soon as data security and central data management make it necessary, **StabNet** is installed as a **client/server configuration**. The **StabNet** database is then installed on a server. All measurement and office computers work as clients. All results are stored centrally in this network and can be accessed and processed by all Client PCs. All clients also access the same pool of methods.

The new database has all the major tools necessary for managing, searching for and grouping results. Quick filters allow the user to browse through thousands of determinations within seconds and to display the result clearly. Chart plots give a fast overview of the sequence of results based on time.

All options for **reprocessing** are available to the user.

Overview of functions

- Object-oriented client/server database (see Chapter 6.2.3.1, page 321).
- Layout manager for the database view (see Chapter 4.1.7, page 100).
- Quick filters (see Chapter 4.5.2.5.3, page 172).
- Efficient search functions (see Chapter 4.5.2.4, page 169).
- Access permissions control for every database (see Chapter 4.3.5.3, page 110).
- Automatic database backup (see Chapter 4.3.5.4, page 110).
- Fast overview of results or specially designed control charts (see Chapter 4.5.2.15, page 188).
- Curve overlay (see Chapter 4.5.2.16, page 197).
- Reprocess determinations (see Chapter 4.5.2.17, page 202).

1.6 Communication

Introduction

StabNet is communicative. Data generated in **StabNet** can be exported in XML and CSV format. Connection to LIMS systems on the market is thus not difficult. Export to long-term archiving systems such as NuGenesis SDMS or Scientific Software Cyberlab is also supported.

The **Report generator** provides a simple and flexible solution for creating analysis reports. The report generator allows you to freely define the report templates. It is therefore possible at any time to display one or more determinations in a choice of PDF format or as a printout.

A special feature is that **StabNet** can send messages, error messages or results from the method run to the user by **e-mail**.

Overview of functions

- Various export formats, e.g. XML, CSV, TXT (see *Chapter 4.4.3.2.1, page 156*).
- Report templates (see *Chapter 4.4.1.4.1.1, page 118*).
- E-mail functions for status messages, error messages or results (see *Chapter 2.6, page 62*).

1.7 Conformity

Introduction

StabNet also sets new standards with respect to the fulfilling of **GMP, GLP and FDA requirements**. The latest quality standards and validation procedures were implemented in developing and programming the software. **StabNet** has been designed to fulfill the FDA Guidance 21 CFR Part 11 and the customer-specific interpretations. This is confirmed by a Certificate of Conformity. A centralized user administration defines the access permissions for program functions and determinations, whereby any number of users with freely definable access profiles are possible. The system administrator can conveniently access the user administration from any **StabNet** client. Access to the software is password-protected and there is a choice of **StabNet** or Windows login.

The use of **digital signatures** makes it possible to sign methods and results. There are two signatures available with differing properties. With the first signature (Level 1, Review) the user confirms that he has programmed the method correctly or carried out the analysis correctly. With the second signature (Level 2, Release) the method or result is shared and protected against further modifications. It is thus possible to mirror customized workflows in **StabNet**.

All data is **version-controlled** and protected against unauthorized access, modification or deletion in the database. The database itself controls access to the data in network operation and provides archiving and restore functions.

All actions by the user and all major system processes are logged in the **Audit Trail**.

Conformity-relevant properties of StabNet

- Conformity is priority in development and validation.
- Central user administration (*see Chapter 6.2.1.1, page 303*).
- Detailed access permissions (*see Chapter 6.2.1.2.2, page 306*).
- Password protection under StabNet or Windows (*see Chapter 6.2.2.2, page 313*).
- Digital signature on two levels (*see Chapter 2.3, page 14*).
- One signature each for methods and results.
- Documentation of all method and result modifications (*see Chapter 4.5.2.13, page 186*).
- Traceability thanks to detailed Audit Trail (*see Chapter 6.4.1.1, page 336*).

1.8 Versions

Introduction

StabNet is available in **two sales versions** which differ with regard to the scope of functions. An **upgrade** is possible at any time.

	StabNet 1.0 full	StabNet 1.0 multi
Product	6.6068.102	6.6068.103
Maximum number of instru- ments per PC	4	4
Conformity functions	•	•
User administration	•	•
Security settings	•	•
Traceability ("Audit Trail")	•	•
Client/server support		•
Number of licenses	1	3
Additional licenses as an option		•
XML data export to LIMS	•	•
Upgrade possible	•	

1.9 Online help

Introduction

Calling up the help

StabNet has a very extensive and detailed online help that can be accessed in two ways:

- **General call** The **Help** ► **StabNet Help** menu item or the symbol  is used to open the online help with the topic *Welcome to StabNet*. From there you can jump to the desired topic via **Contents**, **Index**, **Search** or personal **Favorites**.
- **Context-sensitive call** With the **[F1]** function key on the keyboard you can jump directly to the topic which will show information on the active element in **StabNet** (dialog window, tab).

Symbols and conventions

The following symbols and formatting are used in this documentation:

6.5.2Device table	Link to another help topic in which information is shown for the marked term.
Method	Dialog text Designation for names of parameters, menu items, tabs and dialog windows in the software.
100	Designation for parameter values in input fields.
File ► New...	Menu or menu item; Path needed to reach a certain point in the program.
[Next]	Button
	Formula editor Formulae can be entered in fields with this symbol, and the formula editor opens when you click on the symbol (<i>see Chapter 2.4, page 19</i>).
1	Instruction step Carry out these steps in the sequence shown.
	Caution This symbol draws attention to possible damage to instruments or instrument parts.
	Note This symbol marks additional information and tips.

2 General program functions

2.1 Program parts

2.1.1 Program parts

General program functions

StabNet has four different program parts which can be opened by clicking on the corresponding symbol in the vertical bar on the left. The symbol for the opened program part is shown in color, the symbols for the other program parts in black and white. The menus, symbol bars and content of the main window depend on the program part currently opened.

Workplace program part



- Opening/closing workplaces
- Start of single and multiple determinations
- Determination of temperature correction and cell constant

Database program part



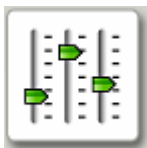
- Opening/Closing databases
- Managing databases
- Reprocessing
- Creating report templates

Method program part



- Opening/closing existing methods
- Creating new methods
- Managing methods

Configuration program part



- Configuration of devices, sensors and temperature coefficients
- Security settings
- User administration
- Program administration
- Audit Trail



Note

Access to the individual program parts can be deactivated in the user administration. In this case, the corresponding symbols are hidden.

2.1.2 Workplace - User interface

Program part: **Workplace**

Workplace symbol



Clicking on the workplace symbol in the vertical bar on the left opens the program part **Workplace** while at the same time the workplace symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of workplaces currently opened (*see Chapter 3.2.2, page 68*).

Elements

The user interface of the **Workplace** program part comprises the following elements:

- Main window
- Workplace-specific menu bar
- Workplace-specific toolbar
- Status bar

Status bar

A point in the color of the workplace appears at the lower right in the status bar for each opened workplace. Ongoing determinations are symbolized by a rotating wing.

2.1.3 Database - User interface

Program part: **Database**

Database symbol



Clicking on the database symbol in the vertical bar on the left opens the program part **Database** while at the same time the database symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of databases currently opened (*see Chapter 4.2.2, page 105*).

Elements

The user interface of the **Database** program part comprises the following elements:



- Database-specific menu bar.
- Database-specific toolbar.
- Main window in which up to 4 subwindows can be displayed.

2.1.4 Method - User interface

Program part: **Method**

Method symbol



Clicking on the method symbol in the vertical bar on the left opens the program part **Method** while at the same time the method symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of methods currently opened (*see Chapter 5.2.3, page 248*).

Elements

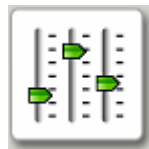
The user interface of the **Method** program part comprises the following elements:

- Method-specific menu bar.
- Method-specific toolbar.
- Main window, in which one method can be opened and shown.

2.1.5 Configuration - User interface

Program part: **Configuration**

Configuration symbol



Clicking on the configuration symbol in the vertical bar at the left opens the **Configuration** program part while, at the same time, the configuration symbol is shown in color.

Elements

The user interface of the **Configuration** program part comprises the following elements:

- Configuration-specific menu bar.
- Configuration-specific toolbar.
- Main window in which up to 3 subwindows can be displayed.

2.2.2 Logging in

Program parts: **Workplace / Database / Method / Configuration**

If both the options **Enforce login with user name** and **Enforce login with password** are activated in the **security settings**, the **Login** dialog window will appear every time the program is started and after each time the user logs out.

User

Entry of the short name of the user.

Entry	24 characters
-------	---------------

Password

Entry of the password.

Entry	24 characters
-------	---------------



Note

Users who log in for the first time or users whose status has been reset from **disabled** or **removed** back to **enabled**, must log in with the **Start password** (see Chapter 6.2.1.3.1, page 310) assigned by the administrator. Afterwards, the window **Change password** will automatically be opened, in which a new password needs to be entered.

[Change password]

Opens the window **Change password**, in which the new password needs to be entered and confirmed.

[Cancel]

The login is canceled, the program is terminated.

2.2.3 Logging out manually

Program parts: **Workplace** / Database / Method / Configuration ► File ► Logout...

A logged in user can logout at any time with the menu item **File ► Log-out....** The logout options defined in the **Security settings** apply. After the logout the **Login** window appears, allowing a new user to log in.

2.2.4 Logging out automatically

Program part: **Configuration**

If the automatic logout is activated in the **Security settings**, the user will then be logged out automatically after a definite waiting time if he does not perform any operating functions via the keyboard or mouse. Afterwards the **Login** window opens, in which however only the same user can log in again.

2.2.5 Changing the password

Dialog window: **Login** ► **[Change password]** ► **Change password**



Note

The password can be changed in **StabNet** only if the **Password monitoring by StabNet** option is set in the security settings.

[Change password]

This button in the **Login** dialog window opens the **Change password** window in which the new password needs to be entered and confirmed.



Note

The password always needs to be changed before the **Passwords expire every** of the password expires. For users who are logging in for the first time or users whose status has been reset from **disabled** or **removed** back to **enabled**, this window is automatically opened after logging in with the **Start password**. Here you also need to enter the **Start password** assigned by the Administrator for **Old password**.

Old password

Entry of the previous password.

Entry	24 characters
-------	---------------

New password

Entry of the new password. The password options are defined in the **Security settings** on the **Login/Password protection** tab.

Entry	24 characters
-------	---------------

Confirm password

Confirmation of the new password.

Entry	24 characters
-------	---------------

2.3 Electronic signatures

2.3.1 Rules for electronic signatures

Program parts: **Method / Database**

In StabNet, methods and determination can be **electronically signed** at two levels. The following rules apply for this:

- **Signature levels**

Methods and determinations can be signed at two levels (Signature Level 1 and Signature Level 2) by entering the user name and password.

- **Multiple signing**

Methods and determinations can be signed several times at each level. All signatures are saved and documented in the Audit Trail.

- **Signing at Level 1**

If Level 2 has been signed then no more signatures are possible at Level 1.

- **Signing at Level 2**

Level 2 can only be signed if signatures already exist at Level 1.

- **Different users**

The same user may sign only on either Level 1 or Level 2.

- Reason and comment

Each signature must be accompanied by a reason selected from predefined default reasons. Additionally, a further comment can be entered.

- **Saved data**

For each signature, signature date, user name, full name, reason and comments are saved.

- **Deleting signatures 1**

Signatures at Level 1 are automatically deleted again when creating a new version.

- **Deleting signatures 2**

Signatures at Level 2 can only be deleted by users who have the appropriate rights.

- **Signing methods**

Methods can only be signed individually.

- **Signature options**

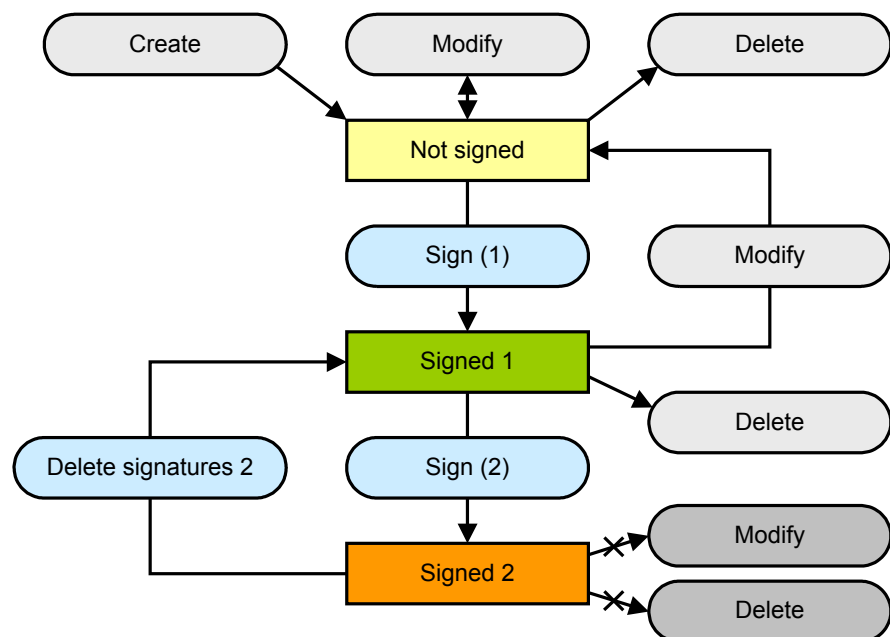
The options for electronic signatures are set in the **Signatures** tab in the **Security settings** dialog window.

2.3.2 Procedure for electronic signatures

Program parts: **Database / Method**

Methods and determinations exhibit one of the following three statuses in relation to signatures (see flow diagram):

- **Not signed**
Methods and determinations which are not signed can be deleted and changed, a new version being created at each change.
- **Signed (1)**
When signing methods and determinations at Level 1, no new versions are generated. If methods and determinations signed at Level 1 are changed, a new version is generated, which no longer contains any signatures. Methods and determinations signed at Level 1 can be deleted.
- **Signed (2)**
When signing methods and determinations at Level 2, no new versions are generated. Methods and determinations signed at Level 2 can neither be changed nor deleted. However, it is possible to delete the signatures (2), whereby the signatures (1) are retained.



2.3.3 Signature Level 1

Dialog window: **Database ▶ Determinations ▶ Sign ▶ Signature 1... ▶ Signature Level 1**

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Signature 1... ▶ Signature Level 1**

Methods or determinations can be signed at level 1 in the **Signature Level 1** window.



Note

Methods or determinations which have been signed at level 1 can be modified and deleted. If the modified method or determination is saved as a new version, then all existing signatures will be deleted automatically, i.e. the method or determination must be signed again.

Info

Display of information for signing and deleting signatures. The following messages are possible:

Selection	Signature possible (signature 2 exists)	Signature 1 not possible (accessed by other client)
1		
2		
3		
4		
5		
6		
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8		
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100		

Signature possible

The selected method or determination can be signed.

Signature 1 not possible (signature 2 exists)

The selected method or determination can no longer be signed at level 1 as it has already been signed at level 2.

Signature not possible (accessed by other client)

The selected method or determination cannot be signed as it is already marked to be signed on a different client.

User

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Password

Entry of the password.

Entry	24 characters
-------	---------------

Reason

Selection from the **Default reasons** defined in the **Security settings** dialog window for the **Signature level 1** category.

Selection	'Selection from the default reasons'
-----------	--------------------------------------

Comment

Entry of a comment on the signature.

Entry	1000 characters
-------	-----------------

[Sign]

Sign the method or determination. The window remains open.



Entry	24 characters
Reason	Selection from the Default reasons defined in the Security settings dialog window for the Signature level 2 category.
Selection	'Selection from the default reasons'
Comment	Entry of a comment on the signature.
Entry	1000 characters
[Sign]	Sign the method or determination. The window remains open.



Note

Methods or determinations can only be signed at level 2 if the user belongs to a user group with the corresponding permission.

2.3.5 Deleting signatures level 2

Dialog window: **Database ▶ Determinations ▶ Sign ▶ Delete signatures
2... ▶ Delete Signatures Level 2**

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Delete signatures 2... ▶ Delete Signatures Level 2**

All signatures on level 2 for the selected method or determination can be deleted in the **Delete Signatures Level 2** window.

User	Entry of the user name (short name).
	Entry 24 characters
Password	Entry of the password.
	Entry 24 characters
Reason	Selection from the Default reasons defined in the Security settings dialog window for the Signature level 2 category.
	Selection 'Selection from the default reasons'

- **Text**
Text must be enclosed in quotation marks " (e.g. **"my text"**).
- **Variables**
Variables must be entered and ended with an apostrophe ' (e.g. **'RS.IND'**).
- **Time**
Time indications must always be made with the aid of the **Time()** function.

Entry using the function buttons

Mathematical operators and parentheses can simply be added to the formula using the corresponding buttons. A space is automatically inserted before and after the sign.

	Addition		Equal to		AND
	Subtraction		Greater than		OR
	Multiplication		Less than		Round parentheses
	Division		Not equal to		Curly brackets: Request values of variables with index, the Index is in curly brackets
	Potentiation		Less than or equal to		Undo last action
			Greater than or equal to		Redo last action

Entry via selection

The element selected in the **Variables** or **Operators** fields can be added to the formula by double clicking or **[Insert]**.

2.4.2 Calculation algorithms

Dialog window: **Formula editor**

Numerical format

The standard IEEE 754 (1985) for binary floating point arithmetic is implemented in "double precision" (64 Bit) in the software.

Rounding-off process

Measured values and results are rounded off symmetrically (commercial rounding). I.e., **1, 2, 3, 4** are always rounded down whereas **5, 6, 7, 8, 9** are always rounded up.

Examples

2.33 yields **2.3**

2.35 yields **2.4**

2.47 yields **2.5**

-2.38 yields **-2.4**

-2.45 yields **-2.5**

Statistics

The mean value, absolute and relative standard deviation of results R are calculated using the following formulas:

Mean value

$$\bar{x}_k = \frac{1}{n} \cdot \sum_{i=1}^n R_{k,i}$$

Absolute standard deviation

$$Sabs_k = + \sqrt{\frac{\sum_{i=1}^n (R_{k,i} - \bar{x}_k)^2}{n-1}}$$

Relative standard deviation (in %)

$$Srel_k = 100 \cdot \frac{Sabs_k}{\bar{x}_k}$$

The statistical calculations of the software have been implemented so that they can be checked to as great a degree as possible by the user. The individual values are therefore incorporated in the statistics with full accuracy.

It is not the number of decimal places which is decisive for the accuracy of the calculations, but rather the number of significant digits of the decimal numbers displayed. As a result of the binary 64-bit numerical format implemented on the basis of the IEEE 754 standard, the resulting decimal numbers have 15 reliable significant decimal places.

You can influence the number of significant digits by selecting the unit and the number of decimal places. As the result unit to be set sometimes contains the prefix "milli" as well as the actual physical unit, the number of significant places changes accordingly by three places during such a conversion.

Example

The result displayed **1234.56789158763 mg/L** has 15 reliable digits. It should be rounded off to three decimal places according to the above rounding-off process:

1234.568 mg/L (7 significant places, 3 of them decimal places)

The unit "**g/L**" means that the same result **1.23456789158763 g/L** is also rounded off to three decimal places:

1.235 g/L (4 significant places, 3 of them decimal places)

The number of significant digits has now been reduced by three to four digits by omitting the prefix "milli".



Note

The above losses of accuracy by rounding off in the area of the maximum certain places are only relevant theoretically. Most of the time they are lower by several orders of magnitude than – as an example – the uncertainties resulting from sample size.

2.4.3 Variables

2.4.3.1 Variables - Overview

Dialog window: **Formula editor**

Variables are automatically generated by the program during or at the end of the determination. You can use the formula editor to access these and either use the values for further calculations or output them as a result.

Variable types

The following types of variables are differentiated:

Name	Syntax	Description
<i>Sample data variables</i>	'SD.Variable name'	Sample data variables contain all of the sample data of the determination.
<i>Result variables</i>	'RS.Result name'	Result variables are automatically generated during the evaluation either by the program or from the results defined by the user.
<i>Determination variables</i>	'DV.Variable name'	Determination variables are general variables that are generated during the determination.
<i>System variables</i>	'SV.Variable name'	System variables are general variables which are adopted in the determination at the start of the determination.

Entering variables

Variables must always be entered and ended with an apostrophe ' (e.g. **'SD.IDENT'**).



2.4.3.2 Sample data variables

Dialog window: **Formula editor** ▶ **Variables**

Sample data variables are variables that contain the sample data of the determination. The **Variables** field of the formula editor lists all of the **Sample data variables** which are available for the current method.

Syntax

SD.Variable name'

Examples: **'SD.IDENT'**, **'SD.INFO3'**

Method variables can be selected directly in the formula editor under **Variables ► Sample data variables** so as to avoid syntax errors.

Sample data variables

Variable name	Description
METHOD	Method for the sample determination (Text).
IDENT	Identification of the sample (Text, Number, Date).
INFO1	Sample identification 1 (Text, Number, Date).
INFO2	Sample identification 2 (Text, Number, Date).
INFO3	Sample identification 3 (Text, Number, Date).

2.4.3.3 Result variables

Dialog window: **Formula editor** ► **Variables**

Some result variables are automatically generated by the program. In addition, the user can also define the result variables (user-defined results) that can then also be used in the Formula editor for further calculations.

Syntax

RS.Result name'

Examples: 'RS.IND', 'RS.RS07'

Method variables can be selected directly in the formula editor under **Variables ► Results** so as to avoid syntax errors.

Result variables

Result name	Description
IND	Induction time
STAB	Stability time
STD	Standard time
RS01	Result 1 (user-defined).
RS02	Result 2 (user-defined).
RS03	Result 3 (user-defined).
...	
RS25	Result 25 (user-defined).

2.4.3.4 Determination variables

Dialog window: **Formula editor** ► **Variables**

Determination variables are general variables that are generated in the method run. The **Variables** field of the formula editor lists the **Determination variables** which are available for the current method, sorted according to name.

Syntax

'DV.Variable name'

Examples: **'DV.DUR'**, **'DV.STT'**

Determination variables can be selected directly in the formula editor under **Variables ► Determination variables** so as to avoid syntax errors.

Available determination variables

Variable name	Description
DUR	Duration of the determination in s (Number).
STT	Moment at which the determination was started (Date).
CONDSTART	Conductivity in $\mu\text{S}/\text{cm}$ at the time of the start of the determination (Number).
CONDEND	Conductivity in $\mu\text{S}/\text{cm}$ at the time of the end of the determination (Number).

2.4.3.5 System variables

Dialog window: **Formula editor** ► **Variables**

System variables are general variables which are adopted in the determination at the start of the determination. The **Variables** field of the formula editor lists all of the **System variables** which are available for the current method.

Syntax

'SV.Variable name'

Examples: **'SV.USN'**, **'SV.FUN'**

System variables can be selected directly in the formula editor under **Variables ▶ System variables** so as to avoid syntax errors.

Available system variables

Variable name	Description
USN	Short name of the logged-in user (Text).
FUN	Full name of the logged-in user (Text).

2.4.4 Operators/Functions

2.4.4.1 Operators/Functions - Overview

Dialog window: **Formula editor** ► **Operators/Functions**

Overview of the operators and functions

Operators	Functions
Arithmetic: - Addition (+) - Subtraction (-) - Multiplication (*) - Division (/) - Potentialiation (^)	Arithmetic: - Exponential function (Exp) - Natural logarithm (Ln) - Common logarithm (Log) - Square root (Sqrt) - Absolute value (Abs) - Fraction (Frac) - Integer (Int) - Round integer (Round) - Sign (Sign) - Quantiles of the Student's t-distribution (Tinv)
Logic: - AND - OR	Date/Time: - Time() - Time(Date) - Time(Date+Time)

Operators	Functions
Comparison: ▪ <i>Equal to (=)</i> ▪ <i>Greater than (>)</i> ▪ <i>Greater than or equal to (>=)</i> ▪ <i>Less than (<)</i> ▪ <i>Less than or equal to (<=)</i> ▪ <i>Not equal to (<>)</i>	Type conversion: ▪ <i>NumberToText</i> ▪ <i>NumberToTime</i> ▪ <i>TextToNumber</i> ▪ <i>TextToTime</i> ▪ <i>TimeToNumber</i> ▪ <i>TimeToText</i>
	Text: ▪ <i>TextPosition</i> ▪ <i>SubText</i> ▪ <i>Trim</i>
	Miscellaneous: ▪ <i>Case</i> ▪ <i>Error</i>

Priority rules of the operators

The operators are evaluated in the order in which they are listed in the table below. In order to attain the required order, it may be necessary to place operands in parentheses.

	Operators
Arithmetic	$\wedge$
	$*, /$
	$+, -$
Comparison	$<, <=, >, >=$
Logic	AND, OR

2.4.4.2 Arithmetical operators

2.4.4.2.1 Addition

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 + Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type.

Examples

Operand1	Operand2	Result	Example	Remark
both operands of the same type:				
Number	Number	Number	1.2 + 3 = 4.2	–

Operands of a different type: The operand which does not correspond to the result type is converted to the relevant result type before the operation.

Dialog window: **Formula editor** ► **Operators/Functions**

Operand1 – Operand2

Examples

both operands of the same type:

Operand1	Operand2	Result	Example	Remark
Operands of a different type: The operand which does not correspond to the result type is converted to the relevant result type before the operation.				
Number	Text	Text	1.2 – "Metrohm" = invalid	This operation is not allowed.
Text	Number	Text	"Metrohm" – 1.2 = invalid	This operation is not allowed.
Number	Time	Number	2.0 – Time(1999;10;7) = – 36437.917 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time
Time	Number	Number	Time(1999;10;7) – 2.5 = 36437.917 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time
Text	Time	Text	"Metrohm" – Time(1999;10;7) = invalid	This operation is not allowed.
Time	Text	Text	Time(1999;10;7) – "Metrohm" = invalid	This operation is not allowed.

2.4.4.2.3 Multiplication

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 * Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type.

Examples

Operand1	Operand2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	1.2 * 3 = 3.6	–
Text	Text	Text	"Metrohm" * "AG" = invalid	This operation is not allowed.
Time	Time	Number	Time(1998;05;06) * Time(1902;02;03) = 27478004.545 (for UTC+1 or +2 in the summer time)	Result: Number of days calculated from December 1899, dependent on the system time
Operands of a different type: The operand which does not correspond to the result type is converted to the relevant result type before the operation.				
Number	Text	Text	2 * "Metrohm" = "MetrohmMetrohm"	–
Text	Number	Text	"Metrohm" * 2 = "MetrohmMetrohm"	–
Number	Time	Number	2.0 * Time(1999;10;7) = 72879.833 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time

Operand1	Operand2	Result	Example	Remark
Time	Number	Number	Time(1999;10;7) * 2.0 = 72879.833 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time
Text	Time	Text	"Metrohm" * Time(1999;10;7) = invalid	This operation is not allowed.
Time	Text	Text	Time(1999;10;7) * "Metrohm" = invalid	This operation is not allowed.

2.4.4.2.4 Division

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 / Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type.

Examples

Operand1	Operand2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	1.2 / 3 = 0.4	Operand2 must not be zero!
Text	Text	Text	"Metrohm" / "AG" = invalid	This operation is not allowed.
Time	Time	Number	Time(1998;04;06) / Time(1964;02;03) = 1.533 (for UTC +1 or +2 in the summer time)	Result: Number of days calculated from December 1899, dependent on the system time
Operands of a different type: The operand which does not correspond to the result type is converted to the relevant result type before the operation.				
Number	Text	Text	1.2 / "Metrohm" = invalid	This operation is not allowed.
Text	Number	Text	"Metrohm" / 1.2 = invalid	This operation is not allowed.
Number	Time	Number	10000 / Time(1999;10;7) = 0.274 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time
Time	Number	Number	Time(1999;02;17) / 10000 = 3.621 (for UTC+1)	Result: Number of days calculated from December 1899, dependent on the system time
Text	Time	Text	"Metrohm" / Time(1999;10;7) = invalid	This operation is not allowed.
Time	Text	Text	Time(1999;10;7) / "Metrohm" = invalid	This operation is not allowed.

Operand1	Operand2	Result
1	1	1
0	1	0
1	0	0
0	0	0

Examples

Oper-and1	Oper-and2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 AND 4 --> 1 4 AND 0 --> 0	Numbers greater than 0 are interpreted as 1 (true).
Text	Text	Number	"Metrohm" AND "AG" --> 1 "" AND "AG" --> 0	An empty character string ("") is interpreted as 0 (false), everything else as 1 (true). The first operation therefore corresponds to 1 AND 1 --> 1 .
Time	Time	Number	Time(1999;10;07) AND Time(1999;10;07) --> 1	Time() : <i>Time(Date)</i>
Operands of a different type:				
Number	Text	Number	1.2 AND "1.2" --> 1 0 AND "1" --> 1 0 AND "0" --> 1 0 AND "" --> 0	Before the operation, the operand of the Number type is converted to the Text type, as a conversion from Text to Number is not useful. During the second operation, the 0 is therefore converted to "0" , which corresponds to the logical value 1 (true), as every character string that is not empty is interpreted as 1.
Text	Number	Number	"Metrohm" AND 1.2 --> 1	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 AND Time(1999;10;7) --> 1 0 AND Time(1999;10;07) --> 0	Before the operation, the operand of the Date/Time type is converted to Number and all dates since December 30, 1899 are interpreted as 1 (true).
Time	Number	Number	Time(1999;10;7) AND 2.5 --> 1	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" AND Time(1999;10;7) --> 1 "" AND Time(1999;10;07) --> 0	Before the operation is carried out, the operand of the Date/Time type is converted to the Text type, and every non-empty character string is interpreted as 1 (true).
Time	Text	Number	Time(1999;10;7) AND "Metrohm" --> 1	The same rules apply here as for the previous operation.

2.4.4.3.2 OR

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 OR Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false). The following cases are possible:

Operand1	Operand2	Result
1	1	1
0	1	1
1	0	1
0	0	0

Examples

Operand1	Operand2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 OR 4 --> 1 4 OR 0 --> 1	Numbers greater than 1 are automatically interpreted as 1 (true)
Text	Text	Number	"Metrohm" OR "AG" --> 1 "" OR "Metrohm" --> 1 "" OR "" --> 0	An empty character string ("") is interpreted as 0 (false), everything else as 1 (true). The first operation therefore corresponds to 1 OR 1 --> 1
Time	Time	Number	Time(1999;10;07) OR Time(1964;02;03) --> 1	Time() : see <i>Time(Date)</i>
Operands of a different type: The operand which does not correspond to the result type is converted to the relevant result type before the operation.				
Number	Text	Number	1.2 OR "1.2" --> 1 0 OR "" --> 1	Before the operation, the operand of the Number type is converted to the Text type, as a conversion from Text to Number is not useful. During the second operation, the 0 is therefore converted to "0", which corresponds to the logical value 1 (true), as every character string that is not empty is interpreted as 1.
Text	Number	Number	"Metrohm" OR 1.2 --> 1	The same rules apply here as for the previous operation.

Operand1	Operand2	Result	Example	Remark
Number	Time	Number	2.0 OR Time(1999;10;7) --> 1 0 OR Time(1964;02;03) --> 1	Before the operation, the operand of the Date/Time type is converted to Number and all dates since December 30, 1899 are interpreted as 1 (true).
Time	Number	Number	Time(1999;10;7) OR 2.5 --> 1	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" OR Time(1999;10;7) --> 1	Before the operation is carried out, the operand of the Date/Time type is converted to the Text type, and every non-empty character string is interpreted as 1 (true).
Time	Text	Number	Time(1999;10;7) OR "Metrohm" --> 1	The same rules apply here as for the previous operation.

2.4.4.4 Relational operators

2.4.4.4.1 Equal to

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 = Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper- and1	Oper- and2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 = 5 --> 1 4 = 5 --> 0	–
Text	Text	Number	"Metrohm" = "AG" --> 0 "aG" = "AG" --> 0	When making a comparison between two texts, the ASCII value of the character string is compared (<i>see Chapter 2.4.4.10, page 57</i>). Attention: Uppercase and lowercase letters have different values!
Time	Time	Number	Time(1998;04;06) = Time(1964;02;03) --> 0	(<i>see Chapter 2.4.4.6.2, page 45</i>)
Operands of a different type:				
Number	Text	Number	1.2 = "1.2" --> 11.2 = "Metrohm" --> 0	Before the relational operation, the Number is converted to Text , afterwards the texts are compared according to ASCII value (<i>see Chapter 2.4.4.10, page 57</i>).

Oper-and1	Oper-and2	Result	Example	Remark
Text	Number	Number	" Metrohm " = 1.2 --> 0	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 = Time(1999;10;07) --> 0	Before the relational operation, the operand of the Date/Time type is converted to Text . During execution of the operation, the exact value is always used after this conversion, even if maximum 5 places after the comma can be displayed (<i>see Chapter 2.4.4.7.5, page 50</i>).
Time	Number	Number	Time(1999;10;7) = 2.0 --> 0	The same rules apply here as for the previous operation.
Text	Time	Number	" Metrohm " = Time(1999;10;07) --> 0	Before the operation, the operand is converted from Date/Time to Text (in this example: " 1999-10-07 00:00:00 UTC+2 "), afterwards the texts are compared according to ASCII value (<i>see Chapter 2.4.4.10, page 57</i>).
Time	Text	Number	Time(1999;10;07) = "Metrohm" --> 0	The same rules apply here as for the previous operation.

2.4.4.4.2 Greater than

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 > Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper- and1	Oper- and2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 > 4 --> 1 4 > 5 --> 0	–
Text	Text	Number	"Metrohm" > "AG" --> 1 "Aarau" > "Zug" --> 0	When making a comparison between two texts, the ASCII value of the character string is compared (<i>see Chapter 2.4.4.10, page 57</i>). Attention: Uppercase and lowercase letters have different values!
Time	Time	Number	Time(1998;04;06) > Time(1964;02;03) --> 1	(<i>see Chapter 2.4.4.6.2, page 45</i>)

Oper- and1	Oper- and2	Result	Example	Remark
Operands of a different type:				
Number	Text	Number	1.2 > "Metrohm" --> 01.23 > "1.2" --> 1	Before the relational operation, the Number is converted to Text , afterwards the texts are compared according to ASCII value (see Chapter 2.4.4.10, page 57).
Text	Number	Number	"Metrohm" > 1.2 --> 1	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 > Time(1999;10;07) --> 0	Before the comparison, the operand is converted from Date/Time to a Number .
Time	Number	Number	Time(1999;10;07) > 2.0 --> 1	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" > Time(1999;10;07) --> 1	Before the operation, the operand is converted from Date/Time to Text (in this example: "1999-10-07 00:00:00 UTC +2"), afterwards the texts are compared according to ASCII value (see Chapter 2.4.4.10, page 57).
Time	Text	Number	Time(1999;10;7) > "Metrohm" --> 0	The same rules apply here as for the previous operation.

2.4.4.4.3 Greater than or equal to

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 >= Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper- and1	Oper- and2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 >= 4 --> 1 4 >= 5 --> 0	–
Text	Text	Number	"Metrohm" >= "AG" --> 1	When making a comparison between two texts, the ASCII value of the character string is compared (<i>see Chapter 2.4.4.10, page 57</i>). Attention: Uppercase and lowercase letters have different values!

Oper- and1	Oper- and2	Result	Example	Remark
Time	Time	Number	Time(1998;04;06) >= Time(1964;02;03) --> 1	<i>(see Chapter 2.4.4.6.2, page 45)</i>
Operands of a different type:				
Number	Text	Number	1.2 >= "1.2" --> 11.2 >= "Metrohm" --> 0	Before the relational operation, the Number is converted to Text , afterwards the texts are compared according to ASCII value <i>(see Chapter 2.4.4.10, page 57)</i> .
Text	Number	Number	"Metrohm" >= 1.2 --> 1	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 >= Time(1999;10;07) --> 0	Before the comparison, the operand is converted from Date/Time to a Number .
Time	Number	Number	Time(1999;10;07) >= 2.0 --> 1	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" >= Time(1999;10;07) --> 1	Before the operation, the operand is converted from Date/Time to Text (in this example: "1999-10-07 00:00:00 UTC +2"), afterwards the texts are compared according to ASCII value <i>(see Chapter 2.4.4.10, page 57)</i> .
Time	Text	Number	Time(1999;10;7) >= "Metrohm" --> 0	The same rules apply here as for the previous operation.

2.4.4.4.4 Less than

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 < Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper-and1	Oper-and2	Result	Example	Remark
Operands of the same type:				
Number	Number	Number	5 < 4 --> 0 4 < 5 --> 1	–

Oper- and1	Oper- and2	Result	Example	Remark
Text	Text	Number	"Metrohm" < "AG" --> 0	When making a comparison between two texts, the ASCII value of the character string is compared (see Chapter 2.4.4.10, page 57). Attention: Uppercase and lowercase letters have different values!
Time	Time	Number	Time(1998;04;06) < Time(1964;02;03) --> 0	(see Chapter 2.4.4.6.2, page 45)
Operands of a different type:				
Number	Text	Number	1.2 < "Metrohm" --> 11.2 < "1" --> 0	Before the relational operation, the Number is converted to Text , afterwards the texts are compared according to ASCII value (see Chapter 2.4.4.10, page 57).
Text	Number	Number	"Metrohm" < 1.2 --> 0	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 < Time(1999;10;07) --> 1	Before the comparison, the operand is converted from Date/Time to a Number .
Time	Number	Number	Time(1999;10;07) < 2.0 --> 0	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" < Time(1999;10;07) --> 0	Before the operation, the operand is converted from Date/Time to Text (in this example: "1999-10-07 00:00:00 UTC +2"), afterwards the texts are compared according to ASCII value (see Chapter 2.4.4.10, page 57).
Time	Text	Number	Time(1999;10;7) < "Metrohm" --> 1	The same rules apply here as for the previous operation.

2.4.4.4.5 Less than or equal to

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 <= Operand2

The operands can be entered either directly or as variables and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper- and1	Oper- and2	Result	Example	Remark
Operands of the same type:				

Oper- and1	Oper- and2	Result	Example	Remark
Number	Number	Number	$5 \leq 4 \rightarrow 0$ $4 \leq 5 \rightarrow 1$	–
Text	Text	Number	"Metrohm" <= "AG" --> 0	When making a comparison between two texts, the ASCII value of the character string is compared (<i>see Chapter 2.4.4.10, page 57</i>). Attention: Uppercase and lowercase letters have different values!
Time	Time	Number	Time(1998;04;06) <= Time(1964;02;03) --> 0	(<i>see Chapter 2.4.4.6.2, page 45</i>)
Operands of a different type:				
Number	Text	Number	2 <= "1.2" --> 0 1.2 <= "Metrohm" --> 1	Before the relational operation, the Number is converted to Text , afterwards the texts are compared according to ASCII value (<i>see Chapter 2.4.4.10, page 57</i>).
Text	Number	Number	"Metrohm" <= 1.2 --> 0	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 <= Time(1999;10;07) --> 1	Before the comparison, the operand is converted from Date/Time to a Number .
Time	Number	Number	Time(1999;10;07) <= 2.0 --> 0	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" <= Time(1999;10;07) --> 0	Before the operation, the operand is converted from Date/Time to Text (in this example: "1999.10.07"), afterwards the texts are compared according to ASCII value (<i>see Chapter 2.4.4.10, page 57</i>).
Time	Text	Number	Time(1999;10;7) <= "Metrohm" --> 1	The same rules apply here as for the previous operation.

2.4.4.4.6 Not equal to

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

Operand1 <> Operand2

The operands can be entered either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. The result type is always a number (**1** = true, **0** = false).

Examples

Oper-and1	Oper-and2	Result	Example	Remark
Operands of the same type:				

[illegible][illegible]

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

Exp(1.5) = 4.48169

Exp('CV.AverageTemp') = Power of the exponent (common variable **CV.AverageTemp**) for base e

2.4.4.5.2 Natural logarithm

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

$$y = \text{Ln}(\text{number})$$

Returns the logarithm of the entered number for base e. Alternative notation for $y = \log_e(\text{number})$, whereby e is the Euler number ($e = 2.71828\dots$).

Parameters

Number > 0

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

$$\ln(3) = 1.09861$$

Ln('CV.AverageTemp') = Natural logarithm of the value of the common variable **CV.AverageTemp** for base e

2.4.4.5.3 Common logarithm

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

$$y = \text{Log}(\text{number})$$

Returns the logarithm of the entered number for base 10. Alternative notation for $y = \log_{10}(\text{number})$.

Parameters

Number > 0

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

2.4.4.5.6 Fraction

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Frac(number)

Returns the fraction of the entered number.



Note

In the results properties, the number of **Decimal places** of the result must always be given, as otherwise the fraction cannot be displayed.

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

$$\text{Frac}(-55.325) = 0.325$$

Frac('CV.AverageTemp') = Value of the common variable **CV.AverageTemp** without sign

2.4.4.5.7 Integer

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Int(number)

Returns the integer of the entered number.

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

$$\text{Int}(-55.325) = -55$$

Int('CV.AverageTemp') = Integer of the value of the common variable **CV.AverageTemp**

Rounding integer

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Round(number)

Returns the rounded value of the entered number as a whole number.



Note

If the first decimal place is 5 or greater, the number is rounded up to the next whole number (commercial rounding).

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

Round(-55.5259) = -56

Round('CV.AverageTemp') = Rounded value of the common variable
CV.AverageTemp

2.4.4.5.9 Sign

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Sign(number)

Returns the sign of the entered number: **1** for a positive number, **-1** for a negative number.

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.

Examples

Sign(-55.3) = -1

$$\text{Sign}(26.115) = 1$$

Titer determination: 0.991, 1.021, 0.995, 1.003, 1.007, 0.993, 0.998, 1.015, 1.003, 0.985

Mean value = 1.001

Standard deviation = 0.0111

Student's t-quantiles for a probability of 95% = 2.26

Confidence interval of the titer = 1.001 ± 0.008

2.4.4.6 Date/time functions

2.4.4.6.1 Time()

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Time()

Returns the current date and the current time.

Parameters

none

Return value

Current date and current time in the **yyyy-mm-dd hh:mm:ss UTC ±xx** format



Note

UTC = Coordinated Universal Time, from which the times in the various time zones of the earth are derived. CET (Central European Time) is equal to UTC plus 1 hour, in the summer time UTC plus 2 hours.

2.4.4.6.2 Time(Date)

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Time(year; month; day)

Returns the entered figures in the **Date/Time** format.

Parameters

year **00 - 99** or **1000 - 9999**

month 1 - 12

day 1 - 31

A parameter can be indicated either directly as a number or as a variable of the **Number** type. If the parameter does not correspond to the expected

ted type, it will automatically be converted to it. If this is not possible, the result of this operation is returned as **invalid**.



Note

Only the integral part is used for all parameters.

A variable of the **Date/Time** type cannot be transferred as a parameter here.

Both for the automatic and explicit conversion of a **Time** to the **Number** type, the number of days are counted since **December 30, 1899** at **01 hours**.

Attention: December 30, 1899 01 hours = 0.00000 days, this number is **rounded** off to 5 decimal places, but a relational operation for example is carried out with the exact value!

Return value

Date/Time in the **yyyy-mm-dd hh:mm:ss UTC ±xx** format



Note

UTC = Coordinated Universal Time, from which the times in the various time zones of the earth are derived. CET (Central European Time) is equal to UTC plus 1 hour, in the summer time UTC plus 2 hours.

Examples

Time(2004;02;02) = 2004-02-02 00:00:00 UTC +1 (dependent on the system time)

Time('CV.TestYear';'CV.TestMonth';'CV.TestDay') = Date comprised of the common variables

2.4.4.6.3 Time(Date + Time)

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = Time(year; month; day; hour; minute; second)

Returns the entered numbers in the **Date/Time** format.

Parameters

year **00 - 99** or **1000 - 9999**

month 1 - 12

day 1 - 31

second 0 - 59

2.4.4.7 Type Conversion functions

2.4.4.7.1 NumberToText

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = NumberToText(number)

Returns the entered number as **Text**.

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type.

Examples

NumberToText(-55.3) = -55.3

NumberToText('CV.AverageTemp') = Value of the common variable (AverageTemp) as **Text**

2.4.4.7.2 NumberToTime

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = NumberToTime(number)

Returns the entered number as **Date/Time**, whereby the number is interpreted as the number of days since December 30, 1899 at 01 hours.

Parameters

Number

The parameter can be indicated either directly as a number or as a variable of the **Number** type.

Examples

NumberToTime(35545.526) = 1997-05-25 14:37:26 UTC+2
(dependent on the system time)

NumberToTime(35780.55) = 1997-12-16 14:12:00 UTC+1 (dependent on the system time)

NumberToTime('CV.TestDate') = Value of the common variable (Test-Date) as **Date/Time**

TextToNumber

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = TextToNumber(Text)

Returns the entered text as a **number**.

Parameters

Text

The parameter may only contain **numerical characters** or variables of the **Text** type, as otherwise a type conversion is not possible. The result of this conversion or the calculation would then be **invalid**. In addition, text must be marked by **quotation marks**.

Examples

TextToNumber("-55.3") = -55.3

TextToNumber('CV.AverageTemp') = Value of the variables (Average-Temp) as **Number**

TextToNumber('MV.ID1') = entered text of **ID 1** as **Number**

TextToTime

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = TextToTime(Text;Format)

Returns the entered text as a **Date/Time**.

Parameters

Text

The parameter may only contain **numerical characters** or variables of the **Text** type, as otherwise a type conversion is not possible (Result = **invalid**). You can use the following characters as the **separator** between Year, Month etc.: slash (/), full stop (.), minus (-), semicolon (;), colon (:), space and comma. You can determine the **order** of the individual data yourself, but must indicate this in the **Format** parameter.

Format

Indicates in which format or order the text has been entered. This parameter must be highlighted by **quotation marks** and can comprise the following code characters:

Characters	Meaning
y	Year

Characters	Meaning
M	Month
d	Day
H	Hour 0 - 23
h	Hour AM/PM
m	Minute
s	Second
a	AM/PM marking



Note

If you indicate the time in the **AM/PM** format, it is necessary, in addition to the formatting character **h**, to use the AM/PM marking **a** (see first example below).

Examples

TextToTime("2004-12-3 5:22:01 PM";"yMdhmsa") = 2004-12-03 17:22:01 UTC+1 (dependent on the system time)

TextToTime("12-15-01 2001:3:5";"HmsyMd") = 2001-03-05 12:15:01 UTC+1 (dependent on the system time)

TextToTime('CV.TestDate';'CV.TestFormat') = Values of the common variables in the time format indicated

TextToTime('MV.ID1';'CV.TestFormat') = entered text of ID1 in the time format indicated

2.4.4.7.5 TimeToNumber

Dialog window: **Formula editor** ► **Operators/Functions**

Syntax

y = TimeToNumber(Time)

Returns the entered time as a **Number**.

2.5 Editing

2.5.1 Selecting the date

Dialog window: **Select date**

The **Select date** dialog window serves for entering a date in a field and is opened with the  button.

2.5.2 Text editor

Dialog window: **Text editor**

The text editor serves for entering formatted text in text fields and is opened with the  button.

The toolbar of the text editor includes the following functions:



Cut selected text and copy it to the clipboard.



Copy selected text to the clipboard.



Insert text from the clipboard.



Open editor for entering a hyperlink (*see Chapter 2.5.3, page 60*).



Open formula editor for entering calculation formulas (*see Chapter 2.4, page 19*).

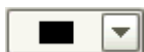


Note

In order for results of formulas of the **Date** type to be output correctly, for text windows they must be converted to **Text** using the function **TimeToText** (*see Chapter 2.4.4.7.6, page 51*).



Font size in pt.



Select font color.

Program part: **Workplace / Database / Method / Configuration**

Program part: **Workplace**



Program part: **Workplace**

■■■■■■■ **67**

Workplaces

- Opening a new workplace
- Selecting a workplace
- Closing a workplace

Determination

- *Selecting a method*
- *Switching on / switching off heater*
- *Switching on / switching off gas flow*
- *Carrying out determination*
- *Modifying sample data live*

Tools

- *Defining actions at the end of the determination*
- *Changing stop criteria*
- *Determining the temperature correction*
- *Determining the cell constant*
- *Defining the automatic heater start*
- *Defining text templates*

3.2 Workplace management

3.2.1 Opening a new workplace

Dialog window: **Workplace** ▶ **File** ▶ **Workplace** ▶ **New...** ▶ **New workplace**

Device name

Selection of an instrument from the configuration. This instrument will be assigned to the workplace that is to be newly opened. Each Instrument can be assigned only once.

Selection	'Device name'
-----------	---------------

Color

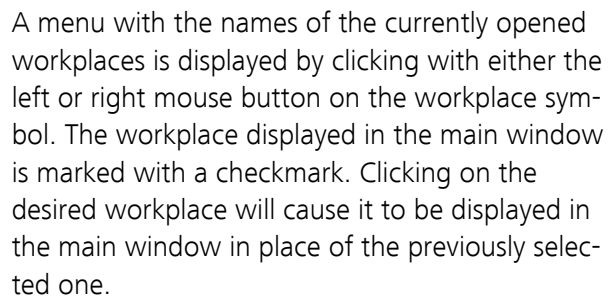
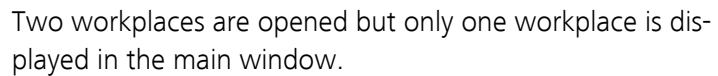
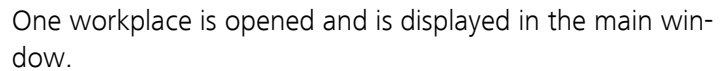
Selection of the color for the title bar of the subwindow and the status symbol for the newly opened workplace in the status bar.

Selection	green ochre blue brown
Default value	green

3.2.2 Selecting workplace

Program part: **Workplace**

The number of currently opened workplaces is displayed in the upper left-hand corner of the workplace symbol. If 2 or more workplaces are opened, then the workplace that is to be displayed in the main window can be selected by means of the workplace symbol.



Menu item: **Workplace** ▶ **File** ▶ **Workplace** ▶ **Close**

The selected workplace is closed with this menu item.

3.3 Measuring site display

3.3.1 Measuring site display - General

Main window: **Workplace**

The workplace main window contains the measuring site display. This display is divided into an area for **Block A** and an area for **Block B**. The following elements are displayed in both areas:

- *3.3.2Toolbar*
Block-specific toolbar.
- *3.3.4Selecting the method*
Selection of the method with which the determination is to be carried out.
- *3.3.5Switching on / switching off heater*
Switching on / switching off the heater with the current heating block temperature being displayed.
- *3.3.6Switching on / switching off gas flow*
Switching on / switching off the gas flow with the current gas flow being displayed.
- *3.3.7Sample data*
Entering of sample data and additional information.
- *3.3.8Selecting a sensor*
Assigning the conductivity sensor to the measuring site.



- *3.3.9 Carrying out a determination*
Starting/stopping determinations, status display, recording of the measurement curve.
- *3.3.10 Live curve*
Display of the measurement curve, induction time line, stability time line, conductivity, measuring time and the current measured value.

3.3.2 Toolbar

Main window: **Workplace** ► **Block A/Block B**

	Shows the application note of the loaded method for Block A or Block B (see Chapter 3.3.14, page 80).
	Change the stop criteria during a determination (see Chapter 3.3.13, page 79).
	Starts the temperature correction determination (see Chapter 3.4, page 80).
	Starts the cell constant determination (see Chapter 3.5, page 85).

3.3.3 Actions at the end of the determination

Dialog window: **Workplace ▶ Tools ▶ Actions at the end of the determination for ▶ Block A / Block B ▶ Actions at the end of the determination - Block #**

The **Actions at the end of the determination - Block #** window is opened with the **Tools ► Actions at the end of the determination for ► Block A / Block B** menu item. In this dialog window, the following actions for the end of the determination can be defined before a determination is started or while a determination is running:

Switch off heater

on | off (Default value: **off**)

Automatic deactivation of the heater at the end of the determination.

Reduce gas flow

on | off (Default value: **on**)

Automatic reduction of the gas flow at the end of the determination.

3.3.4 Selecting the method

Main window: **Workplace** ► **Block A/Block B**

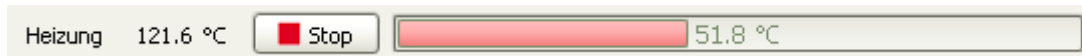
Method

Selection of the method from the current method group with which the determination is to be carried out in the block. If one remains in this field

The current heating block temperature is indicated by a gray progress bar.

The heating of the block is switched on by clicking on Start.

During the heating phase



After the heating has been switched on, the current heating block temperature is indicated by a red progress bar. The heating phase is stopped and the heater is switched off by clicking on . The current heating block temperature is then again indicated by a gray progress bar.

After the temperature has been reached



The temperature is indicated by a green progress bar once the selected heating block temperature has been reached and is stable. As long as no determination is running on the selected block, the heater can be switched off again by clicking on . The current heating block temperature is once again indicated by a gray progress bar.

3.3.6 Switching on / switching off gas flow

Main window: **Workplace** ► **Block A/Block B**

892 Professional Rancimat / 893 Professional Biodiesel Rancimat

In the case of these instruments, the gas flow for the two blocks A and B cannot be switched on and off individually for each block but only collectively. If methods with different gas flows are loaded on the two blocks, then the value from the block in which the gas flow is switched on is used. The gas flow is set according to the **gas flow** defined in the loaded method; this gas flow is shown to the left of the Start/Stop button. The current gas flow is shown digitally to the right of this button. The following displays are possible:



The gas flow is not switched on. The gas flow is switched on for both blocks by clicking on .



The gas flow is switched on and corresponds to the setpoint value from the method loaded for this block. The gas flow is switched off for both

■ Stop

■ Stop

■ Stop

If the **Internal pump** is switched off for an instrument in the configuration, then the gas flow can no longer be switched on and off, and the  **Start** and  **Stop** buttons remain inactive. The gas flow provided by an external gas supply is, however, also shown in the display.

In the case of this instrument, the gas flow for the two blocks A and B can be switched on and off individually for each block. The gas flow is set according to the **gas flow** defined in the loaded method; this gas flow is shown to the left of the Start/Stop button. The current gas flow is shown digitally to the right of this button. The following displays are possible:

 Start

▶ Start

■ Stop

■ Stop



Note

If the gas flow is switched off manually after a determination, then the reaction vessels must be removed from the PVC Thermomat within 1 h after the end of the determination. An underpressure could develop over time if the vessels are not removed because the HCl that is still being produced is absorbed in the condensed water vapor from the measuring vessel. This underpressure could result in back suction of the measuring solution into the hot reaction vessel.

3.3.7 Sample data

Main window: **Workplace** ► **Block A/Block B**

Ident

Entry of a designation or selection of a defined text template for the sample.

Editable only if no determination is running, otherwise inactive.

Entry	100 characters
Selection	'Text template'

Info 1

Entry of additional information about the sample. If text templates have been defined for this parameter, you can select them here.

The **Info 1** field is displayed only if it has been activated in the method (see Chapter 5.7.2.2, page 285). The information fields can neither be removed nor added in the main window of the **Workplace** program part.

Editable only if no determination is running, otherwise inactive.

Entry	100 characters
Selection	'Text template'

Info 2

Entry of additional information about the sample. If text templates have been defined for this parameter, you can select them here.

The **Info 2** field is displayed only if it has been activated in the method (see Chapter 5.7.2.2, page 285). The information fields can neither be removed nor added in the main window of the **Workplace** program part.

Editable only if no determination is running, otherwise inactive.

Entry	100 characters
Selection	'Text template'

Entry of additional information about the sample. If text templates have been defined for this parameter, you can select them here.

The **Info 3** field is displayed only if it has been activated in the method (see Chapter 5.7.2.2, page 285). The information fields can neither be removed nor added in the main window of the **Workplace** program part.

Editable only if no determination is running, otherwise inactive.

Entry	100 characters
Selection	'Text template'

Main window: **Workplace** ► **Block A/Block B**

Selection from the configuration of the conductivity sensor to be used for the determination.

The **Sensor** field is displayed only if the **Conductivity sensor assignment** check box has been activated in the method (see Chapter 5.5.1, page 266). The **Sensor** field can be neither removed nor added in the main window of the **Workplace** program part.

Editable only if no determination is running, otherwise inactive.

Selection	'Sensor name'
-----------	---------------

Main window: **Workplace** ► **Block A/Block B**

Starting a determination



Starts a determination on the selected measuring site. Alternatively, the determination can also be started directly with the start key on the instrument.

Stopping a determination



Stops the determination on the selected measuring site.

Measuring site display during the determination



Measuring site number is pulsating during the determination. The background of the live curve is displayed in the color defined in the method (see Chapter 5.7.3.2, page 290).

Carrying out a single determination

A single determination can be carried out if the **none** setting is selected for **Statistical link** in the method (see Chapter 5.5.1, page 266).

Carrying out a double determination

A double determination can be carried out if the **2 positions** setting is selected in the method for **Statistical link** (see Chapter 5.5.1, page 266). This is indicated on the user interface by a colored frame around the positions 1 and 2 or 3 and 4. Determinations which are started on positions 1 and 2 or 3 and 4 are statistically linked to one other.

Carrying out a quadruple determination

A quadruple determination can be carried out if the **4 positions** setting is selected for **Statistical link** in the method (see Chapter 5.5.1, page 266). This is indicated on the user interface by a colored frame around the positions 1 to 4. Determinations which are started on positions 1 to 4 will be statistically linked to one other.

3.3.10 Live curve

Main window: **Workplace** ► **Block A/Block B**

Live curve display

The live curve of a determination that has been started is displayed next to the Start button for each position in the main window of the **Workplace** program part. Before a determination is started, the live curve is displayed with a gray background; after the start, the background is displayed in the color defined in the method (see *Chapter 5.7.3.2, page 290*). The background is displayed in gray once again after the determination has been completed.

The following information is displayed in the eight live curves during and after the measurement: measurement curve, induction time line and stability time line. The current measured conductivity value and the measuring time are displayed above the curve. Please note that measured conductivity values of $> 400 \mu\text{S}/\text{cm}$ imply a greater inexactitude.

 **Note**

If no conductivity sensor is connected or if the sensor is not immersed in the solution, then '- $\mu\text{S}/\text{cm}$ ' is displayed as the conductivity value (in the workplace and on the instrument display).

If a conductivity sensor is connected and the sensor is immersed in the solution, the conductivity is displayed on the instrument display and above the conductivity curve already before the determination is started.

If the **Conductivity sensor assignment** is activated in the method loaded at the workplace, then the conductivity displayed above the curve and on the instrument display may change when a determination is started, the reason being that a cell constant of the conductivity sensor that has been changed in the meantime is not sent to the instrument until the determination is started. The conductivity is recalculated in the instrument and displayed on the monitor and in the software.

Context-sensitive menu

Show all	Shows the entire curve. This menu item is always enabled.
Zoom...	Opens the dialog for entering a zoom range (<i>see Chapter 4.8.5.2, page 239</i>).
Unzoom	Undoes the last zoom action (as often as required).
Copy	Copies the live curve displayed to the clipboard.

3.3.11 Modifying sample data live

Dialog window: **Workplace** ▶ **Block A/Block B** ▶ **Modifying sample data live**

The sample data **Ident**, **Info 1**, **Info 2** and **Info 3** can be entered into the respective fields before or after the determination has been started. While a determination is running, you can right click in one of the fields (**Ident**, **Info 1**, **Info 2** or **Info 3**) to open the context-sensitive **Modifying sample data live** menu item and thus the **Modifying sample data live** window. Only the sample data fields that have been activated in the method are available. Sample data fields can neither be removed nor added in the main window of the **Workplace** program part.

Ident

Entry of a designation or selection of a defined text template for the sample.

The field `Ident` is always used in a method (see [Chapter 5.7.2.2, page 285](#)).

Entry	100 characters
Selection	'Text template'

Info 1

Entry of additional information about the sample. Text templates can be selected here if they have been defined for this parameter.

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 285*).

Entry	100 characters
Selection	'Text template'

Info 2

Entry of additional information about the sample. Text templates can be selected here if they have been defined for this parameter.

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 285*).

Entry	100 characters
Selection	'Text template'

Info 3

Entry of additional information about the sample. Text templates can be selected here if they have been defined for this parameter.

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 285*).

Entry	100 characters
-------	----------------

Stop once one criterion has been fulfilled

The determination is stopped as soon as one stop criterion has been met. This option can only be selected if more than one stop criterion has been activated, otherwise it is inactive.

Stop once all the criteria have been fulfilled

If this option is selected, then the determination is ended as soon as all selected stop criteria have been met.

If stop criteria are changed in the workplace before or during a determination,

- then all stop criteria settings and values are applied from the method that is running.
- then an entry is saved in the Audit Trail for each parameter that is changed.
- then **modified (stop criteria)** is indicated in the database under Method status on the **Method** tab in the **Information** subwindow.
- then the changes are **not** adopted in the method.
- then the stop criteria set for each block remain valid until a new method is loaded or the program is shut down.

3.3.14 Displaying an application note

Main window: **Workplace** ► **Block A/Block B**

The **Application note - Block #** dialog window that displays the application note of the method that is loaded in the block can be opened with the  symbol in the block-specific toolbar.

3.4 Determining the temperature correction

3.4.1 Determining the temperature correction - General

Wizard: **Workplace** ▶ **Tools** ▶ **Determine temperature correction...** ▶ **Block A/Block B**

The **Temperature correction** parameter defined in the method indicates by how much the heating block temperature needs to be increased in order for the sample to reach the setpoint temperature. This value can be determined by measuring the deviation of the current temperature in the sample from the heating block temperature by means of a calibrated, external temperature sensor. **StabNet** offers a wizard for this purpose; you can start it with the **Tools ► Determine temperature correction... ► Block A/Block B** menu item or with the  symbol from the block-specific toolbar. This wizard leads you through the determination of the temperature correction in 5 steps.

The determination of the temperature correction can only be started if no determination is running on the selected block. No other program action can be performed while the temperature correction is being determined, including a change to another workplace.

[Next]

Continues to the next step.

3.4.3 Step 2 - Connecting a temperature sensor

Wizard: **Workplace** ▶ **Tools** ▶ **Determine temperature correction...** ▶ **Block A/Block B**

In this step, the external temperature sensor must be inserted into the reaction vessel and connected to the instrument.

[Cancel]

Cancels the determination of the temperature correction.

[Next]

Continues to the next step.

3.4.4 Step 3 - Starting the measurement

Wizard: **Workplace** ▶ **Tools** ▶ **Determine temperature correction...** ▶ **Block A/Block B**

In this step, the external temperature sensor must be positioned in the heating block and the measurement must be started.

[Cancel]

Cancels the determination of the temperature correction.

[Next]

Starts the measurement and continues to the next step.

3.4.5 Step 4 - Measurement

Wizard: **Workplace** ▶ **Tools** ▶ **Determine temperature correction...** ▶ **Block A/Block B**

The measurement is performed in this step. The current measured values for the heating block temperature, the external temperature sensor and the temperature correction calculated from them are displayed during this process.

Heating block

Temperature

Display of the current heating block temperature.

Target temperature

Display of the current target temperature (**Sample temperature + Temperature correction** from the method).

A progress display appears beneath this parameter showing the deviation of the current temperature of the heating block from the target tempera-

ture in the form of a **red** progress bar. If the heating phase has not been started before, it will be initiated automatically. Once the selected target temperature has been reached, the progress bar in the progress display changes its color to **green**.

External temperature sensor

Temperature

Display of the current temperature of the external temperature sensor in the silicone oil or in the sample.

A progress display appears beneath this parameter showing the currently measured temperature of the external temperature sensor in the form of a **red** progress bar. The scaling corresponds to the one in the temperature display above. The progress bar in the progress display changes its color to **green** once the measured temperature is stable.

Temperature correction

Temperature correction

Display of the current value of the temperature correction. The current value is displayed in red lettering with the additional information **Waiting...** for as long as the temperature measured with the external temperature sensor has not yet become stable. Once the temperature is stable, the current value is displayed in green lettering with the additional information **stable**.



Note

The measured values are no longer updated once the heating block and the internal temperature sensor are in a stable status.

[Next]

Exits the measurement and continues to the next step. This button does not become active again until the temperature measured with the external temperature sensor is stable.

[Cancel]

Cancels the determination of the temperature correction.

3.4.6 Step 5 - Saving the temperature correction

Wizard: **Workplace** ▶ **Tools** ▶ **Determine temperature correction...** ▶ **Block A/Block B**

Results

Temperature sensor

Display of the selected external temperature sensor.

Sample temperature

Display of the sample temperature defined in the method.

Gas flow

Display of the gas flow defined in the method.

Heating block temperature

Display of the measured heating block temperature.

Measured sample temperature

Display of the temperature measured in the sample with the external temperature sensor.

Temperature correction

Display of the determined temperature correction.

Comment

Comment on the determination of the temperature correction.

Entry	0 - 1,000 characters
-------	----------------------

[Save]

Saves temperature correction. The determined value is saved in the configuration on the **Temperature correction** tab of the instrument used (*see Chapter 7.1.1.3, page 376*). Afterwards, the wizard is closed automatically.

[Cancel]

Cancels the determination of the temperature correction.



Heater Block B on

The one-time heating start in Block B becomes active with this option.

3.6.3 Editing recurrent tasks

Dialog window: **Workplace ▶ Tools ▶ Timer... ▶ [Edit] ▶ New Task ▶ Recurrent Task ▶ Edit recurrent task**

A new heater start or the recurrent heater start selected in the table can be edited in this dialog window.

Active task

on | off (Default value: **on**)

If this check box is activated, then the automatic heater start is activated for the workplace.

Day

Selection of the weekdays on which the automatic heater start is to be carried out.

Time

Time at which the heater is to be started automatically.

Input range	00:00 - 23:59
-------------	---------------

Action

Action that is to be started automatically.

Selection	Heater Block A on Heater Block B on
Default value	Heater Block A on

Heater Block A on

The one-time heating start in Block A becomes active with this option.

Heater Block B on

The one-time heating start in Block B becomes active with this option.



Report...	PDF file output of the report (<i>see Chapter 4.5.2.2, page 168</i>).
 Logout...	Logs out user (<i>see Chapter 2.2.3, page 12</i>).
Exit	Exits the program.
1 'File name'	Opens the selected database (<i>see Chapter 4.2.1, page 103</i>). The last five databases opened are displayed for selection.

4.1.3.3 Database - Edit menu

Program part: **Database**

 Copy Select all	Copies the selected lines in the determination overview to the clipboard. Selects all lines in the current set of determinations in the determination overview.
--	---

4.1.3.4 Database - View menu

Program part: **Database**

 Update	Updates the determination overview.
 Change layout...	Modifies the layout of the loaded database view (<i>see Chapter 4.1.7.2, page 101</i>).
 Load view...	Loads a saved database view (<i>see Chapter 4.1.7.3, page 102</i>).
 Save view...	Saves the loaded database view (<i>see Chapter 4.1.7.4, page 102</i>).
 Split vertically	Splits the database window vertically and displays two databases side by side (<i>see Chapter 4.2.4, page 106</i>).
 Split horizontally	Splits the database window horizontally and displays two databases, one above the other (<i>see Chapter 4.2.5, page 106</i>).
 Unsplit	Undoes the splitting of the database window (<i>see Chapter 4.2.3, page 106</i>).
 Properties ►	
Column display...	Sets the column display for the Determination overview subwindow (<i>see Chapter 4.5.1.3, page 163</i>).
 Toolbar	Activate/deactivate the toolbar display.

4.1.3.5 Database - Determinations menu

Program part: **Database**

 Comment...	Enters a comment on the selected determination (<i>see Chapter 4.5.2.3, page 168</i>).
 Search...	Opens the Search - Database 'Name' dialog window for searching for determinations (<i>see Chapter 4.5.2.4, page 169</i>).
Filter ►	
 Last filter	Applies the most recently used quick or special filter once again (<i>see Chapter 4.5.2.5.2, page 172</i>).
 Quick filter	Quick filtering of the database with the content of the selected table cell (<i>see Chapter 4.5.2.5.3, page 172</i>).
 Special filter...	Opens the Special filter - Database 'Name' window for the definition of user-specific filters (<i>see Chapter 4.5.2.5.4, page 173</i>).
 Remove filter	Removes the current filter (<i>see Chapter 4.5.2.5.5, page 174</i>).
Batch ►	
New Batch...	Creates a new batch (<i>see Chapter 4.5.2.6.2, page 177</i>).
Delete Batch...	Deletes a batch (<i>see Chapter 4.5.2.6.3, page 178</i>).
Append to batch...	Attaches the selected determinations to the batch (<i>see Chapter 4.5.2.6.4, page 178</i>).
Remove from batch...	Removes the selected determinations from the current batch (<i>see Chapter 4.5.2.6.5, page 178</i>).
Sign ►	
 Signature 1...	Signs the selected determinations at level 1 (<i>see Chapter 2.3.3, page 15</i>).
 Signature 2...	Signs the selected determinations at level 2 (<i>see Chapter 2.3.4, page 17</i>).
Show signatures...	Shows all signatures for the focused determination (<i>see Chapter 4.5.2.7.4, page 182</i>).
Delete signatures 2...	Deletes all signatures at level 2 of the focused determination (<i>see Chapter 2.3.5, page 18</i>).
Send to...	Sends the selected determinations per e-mail (<i>see Chapter 4.5.2.8, page 184</i>).

Export...	Exports the selected determinations (<i>see Chapter 4.5.2.9, page 184</i>).
Import...	Imports the selected determinations (<i>see Chapter 4.5.2.10, page 185</i>).
 Show method...	Shows the method used for the focused determination (<i>see Chapter 4.5.2.12, page 186</i>).
 Show history	Shows all versions of the focused determination in the determination table (<i>see Chapter 4.5.2.13, page 186</i>).
 Make current	Makes the old version selected in the history view the current version once again (<i>see "Making an old version current", page 186</i>).
 Detail overview...	Shows the detail overview of results for the selected determinations (<i>see Chapter 4.5.2.15.2, page 188</i>).
 Overlay curves...	Overlays the curves of the selected determinations (<i>see Chapter 4.5.2.16, page 197</i>).
 Reprocess...	Reprocesses the selected determinations.
Extrapolation...	Performs extrapolation with selected determinations (<i>see Chapter 4.5.2.18, page 215</i>).
 Delete	Deletes selected determinations (<i>see Chapter 4.5.2.11, page 185</i>).

4.1.3.6 Database - Tools menu

Program part: **Database**

Report templates ►	
New ►	
Form report...	Opens the Report template window with an empty form report (<i>see Chapter 4.4.1.3, page 117</i>). This menu item is disabled as long as the database is empty.
Tabular report...	Opens the Report template window with an empty tabular report (<i>see Chapter 4.4.1.3, page 117</i>).
 Open...	Opens a report template for editing (<i>see Chapter 4.4.1.3, page 117</i>). This menu item is disabled as long as the database is empty.
Manager...	Manages report templates (<i>see Chapter 4.4.1.1, page 115</i>).
Templates ►	

Control chart templates...	Manages templates for control charts (<i>see Chapter 4.4.2, page 150</i>).
Export templates...	Manages export templates (<i>see Chapter 4.4.3, page 155</i>).

4.1.3.7 Help menu

Program part: **Workplace / Database / Method / Configuration**

 StabNet Help	Opens StabNet Help.
About	Displays information about the program and the installation.

4.1.4 Database - Toolbar

Program part: **Database**

	Opens a database (<i>see Chapter 4.2.1, page 103</i>).
	Closes the database (<i>see Chapter 4.2.6, page 106</i>).
	Management of the determination databases (<i>see Chapter 4.3.1, page 106</i>).
	Logs out user (<i>see Chapter 2.2.3, page 12</i>).
	Copies the selected lines in the determination overview to the clipboard.
	Updates the determination overview.
	Modifies the layout of the loaded database view (<i>see Chapter 4.1.7.2, page 101</i>).
	Loads a saved database view (<i>see Chapter 4.1.7.3, page 102</i>).
	Saves the loaded database view (<i>see Chapter 4.1.7.4, page 102</i>).
	Splits the database window vertically and displays two databases side by side (<i>see Chapter 4.2.4, page 106</i>).
	Splits the database window horizontally and displays two databases, one above the other (<i>see Chapter 4.2.5, page 106</i>).
	Undoes the splitting of the database window (<i>see Chapter 4.2.3, page 106</i>).



Opens StabNet Help.

4.1.5 Database - Subwindow

Program part: **Database**

Selection

The following subwindows can be displayed in the main window:

- *Determination overview*
Overview of the determinations saved in the database. This subwindow is permanently on display.
- *Curve*
Display of curves for the focused determination.
- *Information*
Display of information for the focused determination.
- *Results*
Display of the results of the focused determination.

Display

The subwindows can be enlarged or made smaller to suit by dragging the separating bar between the windows.

By clicking on the  button above at the right, the subwindows can be maximized so that only one subwindow is displayed in the main window. The original view of all subwindows is restored by clicking on the  button in the maximized subwindow once again.

If you change the view of the subwindows, these changes will remain in effect when the database is closed and reopened.

4.1.6 Database - Functions

Program part: **Database**

The following functions can be carried out in the **Database** program part:

Views

- *Modifying the layout of the database view*
- *Loading a database view*
- *Saving a database view*
- *Renaming a database view*
- *Deleting a database view*

Database manager

- *Creating a new database*
- *Renaming a database*
- *Editing database properties*
- *Backing up a database*



- *Restoring a database*
- *Deleting a database*

Determinations

- *Overview of functions*

Templates

- *Editing report templates*
- *Editing control chart templates*
- *Editing export templates*

4.1.7 Views

4.1.7.1 Views - General

Program part: **Configuration/Database /**

Definition

The contents and design of the main window in the **Database** and **Configuration** program parts is called a **View**. The following elements belong to a view:

- Number, arrangement, sequence and size of the subwindows.
- Representation within the individual subwindows, i.e. column sequence, column width, sorting and filter.

Functions

The following functions are possible for views:

- *Changing the layout*
Define the number, arrangement and sequence of the subwindows for the current view.
- *Save view*
Save current view.
- *Load view*
Load a saved view.
- *Rename view*
Rename a saved view.
- *Delete view*
Delete a saved view.

Save automatically

If the corresponding item under **Save on closing** is activated under **Options** on the **Save** tab, then the current view will be saved automatically when the program is closed.

Load automatically

The standard procedure is that the view saved when the program is terminated will be loaded automatically the next time that the program is

The standard procedure is that the view with the following subwindows is opened with the very first program start:

- ## g the layout

The **Change layout** dialog window is opened with the  symbol or the **View ► Change layout...** menu item.

Selection of a graphical symbol for the number, arrangement and sequence of the subwindows.

Available subwindows

Selection	Selection of the subwindows
-----------	-----------------------------

Display the subwindows that are shown in the view.



Move the selected subwindow downward (modifies sequence).

4.1.7.3 Loading a view

Dialog window: **Database/Configuration** ▶ **View** ▶ **Load view...** ▶ **Load view**

The **Load view** dialog window is opened with the  symbol or the **View ► Load view...** menu item.

Name

Name of the view to be loaded.

[Rename]

Rename the selected view.

[Delete]

Delete the selected view.

[Load]

Load the selected view.

Load view automatically

The standard procedure is that the view saved when the program is terminated will be loaded automatically the next time that the program is opened. As an alternative, a default view can be defined for each user group that is loaded automatically the first time that the program part is opened.

The standard procedure is that the view with the following subwindows is opened with the very first program start:

- **Configuration**
Devices, Sensors, Temperature coefficients
- **Database**
Determination overview, Curves, Information, Results

4.1.7.4 Saving a view

Dialog window: **Database/Configuration** ▶ **View** ▶ **Save view...** ▶ **Save view**

The **Save view** dialog window is opened with the  symbol or the **View ► Save view...** menu item.

Name

Name under which the view is to be saved.

[Rename]

Rename the selected view.

[Delete]

Delete the selected view.

Save the view under the given name. The saved views are globally valid and available for client/server systems.

The current view will be saved automatically when the program is closed if the corresponding item is activated under **Save on closing** on the **Save** tab in the **Options** dialog window in the **Configuration** program part.

Dialog window: **Database/Configuration** ▶ **View** ▶ **Load view.../Save view...** ▶ **[Rename]** ▶ **Rename view**

To be able to rename a view, either the **Load view** or the **Save view** dialog window must be opened and the **[Rename]** button must be pressed down. The **Rename view** window opens afterwards.

entry of a new name for the view.

Entry	50 characters
-------	---------------

Function: **Database/Configuration** ▶ **View** ▶ **Load view.../Save view...** ▶ **[Delete]**

To delete a view, either the **Save view** or **Save view** dialog window must be opened and the **[Delete]** button must be pressed down.

4.2.1 Opening a database

Dialog window: **Database** ▶ **File** ▶ **Open...** ▶ **Open database**

The  symbol or the **File ► Open...** menu item opens the **Open database** window in which one of the databases available on the server (or on the local server) can be selected for opening. The names of all of the available databases are displayed in this window; the additional information is loaded afterwards. All of the databases are then displayed, even if the user does not have read permissions.

The database table contains information concerning all determination databases. The table cannot be edited. The table can be sorted according to the selected column (**Name**, **Number of records**, **Size**, **Readable**, **Editable** and **Comment** columns) in either ascending or descending order by clicking on the column title.

Name

Name of the database.

Number of records

Shows the number of data sets in the database.

Size

Shows the size of the database in KB.

Readable

Shows whether or not the database can be read by the user currently logged in.

Editable

Shows whether or not the database can be edited by the user currently logged in.

Comment

Shows comments about the database.

Opening a database

Database name

Name of the database to be opened. If a database is selected from the table, the name of the database will be entered automatically in this field. It can, however, also be entered manually.

Entry	50 characters
-------	---------------

[Open]

Opens the selected database and shows its data sets in the Determination overview. The database name is displayed in the title bar of the program, the number of currently opened databases is displayed in the left upper corner of the database symbol.



Note

A maximum of 4 databases can be opened, but only 2 can be displayed at the same time. Databases that are open at the time the program is exited will be opened automatically the next time the program is started.

4.2.2 Selecting a database

Program part: **Database**

The number of the currently opened databases is displayed in the upper left corner of the database symbol. If 2 or more databases are opened, then these databases, which can be displayed either next to one another or one above the other in the main window, can be selected with the aid of the database symbol.



No database is opened. **No database loaded** is displayed in the main window.



A database is opened and is displayed in the main window.



Two databases are opened. Normally only one database is displayed in the main window, but the option exists of displaying two databases at once, either next to one another or one above the other.



A menu with the names of all the currently opened databases is displayed by clicking on the database symbol with either the left or right mouse button. The databases displayed in the main window are then marked with a checkmark. Clicking on the desired database displays it in the main window in the place of the previously selected one.

4.3.5.3 Database properties - Access rights

Tab: Database ▶ File ▶ Database manager... ▶ Database manager ▶ [Properties] ▶ Properties - Database - 'Database name' ▶ Access rights

Database access permissions for user groups.

User group

Shows the user groups defined in the user administration.

Read

on | off (Default value: **on**)

Activates/deactivates the permission to open the database. The database can only be displayed, but not modified (records cannot be deleted or reprocessed).

Edit

on | off (Default value: **off**)

Activates/deactivates the permission to edit the database. Data sets can be modified or deleted.



Note

If access for editing is activated, then access rights for reading will also automatically be activated. If access for reading is deactivated, then access rights for editing will also automatically be deactivated.

4.3.5.4 Database properties - Backup

Tab: **Database ▶ File ▶ Database manager... ▶ Database manager ▶ [Properties] ▶ Properties - Database - 'Database name' ▶ Backup**

Definition of backup monitoring and automatic backups.

Backup monitoring

on | off (Default value: **off**)

Activates/deactivates the backup monitoring for the selected database. If the **Backup monitoring** check box is enabled, then the **Next backup** field in the database table will be highlighted in **red** when the interval time elapses.

Last backup

Display of date and time of the last database backup.

Next backup

Date at which the next backup must take place. The date can be selected by pressing  in the **Select date** dialog window.

Entry	Date selection
Default value	Last backup + 1 month

Interval

Entry of the interval for the backup monitoring. After each automatically or manually triggered backup, the interval entered here will be added automatically to the **Last backup** and the **Next backup** field will be automatically adjusted accordingly.

Input range	1 - 999
Default value	1
Selection	day(s) week(s) month year(s)
Default value	month

Start backup automatically

on | off (Default value: **off**)

Automatic start of the backup for the database in the defined **Backup directory**.

Backup directory

Selection of a directory predefined in the **Program administration** for the automatic backup.

Selection	Selection of the backup directory Default backup directory
Default value	Default backup directory



Note

Make sure that you have read and write permission for the selected directory.

4.3.5.5 Database properties - Monitoring

Tab: Database ▶ File ▶ Database manager... ▶ Database manager ▶ [Properties] ▶ Properties - Database - 'Database name' ▶ Monitoring

Definition of database monitoring.



Backup name

Entry	50 characters
Default value	Backup-##



[Start]

4.3.7 Restoring the database

The **Restore databases** dialog window opens with **[Restore]**:

Backup directory

Selection	'Name of the backup directory' Default backup directory
Default value	Default backup directory

Backup name

Selection	Selection of backup files
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4.4.1.1.2 Renaming report templates

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Manager... ▶ Report template manager ▶ [Edit] ▶ Rename... ▶ Rename report template**

The **[Edit] ► Rename...** menu item in the **Report template manager** window opens the **Rename report template** window for renaming the selected report template.

Rename report template 'Name' to

Entry of the new name for the report template.

Entry	50 characters
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Note

The name of the report template must be unique throughout the entire client/server system.

4.4.1.1.3 Copying report templates

Menu item: **Database ▶ Tools ▶ Report templates ▶ Manager... ▶ Report template manager ▶ [Edit] ▶ Copy**

The **[Edit] ► Copy** menu item in the **Report template manager** window copies the selected report templates under the name **Copy of 'Report template name'**.

4.4.1.1.4 Deleting report templates

Menu item: **Database ▶ Tools ▶ Report templates ▶ Manager... ▶ Report template manager ▶ [Edit] ▶ Delete...**

The **[Edit] ► Delete...** menu item in the **Report template manager** window deletes the selected report templates.

4.4.1.1.5 Exporting report templates

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Manager... ▶ Report template manager ▶ [Edit] ▶ Export... ▶ Select directory for export**

The **[Edit] ► Export...** menu item in the **Report template manager** window exports the selected report templates, each one into a file with the name '**Name**'.mrep. The **Select directory for export** window opens in which the directory for export must be selected.

4.4.1.1.6 Importing report templates

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Manager... ▶ Report template manager ▶ [Edit] ▶ Import... ▶ Select files to import**

The **[Edit] ► Import...** menu item in the **Report template manager** window opens the **Select files to import** dialog window in which the

4.4.1.2 Creating new report templates

New form report

In the **Form report**, the report section always includes the whole area between the header and the footer. This means that for each determination, at least one page will always be produced.

The **Report template - New tabular report** program window is opened with an empty report template (that can then be edited) with the **Tools ► Report templates ► New ► Tabular report...** menu item.

4.4.1.3 Opening report templates

The  symbol or the **Tools ► Report templates ► Open...** menu item is used to open the **Open report template** window in which one of the globally available report templates can be selected and opened.

The list of report templates contains information about all the saved report templates. The table cannot be edited. The table can be sorted according to the selected column (**Name**, **Saved**, **Saved by**, **Comment** columns) in either ascending or descending order by clicking on the column title.

Name of the report template.

Date and time when the report template was saved.

Short name of the user who saved the report template.

Comment

Comment on the report template.

Opening a report template

Name

Name of the report template to be opened. If a report template is selected from the table, the name will be entered automatically in this field. It can, however, also be entered manually.

Entry	50 characters
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[Open]

Opens the **Report template** program window, in which the selected report template is shown and can be edited.

4.4.1.4 Editing report templates

4.4.1.4.1 Report template - General

4.4.1.4.1.1 Report template - Overview

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name'**

Which determination data and which other items (e.g. text fields, images, graphics elements) are to be produced in a report are defined in report templates. The templates can be created or edited in their own program window and then saved globally under a unique name. They are used for the automatic output of reports in determinations or for manual report output from the database.

There are two basically different types of report templates:

- **Form report**

In the Form report, the report section always includes the whole area between the header and the footer. This means that at least one page will always be produced for each determination.

- **Tabular report**

In the Tabular report, the report section can be set with the mouse. For each data set, one such report section will be filled with data and placed row by row on the page. Tabular reports from several determinations can thus be created in this way.

Report template - User interface

Dialog window: **Database** ▶ **Tools** ▶ **Report templates** ▶ **Open...** ▶ **Open report template** ▶ **[Open]** ▶ **Report template - 'Name'**

Elements

The user interface of the **Report template - 'Name'** dialog window comprises the following elements:

- *Menu bar*
- *General toolbar*
- *Module-specific toolbar*
- *Module bar*
- *Main window*

Report template - Menu bar

Report template - Main menu

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name'**

The menu bar in the **Report template - 'Name'** dialog window contains the following main menu items:

- *File*
Save report template, page setup, page preview, close window.
- *Edit*
Undo, redo, cut, copy, paste, delete, enter comment.
- *View*
Update view, page navigation.
- *Insert*
Insert pages.
- *Tools*
Options.
- *Help*
Open Program Help.

Report template - File menu

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name' ▶ File**

 Save	Saves the opened report template (<i>see Chapter 4.4.1.4.2.11, page 132</i>).
Save As...	Saves the opened report template under a new name (<i>see Chapter 4.4.1.4.2.11, page 132</i>).
Page setup...	Sets up the page settings for the report template (<i>see Chapter 4.4.1.4.2.2, page 124</i>).

4.4.1.4.1.3.5

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name' ▶ Insert**

Page before	Inserts a new page before the page shown (<i>see "Inserting page before", page 127</i>).
Page after	Inserts a new page after the page shown (<i>see "Inserting page after", page 127</i>).

4.4.1.4.1.3.6

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name' ▶ Tools**

Options...	Set options for the report template (see Chapter 4.4.1.4.2.10, page 131).
-------------------	---

4.4.1.4.1.3.7

Dialog window: **Database** ▶ **Tools** ▶ **Report templates** ▶ **Open...** ▶ **Open report template** ▶ **[Open]** ▶ **Report template - 'Name'** ▶ **Help**

 StabNet Help	Opens StabNet Help.
---	---------------------

4.4.1.4.1.4

Dialog window: **Database ▶ Tools ▶ Report templates ▶ Open... ▶ Open report template ▶ [Open] ▶ Report template - 'Name'**

	Saves the opened report template (<i>see Chapter 4.4.1.4.2.11, page 132</i>).
	Page preview of the report template with the data of the selected determination (<i>see Chapter 4.4.1.4.2.8, page 130</i>).
	PDF file output of the report template with the data of the selected determination.
	Undoes the last action.
	Redoes the undone action.
	Cuts the highlighted items and copies them to the clipboard (<i>see Chapter 4.4.1.4.2.6, page 128</i>).
	Copies the selected items to the clipboard (<i>see "Cutting, copying, pasting, deleting modules", page 129</i>).

  	Time If this option is activated, then time fields can be inserted in the report template in which the actual time is entered (<i>see Chapter 4.4.1.4.3.4, page 138</i>). Page number If this option is activated, then fields can be inserted in the report template in which the page number is entered (<i>see Chapter 4.4.1.4.3.5, page 140</i>). Number of pages If this option is activated, then fields can be inserted in the report template in which the number of pages is entered (<i>see Chapter 4.4.1.4.3.6, page 142</i>).
	Fixed report If this option is activated, then fixed reports can be inserted in the report template (<i>see Chapter 4.4.1.4.3.7, page 144</i>).
	Group If this option is activated, then group fields can be inserted in the report template (<i>see Chapter 4.4.1.4.3.8, page 145</i>).
  	Image If this option is activated, then images can be inserted in the report template (<i>see Chapter 4.4.1.4.3.9, page 146</i>). Line If this option is activated, then lines can be inserted in the report template (<i>see Chapter 4.4.1.4.3.10, page 147</i>). Rectangle If this option is activated, then rectangles can be inserted in the report template (<i>see Chapter 4.4.1.4.3.11, page 148</i>).
	Curve If this option is activated, then curves can be inserted in the report template (<i>see Chapter 4.4.1.4.3.12, page 149</i>).

4.4.1.4.2 Report template - Functions

4.4.1.4.2.1 Report template - Function overview

Program window: **Report template - 'Name'**

The following functions can be carried out in the **Report template - 'Name'** program window:

- *Page setup*
- *Defining sections in main window*
- *Inserting report pages*
- *Inserting a module*
- *Editing a module*
- *Zooming*
- *Showing the page preview*
- *Entering comments on report templates*
- *Defining options for report templates*
- *Saving a report template*

4.4.1.4.2.2 Report template - Page setup

Program window: **Report template - 'Name'** ▶ **File** ▶ **Page setup...** ▶ **Page setup**

The **File ► Page setup...** menu item in the **Report template - 'Name'** window opens the **Page setup** dialog window in which the report format settings can be made.

General

only for form report

Settings

Selection	Apply to current page Apply to all pages
Default value	Apply to current page

Apply to current page

The page settings are applied only to the currently selected report page.

Apply to all pages

The page settings are applied to all report pages.

Page format

Page format

Selection of the paper size. The width and height of the paper can be defined with **User-defined**.

Selection	A4 Letter Legal User-defined
Default value	A4

Width of the paper size. This parameter can be edited only if **Page format = User-defined**.

Input range	0.0 - 499.0 mm
Default value	210.0 mm

Height of the paper size. This parameter can be edited only if **Page format = User-defined**.

Input range	0.0 - 499.0 mm
Default value	297.0 mm

Selection of the page layout.

Selection	Portrait Landscape
Default value	Portrait

Page margins

Upper page margin.

Input range	0.0 - 499.0 mm
Default value	15.0 mm

Lower page margin.

Input range	0.0 - 499.0 mm
Default value	15.0 mm

Left-hand page margin.

Input range	0.0 - 499.0 mm
Default value	20.0 mm

Right-hand page margin.

Input range	0.0 - 499.0 mm
Default value	20.0 mm



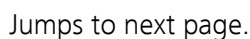
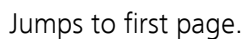
If a page break is to be prevented within the report section, then the height of the report section must be selected in such a way that there will be precisely the amount of space required for a whole-number multiple of report sections between the header and the footer.

Menu item: **Report template - 'Name' ▶ Insert ▶ Page before / Page after**

The **Insert ► Page before** menu item in the **Report template** program window is used to insert a new, empty report page before the report page shown.

The **Insert ► Page after** menu item in the **Report template** program window is used to insert a new, empty report page after the report page shown.

In report templates with several pages, the navigation bar can be used to switch to the required page.



Name

Saved

Saved by

Comment

Saving the report template

Name

Entry	50 characters
-------	---------------



Note

The name of the report template must be unique throughout the entire client/server system.

[Save]

Saves the report template under the required name.

4.4.1.4.3 Report template - Modules

4.4.1.4.3.1 Report template - Text field

Dialog window: **Report template - 'Name' ▶ Properties - Text field**

Text fields are used for outputting any texts in the report.

Insert



In order to insert a text field into a report template, the corresponding symbol must be selected on the module bar and then placed on the report template by creating a field with the left mouse button.

Properties

X pos.

X-position within the permitted range.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Y pos.

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Width

Width of the text field.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Height

Height of the text field.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Activates/deactivates line break for multi-line text fields.



Fills the field with dots.

Text

Text input for the text field.

4.4.1.4.3.2 Report template - Data field

Dialog window: **Report template - 'Name' ► Properties - Data field**

Data fields are used for outputting determination data in a report.

Insert



In order to insert a data field into a report template the corresponding symbol must be selected on the module bar and then placed on the report template by creating a field with the left mouse button.

Properties

X pos.

X-position within the permitted range.

Input range	0.0000 - (max. page width) mm
-------------	--------------------------------------

Y pos.

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	---------------------------------------

Width

Width of data field.

Input range	0.0000 - (max. page width) mm
-------------	--------------------------------------

Height

Height of data field.

Input range	0.0000 - (max. page height) mm
-------------	---------------------------------------

Text placed after the contents of the data field.

Entry	50 characters
-------	---------------

Shows a formatted example of text.

Dialog window: **Report template - 'Name' ▶ Properties - Current date**

Date fields are used for outputting the current date in a report.



In order to insert a date field into a report template the corresponding symbol must be selected on the module bar and then placed on the report template by creating a field with the left mouse button.

Properties

X-position within the permitted range.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Width of date field.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Height of date field.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

Prefix

Text placed before the contents of the date field.

Entry	50 characters
-------	---------------

Suffix

Text placed after the contents of the date field.

Entry	50 characters
-------	---------------

Preview

Shows the formatted date.

4.4.1.4.3.4 Report template - Time field

Dialog window: **Report template - 'Name' ▶ Properties - Current time**

Time fields are used for outputting the actual time in the report.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

Prefix

Text placed before the contents of the time field.

Entry	50 characters
-------	---------------

Suffix

Text placed after the contents of the time field.

Entry	50 characters
-------	---------------

Preview

Shows the formatted time.

4.4.1.4.3.5 Report template - Page number

Dialog window: **Report template - 'Name' ▶ Properties - Page number**

The actual page number in the report is produced in a page number field.

Insert



In order to insert a page number field into a report template, the corresponding symbol must be selected on the module bar and then placed in the header or footer of the report template by creating a field with the left mouse button.

Properties

X pos.

X-position within the permitted range.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Y pos.

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Width

Width of the page number field.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Height

Height of the page number field.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Arial

Selection of the available Windows fonts.

9

Font size in pt.

Color selection.

B

Bold.

7

Italic.

1

Underlined.

Left-justified.

Centered.

Right-justified.

A.....

Fills the field with dots.



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

Prefix

Text placed before the contents of the field.

Entry	50 characters
-------	----------------------

Suffix

Text placed after the contents of the field.

Entry	50 characters
-------	----------------------

Preview

Shows the formatted number of pages.



Selection of the type of line.

4.4.1.4.3.11 Report template - Rectangle

Dialog window: Report template - 'Name' ▶ Properties - Rectangle

Any rectangle can be inserted in the report template.

Insert



In order to insert a rectangle into a report template, the corresponding symbol must be selected on the module bar and then placed on the report template by creating a field with the left mouse button.

Properties

X pos.

X-position within the permitted range.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Y pos.

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Width

Width of the rectangle.

Input range	0.0000 - (max. page width) mm
-------------	-------------------------------

Height

Height of the rectangle.

Input range	0.0000 - (max. page height) mm
-------------	--------------------------------

Thickness

Thickness of the line for the rectangle.

Input range	0.1 - 10.0 mm
Default value	0.5 mm



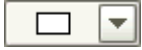
Selection of the line color.



Selection of the type of line for the rectangle.



Activates/deactivates the fill color.



Selection of the fill color.

4.4.1.4.3.12

Report template - Curve field

Dialog window: **Report template - 'Name' ► Properties - Curve field**

Insert



In order to insert a curve into a report template, the symbol must be selected on the module bar and then placed on the report template by creating a field with the left mouse button.

Properties

X pos.

Shows the predefined X-position for the curve field.

Input range	0.0000 - (max. page width) mm
-------------	--------------------------------------

Y pos.

Y-position within the permitted range.

Input range	0.0000 - (max. page height) mm
-------------	---------------------------------------

Width

Shows the predefined width of the curve field.

Input range	0.0000 - (max. page width) mm
-------------	--------------------------------------

Height

Height of the curve field.

Input range	0.0000 - (max. page height) mm
-------------	---------------------------------------

Curve view

Definition of the curve display.

Selection	from database user-defined
Default value	from database

from database

The curve is displayed using the settings that have been saved in the database. The tabs for configuring the display are disabled.

user-defined

The display of the curve in the report can be configured by the user. The tabs for configuring the display are activated.

Tabs

Additional properties for the curve field can be set on the following tabs:

- 5.7.3.1 *Graphics - Axes*
Displaying, labeling and scaling the axes.
- 5.7.3.2 *Graphics - Display*
Definition of the display of curves, axes and background.

4.4.2 Templates for control chart

4.4.2.1 Managing control chart templates

Menu item: **Database ▶ Tools ▶ Templates ▶ Control chart templates... ▶ Control chart templates**

Globally available templates for control charts can be managed in this dialog window.

Template table

The table with the defined templates cannot be edited, although it can be sorted according to the selected column in ascending or descending order by clicking on the column title.

Template name

Shows the name of the template.

Comment

Shows the comments about the template.

Window menus

The **[Edit]** menu beneath the list of templates contains the following menu items:

New...	Creates a new template. The Properties - Control chart template dialog window opens in which the properties for the new template can be defined (<i>see Chapter 4.4.2.2, page 151</i>).
Properties...	Opens the Properties - Control chart template - 'Name' dialog window in which the properties of the template selected in the table can be edited (<i>see Chapter 4.4.2.2, page 151</i>).

4.4.2.2 Editing control chart templates

4.4.2.2.1 Control chart template - Properties

Dialog window: **Database ▶ Tools ▶ Templates ▶ Control chart templates... ▶ Control chart templates ▶ [Edit] ▶ Properties... ▶ Properties - Control chart template - 'Name'**

Template name

Name under which the control chart template is saved per client in the configuration database.

Entry	50 characters
-------	---------------

Result table

Table with the results for which a control chart is defined.

The most important properties of the control chart of the selected result are displayed next to the table on the right.

[Edit]

Opens the menu for editing the control charts of the individual results.

New...	Adds a new result to the template.
Properties...	Edits the properties of the selected result (<i>see Chapter 4.4.2.2.2, page 152</i>).
Delete	Deletes the selected result.

Result properties overview

The most important properties in the control chart for a selected result in the table are displayed on the right in the dialog window.

Warning limits

Displays the defined warning limits.

Intervention limits

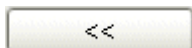
Displays the defined intervention limits.

Statistics

Displays the defined statistical data.



Adds the selected field.



Removes the selected field.



Changes the sequence of the exported fields by moving the selected field upwards.



Changes the sequence of the exported fields by moving the selected field downwards.

4.4.3.2.3 Export template - Options for CSV format

Dialog window: **Database** ▶ **Tools** ▶ **Templates** ▶ **Export templates...** ▶ **Export templates** ▶ **[Edit]** ▶ **Properties...** ▶ **Export template 'Name'** ▶ **[Options]** ▶ **Options for CSV format**

The **Options for CSV format** dialog window in which the separators can be defined is opened with **[Options]** in the properties window for export templates.

Field separator

Selection of the field separator.

Selection	; , TAB
Default value	;

Record separator

Selection of the data set separator (**CR** = Carriage return, **LF** = Line feed).

Selection	CR/LF CR LF
Default value	CR/LF

Header

on | **off** (Default value: **on**)

If this check box is activated, the column headers are exported at the beginning of the export file.

4.4.3.3 XML export

4.4.3.3.1 XML export - Overview

Dialog window: **Database ▶ Tools ▶ Templates ▶ Export templates... ▶ Export templates ▶ [Properties] ▶ Export template**

General

An XML export file with all determination data can be created by using an XML report template for the export of determinations.

Structure

An XML export file is constructed as follows (extract):

<?xml version="1.0" encoding="ISO-8859-1" ?>	
–<DeterminationReport>	Determination report
<xmlCreator val="" />	Program name
<xmlCreatorVersion val="" />	Program version
<xmlCreatorBuildNo val="" />	Build number
<subtype val="" />	
+ <Determination>	Determination data
+ <Method>	Method data
+ <Sample>	Sample data
+ <SingleResults>	Single results
+ <ResultMonitoring dynamic="">	Monitored results
+ <Methodparams>	Method parameters
<Measparams>	Measuring parameters
<Evaluation>	Evaluation
<Properties>	Properties
+ <Statistics>	Statistics results
+ <Configuration>	Device data
–<System>	System data
<userName val="" />	User name (short name)
<userNameFull val="" />	User name (full name)
<clientName val="" />	Client name
<progVersion val="" />	Program version - Build number

<licenseRoot val="" />

License code

</System>

</DeterminationReport>



Note

dynamic= means that the following nodes can appear more than once.

4.5 Subwindow - Determination overview

4.5.1 Determination overview - General

4.5.1.1 Determination overview - Overview

Subwindow: **Database ▶ Determination overview**

General

The **Determination overview** subwindow displays selected data in tabular form for the determinations contained in the open database.. It is always displayed in the **Database** program part, i.e. it cannot be removed from the database view. The subwindow can be enlarged and reduced as required; it can also be maximized.

Elements

The **Determination overview** subwindow includes the following elements:

- *Determination table*
- *Filter selection*
- *Batch selection*
- *Navigation bar*

4.5.1.2 Determination overview - Table

Subwindow: **Database ▶ Determination overview**

Data display

The information defined in the **Column display** regarding the determinations is displayed in the determination table.

If a result value is monitored and lies within the limits defined, then it will be shown in **green**. If it is outside these limits then the value will be shown in **red**.



Updating

Table view

- **Drag the margin between column titles**
Sets the column width.
- **Double-click on the margin between column titles**
Sets the optimal column width.
- **Drag the column title**
Moves the column to the required location.

The determinations selected in the table are displayed in **green**; the focused determination, the data of which is displayed in the other sub-windows, is marked with an arrow before the line number. There are various opportunities for data set selection in the table.

4.5.1.3 Determination overview - Column display

The **Column display** dialog window is opened with **View ► Properties ► Column display...**. Here the columns that are to be shown in the determination table can be defined.

Columns available

Display of all the fields that can be shown as columns in the determination table.

Columns displayed

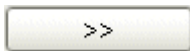
Display of all the fields that will be shown as columns in the determination table.

Default name

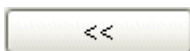
Non-editable name of the field that is displayed as a column.

Displayed name

Editable name (by double-click) of the column displayed in the determination overview.



Adds the selected column to the table.



Removes the selected column from the table.



Changes the sequence of the displayed columns by moving the selected column upwards.



Changes the sequence of the displayed columns by moving the selected column downwards.

4.5.1.4 Determination overview - Filter selection

Subwindow: **Database ▶ Determination overview**

Filter

Selection of the filter with which the determination table is to be filtered:

Selection	All determinations All determinations of a multiple determination Quick filter Temporary filter 'Filter name'
Default value	All determinations

All determinations

The table is shown unfiltered.

All determinations of a multiple determination

The table is filtered so that all determinations are shown that are linked with the selected determination as part of a multiple determination.

The table is filtered according to the most recently defined **Quick filter**.

The table is filtered according to the **Special filter** that was most recently defined but not yet saved.

The table is filtered according to the selected and saved **Special filter**.

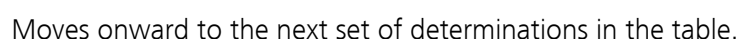
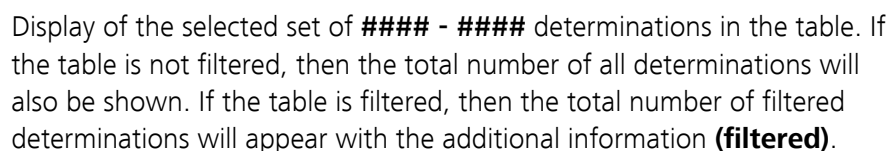
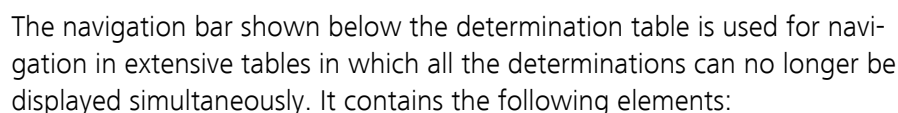
Subwindow: **Database ▶ Determination overview**

Selection of the batch whose determinations are to appear in the determination table.

No batch selected

The table is shown unfiltered.

The table is filtered according to the selected and saved **Batch**.

Subwindow: **Database ▶ Determination overview**



Jumps to the last set of determinations in the table.

4.5.1.7 Determination overview - Table navigation

Subwindow: **Database ▶ Determination overview**

Navigation in the determination table can be carried out with the mouse and the vertical and horizontal scroll bars. The following options are also provided by the keyboard:

[↑]

Moves the line cursor up by one field.

[↓]

Moves the line cursor down by one field.

[Ctrl] [End]

Jumps to the last determination in the current set.

[Ctrl] [Home]

Jumps to the first determination in the current set.

[Page Up]

Scrolls backward within the current set.

[Page Down]

Scrolls forward within the current set.

[Alt] [End]

Jumps to last determination (of all).

[Alt] [Home]

Jumps to first determination (of all).

[Alt] [←]

Jumps to first data set of previous set.

[Alt] [→]

Jumps to first data set of next set.

In the determination table it is not possible to show more than 200 determinations at once. If more than 200 determinations are present in the database then the navigation bar must be used to switch to further sets of determinations.

4.5.1.8 Determination overview - Data set selection

Subwindow: **Database ▶ Determination overview**

The determinations selected in the table are displayed in **green**; the focused determination, the data of which is displayed in the other sub-windows, is marked with an arrow before the line number. The first determination is always selected and focused when a database is opened.

The following possibilities are available for the selection of determinations in the determination table:

- **Single determinations**

Single determinations are selected by clicking on them with the mouse within the line (including line number). This determination whose data is shown in the other opened subwindows is now focused and marked with an arrow in front of the line number.

- **Several determinations in sequence**

In order to select several determinations in sequence, the required range can be selected with the left mouse button pressed down. It is also possible to select a range with a click on the first determination and **[Shift] & click** on the last determination. The last determination to be selected receives the focus.

- **Several determinations not in sequence**

In order to select several determinations not in sequence, the individual determinations must be selected with the **Ctrl key** and the left mouse button. The last determination to be selected receives the focus.

- All determinations

With **[Ctrl] [A]** or by clicking on the uppermost left-hand table field, all the filtered determinations within the current set of determinations are selected. The focus is retained.

4.5.2 Determination overview - Functions

4.5.2.1 Updating the determination overview

Menu item: **Database ▶ View ▶ Update**

The **View ► Update** menu item or the  symbol is used to update the determination table.



Note

The determination table is updated automatically when the database is opened and when changing from one other program part to the **Data-base** program part, but afterwards only when resorting or refiltering is carried out.

4.5.2.4 Searching for determinations

The **Determinations ► Search...** menu item or the  symbol opens the **Search - Database 'Name'** dialog window for the search for determinations.

Selection of the data field in which the search is to be carried out.

A search is made only in the selected field. The 10 most recently selected fields are always available for selection.

Opens the **Search - Field selection** dialog window in which all fields that can be used for searching are displayed in the form of a tree. A field can be included in the search by highlighting it and closing the dialog window with **[OK]**.

Type

Selection	Text Date Number
Default value	Text

Selection of the comparison operator for the search criterion.

Selection	=	<>	empty	not empty
Default value	=			

Selection	= <> < <= > >= empty not empty invalid out of limits Today
Default value	=

**invalid**

Values with the **invalid** entry are searched for.

out of limits

Values that are outside of the defined limit values for the selected fields will be searched for (values shown in red).

Today

A search is made for the current date. A range in days can also be defined in the **Search term** field, according to which the search should be carried out, starting from the current date.

for fields of the type = number

Selection	= <> < <= > >= empty not empty invalid out of limits
Default value	=

invalid

Values with the **invalid** entry are searched for.

out of limits

Values that are outside of the defined limit values for the selected fields will be searched for (values shown in red).

Search word

Entry of the search term for the search in the selected data field. For fields where **Type** = **Date**, the date can be selected by pressing on [...] in the **Select date** dialog window.

for fields of the type = text

Entry	256 characters Definition of a text expression as a search term. The last 10 search terms are saved and can be selected. The following wildcards can be used in the search term:
Selection	^? ^# ^\$ ^*

Λ?

Wildcard for any character.

 $\wedge \#$

Wildcard for any digit.

 $\wedge \$$

Wildcard for any letter of the alphabet.

 Λ^*

Wildcard for any character string.

Entry	all possible date values Definition of a date as search term. The last 10 search terms are saved and can be selected.
-------	---

Input range	-9999 - 9999
Default value	0
	Definition of a numerical value as a range in days in which, starting from the current date, the search is to be carried out. The last 10 search terms are saved and can be selected.

Entry	all possible numerical values Definition of a numerical value as search term. The last 10 search terms are saved and can be selected.
-------	---

Selection of the search direction.

Selection	All Down Up
Default value	All

A search will be made down to the end of the database and then again from above down to the selected data set.

A search will be made to the end of the database.

A search will be made to the beginning of the database.

on | off (Default value: **off**)

If this option is activated, then upper/lower case will be differentiated when searching in fields of the **Text** type.

on | off (Default value: **off**)

If this option is enabled, then the field contents must be identical with the search term during searches in **Text** fields (no part-search).

Search until next occurrence of the search term.

4.5.2.5 Filtering determinations

4.5.2.5.1 Filtering determinations - Overview

Subwindow: **Database ▶ Determination overview**

The following possibilities exist for filtering determinations in the determination table:

- *Filter selection in the filter bar*
- *Last filter*
- *Quick filter*
- *Special filter*
- *Remove filter*

4.5.2.5.2 Determinations - Last filter

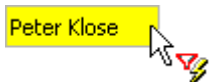
Menu item: **Database ▶ Determinations ▶ Filter ▶ Last filter**

The most recently applied filter is reactivated with the **Determinations ► Filter ► Last filter** menu item or with the  symbol.

4.5.2.5.3 Determinations - Quick filter

Menu item: **Database ▶ Determinations ▶ Filter ▶ Quick filter**

A rapid filtration can be carried out in accordance with the content of the selected table field using the **Determinations ► Filter ► Quick filter** menu item or the  symbol. After this function has been selected, the field in the determination table in which the cursor is located will have a colored background during navigation. At the same time, the following special filter symbol appears:



Double-clicking with the left mouse button on the field selected in the table will cause its contents to be set as the filter criterion, and this filter will be applied directly to the table.



Note

The quick filter can be applied again within the filtered table, so that the number of entries can be limited step by step.

Determinations - Special filter

Dialog window: **Database ▶ Determinations ▶ Filter ▶ Special filter... ▶ Special filter - Database 'Name'**

The **Determinations ► Filter ► Special filter...** menu item or the  symbol is used to open the **Special filter - Database 'Name'** dialog window for the definition of user-specific filters.

Filter

Selection of the filter to be loaded for editing.

Selection	'Filter name' New filter
Default value	New filter

'Filter name'

The saved filter is loaded.

New filter

An empty table with the name **New filter** is loaded.

[Save filter]

Opens the **Save filter** dialog window in which the filter criteria entered in the table can be saved as a special filter under the required name.

[Delete filter]

The currently loaded special filter is deleted.

Table view

The overview table shows all the defined filter criteria and cannot be directly edited. The filter conditions will be numbered automatically in sequence. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles**
Sets the column width
- **Double-click on the margin between column titles**
Sets the optimal column width

For the meaning of the columns, see *Edit filter criterion*.

Functions

The **[Edit]** menu beneath the filter table contains the following menu items:

Edit line	Opens the Edit filter criterion dialog window in which the filter condition of the line selected in the table can be edited (<i>see Chapter 4.5.2.5.7, page 175</i>).
------------------	--

Insert new line	Inserts a new empty line above the line selected in the table. The Edit filter criterion dialog window then opens automatically (<i>see Chapter 4.5.2.5.7, page 175</i>).
Cut lines	Transfers the selected lines to the clipboard.
Copy lines	Copies the selected lines to the clipboard.
Paste lines	Pastes lines from the clipboard above the selected line.
Delete lines	Deletes the selected lines.

[Apply filter]

Applies filter criteria to the determination table.

4.5.2.5.5 Determinations - Deleting a filter

Menu item: **Database ▶ Determinations ▶ Filter ▶ Remove filter**

The **Determinations** ► **Filter** ► **Remove filter** menu item or the  symbol is used to delete the most recently used filter, and all determinations will be displayed.

4.5.2.5.6 Determinations - Saving a filter

Dialog window: **Database ▶ Determinations ▶ Filter ▶ Special filter... ▶ Special filter - Database 'Name' ▶ [Save filter] ▶ Save filter**

The **[Save filter]** button is used to open the **Save filter** dialog window for saving a special filter.

All the saved special filters are shown in the upper field.

Filter name

Name under which the special filter is to be saved.

Entry	50 characters
-------	---------------

[Save]

Saves the filter under the given name.



Note

The filters are saved globally in the configuration database and are therefore available for all clients.

4.5.2.5.7

Dialog window: **Database ▶ Determinations ▶ Filter ▶ Special filter... ▶ Special filter - Database 'Name' ▶ [Edit] ▶ Edit line ▶ Edit filter criterion 'Name'**

[Edit] ► Edit line is used to open the **Edit filter criterion 'Name'** dialog window in which the filter criterion selected in the filter table can be edited.

Link

Selection of the type of link (logical operator) with the preceding filter condition.

Selection	AND OR
Default value	AND

AND

Logical "AND" link.

OR

Logical "OR" link.

Field

Selection of the data field for which a condition is to be formulated.

Selection	'Field name' Filtering is carried out only for the selected field. The 10 most recently selected fields are always available for selection.
-----------	--

[More...]

Opens the **Filter - Field selection** dialog window in which all fields that can be used for filtration are listed in the form of a tree. A field can be included by highlighting it and closing the dialog window with **[OK]**.

Condition

Type

Selection of the type of format for fields in which several types are possible. Only this type will be shown for fields with a fixed type.

Selection	Text	Number	Date
Default value	Text		

Operator

Selection of the comparison operator for the filter criterion.

for fields of the type = text

Selection	= <>
Default value	=

Entry	all possible numerical values Definition of a numerical value as comparative value.
-------	---

Entry	64 characters
-------	---------------

4.5.2.7 Signing determinations

4.5.2.7.1 Rules for electronic signatures

Program parts: **Method / Database**

In StabNet, methods and determination can be **electronically signed** at two levels. The following rules apply for this:

- **Signature levels**
Methods and determinations can be signed at two levels (Signature Level 1 and Signature Level 2) by entering the user name and password.
- **Multiple signing**
Methods and determinations can be signed several times at each level. All signatures are saved and documented in the Audit Trail.
- **Signing at Level 1**
If Level 2 has been signed then no more signatures are possible at Level 1.
- **Signing at Level 2**
Level 2 can only be signed if signatures already exist at Level 1.
- **Different users**
The same user may sign only on either Level 1 or Level 2.
- **Reason and comment**
Each signature must be accompanied by a reason selected from predefined default reasons. Additionally, a further comment can be entered.
- **Saved data**
For each signature, signature date, user name, full name, reason and comments are saved.
- **Deleting signatures 1**
Signatures at Level 1 are automatically deleted again when creating a new version.
- **Deleting signatures 2**
Signatures at Level 2 can only be deleted by users who have the appropriate rights.
- **Signing methods**
Methods can only be signed individually.
- **Signature options**
The options for electronic signatures are set in the **Signatures** tab in the **Security settings** dialog window.

4.5.2.7.2 Signature Level 1

Dialog window: **Database ► Determinations ► Sign ► Signature 1... ► Signature Level 1**

Dialog window: **Method ► File ► Method manager... ► Method manager ► [Sign] ► Signature 1... ► Signature Level 1**

Methods or determinations can be signed at level 1 in the **Signature Level 1** window.



Note

Methods or determinations which have been signed at level 1 can be modified and deleted. If the modified method or determination is saved as a new version, then all existing signatures will be deleted automatically, i.e. the method or determination must be signed again.

Info

Display of information for signing and deleting signatures. The following messages are possible:

Selection	Signature possible (signature 2 exists)	Signature 1 not possible (accessed by other client)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
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96		
97		
98		
99		
100		

Signature possible

The selected method or determination can be signed.

Signature 1 not possible (signature 2 exists)

The selected method or determination can no longer be signed at level 1 as it has already been signed at level 2.

Signature not possible (accessed by other client)

The selected method or determination cannot be signed as it is already marked to be signed on a different client.

User

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Password

Entry of the password.

Entry	24 characters
-------	---------------

Reason

Selection from the **Default reasons** defined in the **Security settings** dialog window for the **Signature level 1** category.

Selection	'Selection from the default reasons'
-----------	--------------------------------------

Comment

Entry of a comment on the signature.

Entry	1000 characters
-------	-----------------

[Sign]

Sign the method or determination. The window remains open.



4.5.2.7.3 Signature Level 2

Dialog window: **Database ▶ Determinations ▶ Sign ▶ Signature 2... ▶ Signature**
Level 2

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Signature 2... ▶ Signature Level 2**

Methods or determinations can be signed at level 2 in the **Signature Level 2** window.



Info

Information for signing and deleting signatures is displayed in this box. The following messages are possible:

Selection	Signature possible Signature 2 not possible (signature 1 missing) Signature not possible (accessed by other client)
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
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97	
98	
99	

Signature possible

The selected method or determination can be signed.

Signature 2 not possible (signature 1 missing)

The selected method or determination cannot be signed at level 2 as it has not yet been signed at level 1.

Signature not possible (accessed by other client)

The selected method or determination cannot be signed as it is already marked to be signed on a different client.

User

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Password

Entry of the password.

Entry	24 characters
Reason	Selection from the Default reasons defined in the Security settings dialog window for the Signature level 2 category.
Selection	'Selection from the default reasons'
Comment	Entry of a comment on the signature.
Entry	1000 characters
[Sign]	Sign the method or determination. The window remains open.



Note

Methods or determinations can only be signed at level 2 if the user belongs to a user group with the corresponding permission.

4.5.2.7.4 Displaying determination signatures

Dialog window: **Database ▶ Determinations ▶ Sign ▶ Show signatures... ▶ Signatures - Determination 'Determination ID'**

The **Determinations ▶ Sign ▶ Show signatures...** menu item opens the **Signatures - Determination 'Determination ID'** window with a table in which the information for all of the signatures for the selected determination is displayed.

Signature	Shows at which level the determination has been signed (Level 1 or Level 2).
Signature date	Date and time at which the determination was signed.
User	Short name of the user who signed the determination.
Full name	Full name of the user who signed the determination.
Reason	Reason for signature.

Comment on the signature.

All signatures on level 2 for the selected method or determination can be deleted in the **Delete Signatures Level 2** window.

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Entry of the password.

Entry	24 characters
-------	---------------

Selection from the **Default reasons** defined in the **Security settings** dialog window for the **Signature level 2** category.

[illegible]

Entry of a comment on the signature.

Entry

1000 characters

Delete signatures 2.



Note

Signatures 2 can only be deleted if the user belongs to a user group with the corresponding permission.

All selected data records

All filtered data records

Export template

Selection	'Export template'
-----------	-------------------

Dialog window: **Database ▶ Determinations ▶ Import... ▶ Import determinations**



Exported determinations can be imported only in the ***.rdet** file format.

Menu item: **Database ► Determinations ► Delete**



If a database is opened simultaneously on several clients and if determinations are deleted on a client, then these will continue to be shown on the other clients in the determination table until the table is updated. All of the fields of these determinations will then have the entry **deleted**.



Note

If the **Comment on modification of determinations** option in the **Security settings** is switched on, then the **Modification comment** window appears before saving.

4.5.2.12 Determinations - Showing method

Menu item: **Database ▶ Determinations ▶ Show method...**

The **Determinations** ► **Show method...** menu item or the  symbol opens the **Determination method 'Method name'** dialog window in which the method used for the selected determination is displayed with the three subwindows **Measuring parameters**, **Evaluation** and **Properties**. In contrast to the **Method** program part, there are no parameters available for editing here.

Saving the method

[Save As...]

With this button, the determination method can be saved in a method group. To accomplish this, the **Save method** window is opened in which the method group is selected and a method name can be entered or selected.

4.5.2.13 Determinations - Displaying history

Menu item: **Database ▶ Determinations ▶ Show history**

Menu item: **Database ► Determinations ► Make current**

Activating/deactivating history view

With the **Determinations ► Show history** menu item or the  symbol, only the currently focused determination and all of the previous versions of this determination will be shown in the determination table.

If the history view is disabled again with the **Determinations ► Show history** menu item or the  symbol, then the original selection of determinations in the determination table will appear again.

Making an old version current

The **Determinations ► Make current** menu item or the  symbol causes the determination version selected in the table to be made the current determination version again. This creates a new determination whose version number is increased by **+1** compared with the last version to have been saved.

Determinations - Report output

Dialog window: **Database** ▶ **File** ▶ **Print** ▶ **Report...** ▶ **Report output**

Selection

Selection	Selected determinations All filtered determinations
Default value	Selected determinations

Selected determinations

If this option is selected, then the reports will be produced for all determinations that are selected (highlighted) in the determination table.

All filtered determinations

If this option is selected, then the reports will be produced for all the determinations in the determination table that meet the filter criterion.

Report type

Selection	Original report template(s) Report template
Default value	Original report template(s)

Original report template(s)

The report template that was selected at the time a method was created is referred to as the original report template. The determination reports are produced at the **output target** defined below with this report template. If a determination is being reprocessed, a new determination version is created and the content of the original report is updated.

Report template

If this option is selected, then reports according to the selected report template will be produced at the **Output target** defined below.

Output target

Printer

on | off (Default value: **on**)

If this check box is activated, the reports are printed on the selected printer.

Selection	Default printer 'Printer name'
Default value	Default printer

PDF file

on | off (Default value: **off**)

If this check box is activated, then the reports are output as PDF files under the entered file name.

A dialog window is opened with the  button in which the desired directory is selected and a name for the PDF files can be entered. An index is appended automatically to the name at the time of output.



Note

If several reports are produced simultaneously as a PDF file, then an index will be automatically appended to the file name.

4.5.2.15 Determinations - Detail overview

4.5.2.15.1 Opening detail overview

Dialog window: **Database ▶ Determinations ▶ Detail overview... ▶ Open detail overview**

Specification is made in this dialog window as to which determinations are to be displayed for the detail overview.

Selection

Selection of the determinations that are to be displayed in the detail overview.

Selection	Selected determinations All filtered determinations
Default value	Selected determinations

Selected determinations

All those determinations are displayed that have been selected (highlighted) in the determination table.

All filtered determinations

All those determinations from the whole determination table are displayed in the detail overview that correspond to the set filter.

4.5.2.15.2 Detail overview - General

Dialog window: **Database** ▶ **Determinations** ▶ **Detail overview...** ▶ **Open detail overview** ▶ **[OK]** ▶ **Detail overview**

After the determinations have been selected (*see Chapter 4.5.2.15.1, page 188*), the **Detail overview - Results** dialog window opens in which the results and control charts for the selected determinations are displayed.

The dialog window contains the following two areas, which can be selected with the respective symbol on the left-hand side:

- *Results*
- *Control chart*

4.5.2.15.3

Dialog window: **Database ▶ Determinations ▶ Detail overview... ▶ Open detail overview ▶ [OK] ▶ [Results] ▶ Detail overview - Results**

The dialog window displays the results for the selected determinations in graphics and tabular form, along with the associated statistical evaluations.

Graph display

The results contained in the selected determinations are displayed as graphs through several determinations. Each result defined in the method has a tab of its own that has the result name (**Induction time, Stability time, Standard time**) as its designation.

The y axis is automatically scaled in the unit **h** (hours); on the x axis the selected determinations are numbered sequentially from **1** to **n** in accordance with their recording date and displayed at identical intervals. The statistical mean value is marked in the graph as a blue line.

The result values are presented with the following symbols:



Result of a determination that is taken into account for the statistical calculations. A mouse click on the symbol will also cause the associated determination to be highlighted in the table.

Result of a determination that is taken into account for the statistical calculations and which is also highlighted in the table.



Result of a determination that is not taken into account for the statistical calculations.

The following context-sensitive menu opens with a right-hand mouse click inside the graphics frame:

Show all	Shows the entire graph. This menu item is always enabled.
Zoom...	Opens the dialog for entry of a zoom range (<i>see Chapter 4.5.2.15.5, page 195</i>).
Unzoom	Undoes the last zoom action.
Copy	Copies the graph.

Axes

y axis

The y axis is labeled with the unit of the result.

The scaling of the y axis takes place automatically in accordance with the values of the respective result.

The unit of the result of the first determination is used as the unit.

x axis

The 'Number' of the results is entered on the x axis

The results of the various determinations are all displayed with the same spacing. The results of the determinations are listed from left to right in accordance with the ascending recording date of the determination.

If the determination does not contain the result displayed, then this space will remain empty.

Statistics

The results of the determinations used (see under *Table*) are statistically evaluated automatically and the calculated dimensions are listed below the graph.

The same number of decimal places is displayed as in the database part

Results.

The **mean value** will be shown on the graph as a continuous blue line.

Mean value:

Mean value of the results.

Minimum:

Smallest value of the results.

Maximum:

Largest value of the results.

Absolute standard deviation:

Absolute standard deviation of the results.

Relative standard deviation:

Relative standard deviation of the results.

Number of determinations:

Total number of determinations in the table for which statistics are activated.

Table

Table with information concerning the selected determinations. It contains the following columns:

Date

Date the determination was recorded.

Number

Number of the determination (sorted chronologically).

Ident

Identification for the sample data of the determination.

Method

Name of the method used for the determination.

Induction time

Value of the induction time.

Stability time

Value of the stability time.

Standard time

Value of the standard time.

Statistics

Indicates whether a result was used for calculation of the statistics or not.

The graph of the results values is synchronized with the determination table. A point can be selected in either the graph or in the table. The point is then highlighted in **blue** and the corresponding line in the table in **green**. Points that were deleted manually from the statistics appear as a **black cross** in the graph.

Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles**
Sets the column width.
- **Double-click on the margin between column titles**
Sets the optimal column width.
- **Drag the column title**
Moves the column to the required location.

Clicking on the table of determinations with the right mouse button causes a context-sensitive menu to appear with the following menu items:

On	Activates the Statistics check box for the highlighted determinations.
Off	Deactivates the Statistics check box for the highlighted determinations.



X

The following context-sensitive menu opens with a right-hand mouse click inside the graphics frame:

Show all	Shows the entire graph. This menu item is always enabled.
Zoom...	Opens the dialog for entry of a zoom range (<i>see Chapter 4.5.2.15.5, page 195</i>).
Unzoom	Undoes the last zoom action.
Copy	Copies the graph.

y axis

x axis

The results of the various determinations are all displayed with the same spacing. The results of the determinations are listed from left to right in accordance with the ascending recording date of the determination.

The date and time for the first and last point are shown as the legend.

Table with information concerning the selected determinations. It contains the following columns:

Date the determination was recorded.

Number of the determination (sorted chronologically).

Identification for the sample data of the determination.

Method

Name of the method used for the determination.

Induction time

Value of the induction time.

Stability time

Value of the stability time.

Standard time

Value of the standard time.

Statistics

Indicates whether a result was used for calculation of the statistics or not.

The graph of the results values is synchronized with the determination table. A point can be selected in either the graph or in the table. The point is then highlighted in **blue** and the corresponding line in the table in **green**. Points that were deleted manually from the statistics, appear as a **black cross** in the graph.

Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles**
Sets the column width.
- **Double-click on the margin between column titles**
Sets the optimal column width.
- **Drag the column title**
Moves the column to the required location.

Clicking on the table of determinations with the right mouse button causes a context-sensitive menu to appear with the following menu items:

On	Activates the Statistics check box for the highlighted determinations.
Off	Deactivates the Statistics check box for the highlighted determinations.
Invert selection	Inverts the selection of the highlighted determinations.



Note

Highlighted lines in the table can be copied to other programs with CTRL+C and CTRL+V. The context menu for the table is not permitted to be open while this is carried out!

The offset based on the reference point that is used to display the curves for clear comprehension.

Offset on the X axis (time axis). The curves are moved towards one another by the amount of the specified percentage of the length of the selected curve.

Y-Axis

Offset on the Y axis (measurement value axis). The curves are moved towards one another by the amount of the specified percentage of the height of the selected curve.

4.5.2.16.3.2

Tab: Database ▶ Determinations ▶ Overlay curves... ▶ Overlay curves ▶ OK ▶ Overlay of curves ▶ Properties... ▶ Overlay of curves - properties ▶ Colors

On this tab you can define and modify the colors which will be used for the display of the curves in the curve overlay. In the default settings, 10 colors are defined (standard colors).

The table permits the definition of 1 to 20 colors. The defined colors are applied in sequence to the curves that are selected in the curve overlay.

The following context-sensitive menu opens with a right-hand mouse click inside the table:

StabNet 1.0



Moves color downward (modifies sequence).

[Load default colors]

Pressing this button causes the table of the colors to be reset to the 10 standard colors. Any changes you made yourself will be lost at this time. The changes will however be permanently applied by first pressing the **[OK]** button.

4.5.2.16.4 Printing the curve overview (PDF)

Dialog window: **Database ▶ Determinations ▶ Overlay curves... ▶ Overlay curves ▶ OK ▶ Overlay of curves ▶ Print (PDF) ▶ Print curves overview (PDF)**

The **Print curves overview (PDF)** dialog window opens with **[Print (PDF)]**.

Orientation

Selection	Portrait Landscape
Default value	Portrait

Portrait

Produces the curve overview in portrait format.

Landscape

Produces the curve overview in landscape format.

Comment

Possibility of entering comments on the curve overview that will be produced along with it.

Entry	0 - 1000 characters
-------	---------------------

[OK]

The curve overview is produced in the required format as a PDF file and can be opened directly with Acrobat Reader; it can then be printed and/or saved.

4.5.2.17 Determinations - Reprocessing

4.5.2.17.1 Reprocessing - General

Dialog window: **Database ▶ Reprocess... ▶ Reprocessing**

Reprocessing determinations

The determinations saved in the database can be reprocessed at any time. Sample data, evaluation parameters and result definitions can be modified and the results can be recalculated. The reprocessed determination can then be saved in the database as a new version.



- **Recalculate**
All of the determinations are reprocessed that are located in the Reprocessing table. If one determination is not to be reprocessed, then the respective line must be deleted.
- **Sequence**
The determinations are reprocessed in the same sequence in which they are to be found in the reprocessing table.
- **Move manually**
If the induction time in the **Curves** subwindow was moved manually during reprocessing, then the induction time will **not** be calculated automatically during reprocessing.
- **Set tangent**
If the induction time in the **Curves** subwindow was redetermined during reprocessing by the setting of a tangent, then the induction time will **not** be calculated automatically during reprocessing.

4.5.2.17.3 Reprocessing window

Dialog window: **Database** ▶ **Reprocess...** ▶ **Reprocessing**

Subwindows

The **Reprocessing** dialog window contains the following subwindows that can be enlarged and reduced by dragging the separating bar between them:

- *Reprocessing table*
Selecting determination, editing sample data and defining sequence in which the determinations are to be reprocessed.
- *Results*
Displaying reprocessing results.
- *Evaluation*
Editing evaluation parameters.
- *Curves*
Evaluating curves manually, displaying measurement curves.

Functions

The buttons with which the various reprocessing operations can be triggered are located on the lower edge of the window.

[Method...]

The button opens a menu with the following menu item:

Save As...	Opens the Save method dialog window (see Chapter 5.2.6, page 249). The method from which the evaluation parameters originate is saved. This menu item is active only if a determination is selected.
-------------------	---

[Recalculate]

Triggers reprocessing. If determinations were evaluated manually, then a query appears as to whether these manual evaluations should be retained or not. As long as the reprocessing is running, all subwindows and buttons are disabled; a progress bar is displayed in the lower area of the window.

**Note**

All determinations are reprocessed with the evaluation parameters of the **selected** determination.

It is not until this moment that all the modifications that were made in the reprocessing are incorporated into the determinations. The changed results and measurement curves are displayed in the **Reprocessing table**, **Results**, and **Curves** subwindows.

[Update]

Is used to apply changes in the evaluation parameters to **the selected determination**. This makes it possible to find the correct evaluation parameters quickly without reprocessing the entire table with each optimization attempt.

[Undo]

This button is used to reset all modifications made during reprocessing but not yet saved; the original data and results are then available once again.

[OK]

With this button, a new version with a version number increased by **+1** is saved for each determination that has been modified by reprocessing and the **Reprocessing** subwindow will be closed.

The button is active only when reprocessing was triggered with **[Recalculate]** and the determinations are consistent with the altered parameters. The button becomes inactive once again as soon as something is edited in reprocessing.

All reprocessed determinations are stored with the status **modified**.

The method status of a reprocessed determination changes from **original** to **modified** if the evaluation parameters have been changed. If only sample data has been changed, then the method status remains the same as before. A determination with the **modified** method status retains this method status under all circumstances.

The manual changes in the curve subwindow (**Move induction time** and **Set tangents manually**) are also saved (see Chapter 4.5.2.17.7, page 213)).



Note

If the **Comment on modification of determinations** option is activated under **Configuration ▶ Tools ▶ Security settings... ▶ Security settings ▶ Audit Trail/Modifications**, then the **Modification comment determination** dialog window will appear before saving (see Chapter 4.5.2.17.8, page 214).

[Cancel]

With this button, the result of the reprocessing made since the last saving will not be saved and the **Reprocessing** subwindow will be closed. The same function can also be triggered with the  symbol in the upper right-hand corner of the window.

Progress bar

A progress bar appears in the lower part of the window during recalculation or updating. **The buttons of the dialog window are disabled during this time.** The reprocessing can be canceled thereby with the  symbol next to the bar.

It is not until after the end that additional data can be modified and recalculation or updating can once again be triggered. The recalculated curves appear in the **Curves** subwindow after the recalculation.

4.5.2.17.4 Reprocessing table subwindow

4.5.2.17.4.1 Reprocessing table

Subwindow: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Reprocessing table**

The determinations that are up for reprocessing are listed in the **Reprocessing table** subwindow of the **Reprocessing** dialog window. The sample data of the individual determinations can be modified here and the sequence in which the determinations are to be processed is established here.

Table

The table contains all of the determinations that are to be reprocessed.

It has a fixed number of columns. The **Determination start**, the **Method name**, all sample data (**Ident**, **Info 1**, **Info 2**, **Info 3**), the **Induction time [h]**, the **Stability time [h]** and the **Evaluation type** are displayed in separate columns for each determination. The sequence of the columns can be modified per Drag&Drop.

By default, the table is sorted in ascending order according to the determination start time. The sequence can, however, be modified with the arrow keys on the right-hand margin.

- The properties of the selected determination are displayed in the **Results, Evaluation** and **Curves** subwindows.
- The selected determination can be moved upwards or downwards with the arrow keys in the reprocessing table.
- The selected determination can be edited or deleted.

Note

The sequence of the determinations in the reprocessing table establishes the sequence in which the determinations will be reprocessed.



[Edit] contains the following menu items:

Edit line	Opens the Edit line - Reprocessing dialog window to edit the sample date of the selected determination (<i>see Chapter 4.5.2.17.4.2, page 208</i>).
Delete line	The selected determination is removed from reprocessing. Multiple determinations cannot be deleted individually in the reprocessing table.
Increment	Using the cursor, which takes on the form  , the range which is to be automatically incremented can be selected from a column in the table. The number standing at the end of the expression will thereby be automatically increased by 1 in the selected cells of a column, starting from the first selected cell (<i>see Chapter 4.5.2.17.4.3, page 210</i>). This works not only with pure numbers but also with text expressions which end with a number (e.g. ABC10 → ABC11 → ABC12...).
Filling	Fill the selected cells automatically (<i>see Chapter 4.5.2.17.4.4, page 210</i>).

Can limit values for the sample data be edited in reprocessing?

No. That is not relevant for the reprocessing of a determination. Because of the fact that this involves a method property, it must be carried out in the method editor.

What is triggered by the editing of the sample data?

The changes are not incorporated in the determination(s) until the reprocessing has been actively triggered:

- In *one* highlighted determination with **[Update]**.
- In *all* of the determinations in the table with **[Recalculate]**.

Navigation



Display of the currently selected line in the table with the following functions:



Jumps to the first line in the table.



Jumps to the previous line in the table.



Option of entering the desired line number to which the program directly jumps when the **[Enter]** key is pressed.



Jumps to the next line in the table.



Jumps to the last line in the table.

Functions

[Apply]

Applies the sample data entered in the respective line of the table.

[Close]

Closes the input window. The current sample data will not be applied in the table (this needs to be triggered beforehand with **[Apply]**).

4.5.2.17.5 Subwindow Results

Subwindow: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Results**

The results of the selected determination are displayed in the **Results** subwindow of the **Reprocessing** dialog window. Structure and properties correspond to the **Results** subwindow in the **Database** program area (see Chapter 4.7, page 234).

Tabs

The results of the determination are shown on the following tabs:

- *Results*
Display of the calculated results.
- *Statistics*
Display of the statistics data concerning the statistically evaluated results of multiple determinations. This tab is displayed only if a statistics has been defined in the method.
- *Monitoring*
Display of the monitoring data. This tab is displayed only if a monitoring has been defined in the method.

4.5.2.17.6 Evaluation subwindow

Subwindow: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Evaluation**

The evaluation parameters of the selected determination are displayed in the **Evaluation** subwindow of the **Reprocessing** dialog window.

Evaluation sections

The **Evaluation** subwindow is comprised of three sections that can be selected with the following symbols on the left-hand symbol bar:



The automatic evaluation of the induction time and the stability time of the determination selected in the reprocessing table can be activated or deactivated and the standard time can be calculated in the **Parameters** section (see Chapter 5.6.2, page 271).



Additional results can also be defined by the user in the **Results** section, and results can be both evaluated statistically and monitored (see Chapter 5.6.3, page 274).



Report templates, the databases for the storage of the determination data and export templates are defined in the **Documentation** section (see Chapter 5.6.4, page 281).

Editing the evaluation parameters

Even though the entire evaluation of the method is visible, not all of the ranges can be edited in reprocessing. The sections that cannot be edited are not executed in reprocessing.

4.5.2.17.7 Subwindow curves

Subwindow: **Database ▶ Reprocess... ▶ Reprocessing ▶ Curves**

The measurement curve of the determination selected in the reprocessing table is displayed in the **Curves** subwindow. This curve can be reprocessed manually.

Toolbar

The toolbar above the curve contains symbols with the following functions for re-evaluation of the curve:



Move induction time

Pressing this symbol makes it possible to move the induction time to a required position manually. When the cursor is placed on the induction timeline, it assumes the following shape: $\longleftrightarrow$. The induction timeline is moved to the required position with the left mouse button pressed down.



Set tangents manually

The induction time can be redetermined manually by setting two tangents after pressing this symbol. The first point on the curve at which the first tangent is to be created automatically is selected by moving the cursor and clicking with the left mouse button. The first tangent is set after selecting the second point and clicking with the left mouse button. A third point is selected afterwards at which the second tangent is to be created by moving the cursor and clicking with the left mouse button. The second tangent is set and a new endpoint is set simultaneously at the intersection point of the two tangents after the fourth point has been selected and the left mouse button has been clicked.

Move tangent points

The set tangent points can also be moved once again later. To accomplish this, the cursor must be placed on the desired tangent point until a cross hair appears. After a click with the left mouse button, the tangent point can now be moved with the mouse to the required new location. Clicking once more with the left mouse button sets the tangent point.



Delete tangents

The tangents that were set manually are deleted once again. They can be subsequently created once again. They can be edited only if **Set tangents manually = active**, otherwise the symbol is disabled.



Automatic evaluation

The evaluation with the 2nd derivative is displayed after this symbol is pressed.

Context-sensitive menu

Clicking on the curve window with the right mouse button will cause a context-sensitive menu to appear with the following menu items:

Show all	Shows the entire curve. This menu item is always enabled.
Zoom...	Opens the dialog for entry of a zoom range (see Chapter 4.8.5.2, page 239).
Unzoom	Undoes the last zoom action (as often as required).
Copy	Copies the measurement curve displayed in the graphics window to the clipboard.

Saving manual evaluations

The [OK] button in the **Reprocessing** dialog window is used to save a new version of every determination that has been modified by the reprocessing, together with a version number than has been increased by **+1**, and to close the **Reprocessing** subwindow (see Chapter 4.5.2.17.3, page 204). If the induction time was moved beforehand or if the induction time was changed by the setting of tangents, then the new position of the induction line, the associated induction time and the previously created tangents will also be saved in the **Curves** subwindow when this saving is carried out.

4.5.2.17.8 Modification comment for determinations

Dialog window: **Database ▶ Determinations ▶ Delete/Reprocess...**

If the **Comment on modification of determinations** option is switched on in the security settings, then the **Modification comment determination** window appears, in which a **Reason** must be selected and a **Comment** on the modification must be entered before the modified determination can be accepted.

Reason

Selection from the default reasons defined in the **Security settings** dialog window for the **Modification of determinations** category.

Selection	Selection from default texts
-----------	-------------------------------------

Comment

Entry of a comment on the modification of the determinations.

Entry	1000 characters
-------	------------------------

4.5.2.18 Determinations - Extrapolation

4.5.2.18.1 Extrapolation - Calculation

4.5.2.18.1.1 General notes on calculation

Subwindow: **Database ► Extrapolation**

Extrapolation can be used to convert the results (induction time or stability time) measured at various temperatures to a required target temperature. Furthermore, the Q_{10} factor and the temperature coefficient for the Arrhenius calculation type for the conversion of the induction or stability time into the standard time can be determined with this procedure.

The extrapolation can be carried out two ways:

- **in accordance with the Q_{10} rule**
The Q_{10} rule is an empirical rule. When extrapolation is carried out in accordance with the Q_{10} method, the Q_{10} factor, with which the standard time can be calculated, is determined from the Q_{10} coefficient B .
- **in accordance with the Arrhenius equation**
The Arrhenius equation describes the exact temperature dependency of the reaction speed.

4.5.2.18.1.2 Calculation in accordance with Q_{10}

Subwindow: **Database ► Extrapolation**

The dependency of the reaction speed on the temperature is generally described with the following formula:

$$(1) \quad t = A \cdot e^{(B \cdot T)}$$

Variable symbol	Variable name	Unit	Description
t	Induction or stability time	h	Time until the break point or the defined conductivity change in the conductivity vs. time curve.
A	Coefficient		
B	Q_{10} coefficient		Coefficient with which the Q_{10} factor can be calculated
T	Temperature	°C or K	Temperature for which the induction or stability time is calculated.

Linear equation for the calculation of the coefficients A and B from the linear regression

Equation (1) logarithmized

The result with $\frac{t_2}{t_1} = Q$ and $T_1 = T_2 + 10^\circ\text{C}$ is

$$(9) \quad Q = e^{B \cdot (T_2 - T_1)}$$

$$(10) \quad Q_{10} = e^{B \cdot (-10)}$$

Calculation of the extrapolated induction or stability time with the help of Q_{10}

In accordance with equation (8), the following is true

$$(11) \quad \frac{t_e}{t_m} = e^{B \cdot (T_e - T_m)}$$

Equations (10) and (11) result in

$$(12) \quad \frac{t_e}{t_m} = Q_{10}^{\frac{T_e - T_m}{10}}$$

$$(13) \quad t_e = t_m \cdot Q_{10}^{\frac{T_m - T_e}{10}}$$

Variable symbol	Variable name	Unit	Description
T_m	Measuring temperature	°C	Temperature at which the induction or stability time is measured.
t_m	Induction or stability time at measuring temperature	h	Induction or stability time that is measured at the defined temperature T_m
T_e	Target temperature	K	Target temperature for the extrapolation

Variable symbol	Variable name	Unit	Description
t_e	Induction time at target temperature	h	Induction or stability time at target temperature T_e to be calculated

4.5.2.18.1.3 Calculation in accordance with Arrhenius

Subwindow: **Database** ▶ **Extrapolation**

According to Arrhenius, the dependency of the reaction speed on the temperature is described with the following formula:

$$(1) \quad t = A \cdot e^{(B \cdot \frac{1}{T})}$$

Variable symbol	Variable name	Unit	Description
t	Induction or stability time	h	Time until the break point or the defined conductivity change in the conductivity vs. time curve.
A	Coefficient		
B	Arrhenius coefficient		
T	Temperature	K	Temperature for which the induction or stability time is calculated.

Linear equation for the calculation of the coefficients A and B from the linear regression

Equation (1) logarithmized

$$(2) \quad \ln(t) = B \cdot \frac{1}{T} + \ln A$$

General linear equation

$$(3) \quad y = m \cdot x + b$$

y corresponds to $\ln(t)$

x corresponds to $1/T$

m Slope of the linear regression

b Axis intercept of the linear regression

$$(4) \quad B = m$$

$$(5) \quad A = e^b$$

Calculation of the extrapolated induction or stability time

In accordance with equation (2), $1/T_m$ and $1/T_e$ result in

$$(6) \quad \ln(t_m) = B \cdot \frac{1}{T_m} + \ln A$$

$$(7) \quad \ln(t_e) = B \cdot \frac{1}{T_e} + \ln A$$

$$(8) \quad \ln(t_m) - \ln(t_e) = B \cdot \frac{1}{T_m} + \ln A - B \cdot \frac{1}{T_e} - \ln A$$

$$(9) \quad B \left(\frac{1}{T_m} - \frac{1}{T_e} \right) = \ln \frac{t_m}{t_e}$$

$$(10) \quad t_e = \frac{t_m}{e^{B \left(\frac{1}{T_m} - \frac{1}{T_e} \right)}}$$

Variable symbol	Variable name	Unit	Description
T_m	Measuring temperature	°C	Temperature at which the induction or stability time is measured.
t_m	Induction or stability time at measuring temperature	h	Induction or stability time that is measured at a defined temperature T_m

Variable symbol	Variable name	Unit	Description
T_e	Target temperature	°C	Target temperature for the extrapolation
t_e	Induction or stability time at target temperature	h	Induction or stability time at target temperature T_e to be calculated

4.5.2.18.2 Extrapolation - Selection

Menu item: **Database ► Determinations ► Extrapolation... ► Extrapolating deter-**
minations

The **Determinations ► Extrapolation...** menu item opens the **Extrapolating determinations** dialog window for the selection of the determinations whose results are to be included in the extrapolation.

Selection

Selection	Selected determinations All filtered determinations
Default value	Selected determinations

Selected determinations

Includes results from all determinations in the extrapolation that are selected (highlighted) in the determination table. Any number of results can be included in the extrapolation, there is no restriction.

All filtered determinations

Includes results from all determinations from the entire determination table in the extrapolation that correspond to the set filter.

4.5.2.18.3 Extrapolation - View

Menu item: **Database ► Determinations ► Extrapolation... ► Extrapolating determinations ► Extrapolation**

After the determinations have been selected (see Chapter 4.5.2.15.1, page 188), the **Extrapolation** dialog window opens in which the selected results (which were measured at various temperatures) are extrapolated onto the required target temperature. In addition, the **temperature coefficient** for the conversion of the **induction time** into the **standard time** can be determined and stored here (see Glossary, page 447).

Graph display

The line calculated with the help of linear regression $T = \ln(t)/B - \ln(A)/B$ for Q_{10} and $1/T = \ln(t)/B - \ln(A)/B$ for Arrhenius is depicted in the **temperature vs. time** graph.

The result values are presented with the following symbols:



The following context-sensitive menu opens with a right-hand mouse click inside the graphics frame:

Show all	Shows the entire graph. This menu item is always enabled.
Zoom...	Opens the dialog for entry of a zoom range (<i>see Chapter 4.5.2.18.4, page 224</i>).
Unzoom	Undoes the last zoom action.
Copy	Copies the graph.

Table with information concerning the selected determinations. It contains the following columns:

Start time of the determination.

Identification of the sample.

Name of the method used for the determination.

Sample temperature at which the determination was carried out.

Temperature correction of the method used for the determination.

Induction time that was determined at the time of the determination (is displayed only for **Results used = Induction time**).

Stability time that was determined at the time of the determination (is displayed only for **Results used = Stability time**).

Used

Indicates whether a result is used for the calculation of the regression line or not.

The graph of the results values is synchronized with the determination table. A point can be selected in either the graph or in the table. The point is then highlighted in **blue** and the corresponding line in the table in **green**. Points that were deleted manually from the statistics disappear from the graph.

Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles**
Sets the column width.
- **Double-click on the margin between column titles**
Sets the optimal column width.
- **Drag the column title**
Moves the column to the required location.

Clicking on the table of determinations with the right mouse button causes a context-sensitive menu to appear with the following menu items:

On	Activates the Used check box for the highlighted determinations.
Off	Deactivates the Used check box for the highlighted determinations.
Invert selection	Inverts the Used setting for the highlighted determinations.

Extrapolation parameters

Parameter for the calculation of the extrapolation:

Calculation type

Selection of the exponential formula for calculating the time extrapolated from the measured values for the target temperature. The formula used for the calculation is displayed next to the input field.

Selection	Arrhenius Q10
Default value	Arrhenius

Arrhenius

If this option is selected, then the Arrhenius equation must be used to calculate the extrapolated time for the target temperature.

Q10

If this option is selected, then the Q_{10} equation must be used to calculate the extrapolated time for the target temperature.



Time

Result of the extrapolation for the specified temperature in hours and years.

Target temperature

Display of the target temperature used for the extrapolation calculation.

Functions

[Save factor]

Saves Q_{10} factor as temperature coefficient. The button is active only if **Results used Induction time** is selected in the list field.

[Save coefficient]

Saves Arrhenius factor as temperature coefficient. The button is active only if **Results used Induction time** is selected in the list field.

[Print (PDF)]

Printing the extrapolation (see Chapter 4.5.2.18.6, page 225).

4.5.2.18.4 Extrapolation - Zooming

Menu item: **Database ▶ Determinations ▶ Extrapolation... ▶ Extrapolating determinations ▶ Extrapolation ▶ Zoom... ▶ Zoom**

The context-sensitive **Zoom...** menu item opens the **Zoom** dialog window for entering the zoom range, which is always spanned over the entire area of the graphics window.

x Axis

Visible range in X direction.

from

Starting point in X direction.

Input range	10^{-1} - 10^{12} (Increment: 10^{-6})
Default value	10^{-1}

to

Endpoint in X direction.

Input range	10^{-1} - 10^{12} (Increment: 10^{-6})
Default value	Current endpoint in X direction.

Y Axis

Visible range in Y direction.

from

Starting point in Y direction.

to

Input range	-10¹² - 10¹² (Increment: 10⁻⁶)
Default value	Current endpoint in Y direction.

Menu item: **Database ► Determinations ► Extrapolation... ► Extrapolating determinations ► Extrapolation ► [Save coefficient] / [Save factor] ► Saving the coefficient/factor**

Name

Entry	1 - 40 characters
Default value	'empty'
Selection	'Temperature coefficient'

[New]

Saves Arrhenius coefficient or Q_{10} factor under a new name.

[OK]

Saves Arrhenius coefficient or Q_{10} factor under the selected name.



Arrhenius coefficients or Q_{10} factors can be saved only if they were determined with induction times.

Menu item: **Database ▶ Determinations ▶ Extrapolation... ▶ Extrapolating determinations ▶ Extrapolation ▶ Print (PDF) ▶ Printing the extrapolation (PDF)**

Selection	Portrait Landscape
Default value	Portrait



Portrait

Produces the extrapolation report in portrait format.

Landscape

Produces the extrapolation report in landscape format.

Comment

Possibility of entering comments on the extrapolation that will be produced along with it.

Entry	0 - 1000 characters
-------	---------------------

4.6 Subwindow Information

4.6.1 Information - Overview

Subwindow: **Database** ▶ **Information**

General

General information about the focused determination in the determination table is shown in the **Information** subwindow. The subwindow can be activated in the **Database** program part during the definition of the layout and thus made visible. It can be enlarged and reduced as required; it can also be maximized.

Tabs

Information about the determination is shown on the following tabs:

- *Determination*
Display of general information about the determination.
- *Method*
Display of general information about the method used.
- *Sample*
Display of general information about the sample used.
- *Configuration*
Display of general information about the instrument, sensor and temperature coefficient.
- *Messages*
Display of messages about the determination.
- *Determination comment*
Display of the comment on the determination.

4.6.2 Information - Determination

Tab: **Database** ▶ **Information** ▶ **Determination**

Display of general information about the determination.

Identification

Information about the identification of the determination.

Unambiguous and unmistakable identification for the determination.

Computer name of the server to which the client was connected when the determination was recorded.

Name of the client with which the determination was recorded.

Information about the recording of the determination.

Date and time at start of determination.

Duration of the determination from its start to its end or to termination, in h

Way in which the determination was ended:

The determination was canceled automatically due to an error.

Conductivity measurement value at the start of the determination.

Short name of the user.

Full name of the user.

Program version

Display of program version and build number of **StabNet** with which the determination was recorded.

License ID

Display of the license serial number with which the determination was recorded.

Status/Version

Information about the determination version.

Determination status:

Selection	original modified
original	
Determination data unaltered.	
modified	
Determination data modified.	

Determination version:

Version of the determination. The unaltered original determination has the version number **1**, reprocessed determinations have a version number **>1**.

Reprocessing date:

Date and time when the reprocessed determination version was saved.

Reprocessed by (short name):

Short name of the user logged in when the determination was reprocessed.

Reprocessed by (full name):

Full name of the user logged in when the determination was reprocessed.

Reprocessed with program version:

Display of version and build number of the program version with which the determination was reprocessed.

Evaluation type:

Information as to how the evaluation was accomplished.

Selection	Automatically	Manual	Tangent
	Automatically Automatic evaluation.		
		Manual Manual evaluation.	

Tangent

Evaluation by means of tangent.

Modification reason determination:

Reason for the modification of the determination.

Modification comment determination:

User comment for the modification of the determination.

Signature level 1 / Signature level 2

Information about the signatures at level 1 or level 2 in chronological order.

Signature date:

Date and time at which the determination was signed.

Signed by (short name):

Short name of the user who signed the determination.

Signed by (full name):

Full name of the user who signed the determination.

Signature reason:

Reason for signature selected by the user.

Signature comment:

User comment at the time of signing the determination.

4.6.3 Information - Method

Tab: **Database** ► **Information** ► **Method**

Display of general information about the method used.

Identification

Information about the identification of the method.

Method name:

Name of the method.

Method group:

Name of the method group to which the method belonged at the moment of the determination.

Method ID:

Unambiguous and unmistakable identification for the method.



Method comment:

Comment on the method that was defined in the **Properties - Method** dialog window.

Status/Version

Information about the method version.

Method status:

Selection	original modified (stop criteria) modified (reprocessed)
1	1 1 1
2	2 2 2
3	3 3 3
4	4 4 4
5	5 5 5
6	6 6 6
7	7 7 7
8	8 8 8
9	9 9 9
10	10 10 10
11	11 11 11
12	12 12 12
13	13 13 13
14	14 14 14
15	15 15 15
16	16 16 16
17	17 17 17
18	18 18 18
19	19 19 19
20	20 20 20
21	21 21 21
22	22 22 22
23	23 23 23
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25	25 25 25
26	26 26 26
27	27 27 27
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32	32 32 32
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36	36 36 36
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89	89 89 89
90	90 90 90
91	91 91 91
92	92 92 92
93	93 93 93
94	94 94 94
95	95 95 95
96	96 96 96
97	97 97 97
98	98 98 98
99	99 99 99
100	100 100 100

original

Determination method unaltered.

modified (stop criteria)

Stop criteria for the determination method have been changed.

modified (reprocessed)

Determination method was modified during **Reprocessing**.

Method version:

Version of the method the determination has been created with. The unaltered original method has the version number **1**, modified methods have a version number **>1**.

Method saving date:

Date and time when the modified method version was saved.

Method saved by (short name):

Short name of the user logged in when the modified method was saved.

Method saved by (full name):

Full name of the user logged in when the modified method was saved.

Modification reason method:

Reason for the modification of the method.

Modification comment method:

User comment for the modification of the method.

Signature level 1 / Signature level 2

Information about the signatures at level 1 or level 2 in chronological order.

Signature date:

Date and time at which the method was signed.

Signed by (short name):

Short name of the user who signed the method.

Signed by (full name):

Full name of the user who signed the method.

Signature reason:

Reason for signature selected by the user.

Signature comment:

User comment at the time of signing the method.

4.6.4 Information - Sample

Tab: **Database** ▶ **Information** ▶ **Sample**

Display of general information about the sample used.

Sample data

Information about the sample. The only sample data shown is that for which a value is available.

Ident:

Identification of the sample.

Number of determinations:

Specification of the number of determinations n/m (n =determination number of a multiple determination; m =nominal number of determinations of a multiple determination).

Identifications

Information regarding the sample data. This will only be shown when a value is present.

Info 1:

Display of the data entered as **Info 1** for the sample.

Info 2:

Display of the data entered as **Info 2** for the sample.

Info 3:

Display of the data entered as **Info 3** for the sample.

Live modifications

Information on the last live modification of sample data.

Modification reason sample data:

Reason for the sample data modification.

Modification comment sample data:

User comment for the modification of the sample data.

4.6.5 Information - Configuration

Tab: **Database** ▶ **Information** ▶ **Configuration**

Display of general information about the devices, sensors and temperature coefficients.

Device 'Device name'

Information about the device used (only the existing device information will be shown).

Device type:

Type of device.

Program version:

Device program version.

Device serial number:

Serial number of the device.

Measuring block:

Designation of the measuring block on which the measurement was carried out.

Measuring position:

Measurement position at which the measurement was carried out.

Sensor 'Sensor name'

Information about the conductivity sensor used.

Sensor serial number:

Serial number of the conductivity sensor.

Cell constant:

Cell constant of the conductivity sensor.

Temperature coefficient 'Name'

Information about the temperature coefficient used.

Type:

Type of the temperature coefficient.

Arrhenius coefficient:

Value of the Arrhenius coefficient

Q10 factor

Value of the Q factor

Assignment date:

Date and time of last value assignment.

Assignment method:

Method with which the value was assigned (manual or by adoption from the extrapolation).

User

The user who was logged in during value assignment or who entered the value manually.

4.6.6 Information - Messages

Tab: **Database** ▶ **Information** ▶ **Messages**

Display of messages generated during the determination run.

'Time'

Display of the time at which the message was generated in the run (date, time, UTC in the format **YYYY-MM-DD hh:mm:ss UTC.....**).

Message title:

Display of message title and number.

Message text:

Display of the message.

4.6.7 Information - Determination comment

Tab: **Database** ▶ **Information** ▶ **Determination comment**

Display of the comment on the determination.

Determination comment:

Display of the comment entered for the determination.

4.7 Results subwindow

4.7.1 Results - General

Subwindow: **Database** ▶ **Results**

The automatically calculated results and the user-defined results and the variables used for this purpose are displayed in the **Results** subwindow in the **Database** program part.

When navigating in the determination overview, this data will be updated automatically (after a certain time delay).

The **Results** subwindow can be activated in the **Database** program part during the definition of the layout and thus made visible. It can be enlarged and reduced as required; it can also be maximized.

Tabs

The results of the determination are shown on the following tabs:

- *Results*
Display of the calculated results.
- *Statistics*
Display of the statistics data for the results.
- *Monitoring*
Display of the monitoring data for the results.

4.7.2 Results - Results

Tab: **Database** ▶ **Results** ▶ **Results**

Tab: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Results** ▶ **Results**

All of the calculated results and the formulas used for this purpose are displayed on the **Results** tab.

Results

"Result"

Display of result name, result value with defined number of decimal places, and result unit.



Note

If a result value is monitored and lies within the limit value defined, then the text will be shown in **green**, if it lies outside the limits it will be shown in **red** text color.

Result definitions

"Result":

Display of the formulas used for the calculation of the user-defined results.

'Variable name':

Display of the variables that were used in the formulas for user-defined results.



Note

Variables that have not been created during the determination are not displayed and lead to invalid results.

4.7.3 Results - Statistics

Tab: Database ▶ Results ▶ Statistics

Tab: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Results** ▶ **Statistics**

All of the calculated results and the associated statistical evaluations defined in the method are displayed on the **Statistics** tab.



Note

This tab is displayed only if the **Statistical link** has been defined at either **2 positions** or **4 positions** in the **Measuring parameters** subwindow in the **Start options** section, thus meaning that the determination is a multiple determination.

Results

"Result"

Display of result name, result value with defined number of decimal places, and result unit.



Note

If a result value is monitored and lies within the limit value defined, then the text will be shown in **green**, if it lies outside the limits it will be shown in **red** text color.

n:

Display of the number of determinations performed with statistically evaluated results.

Mean value:

Display of the mean value for statistically evaluated results.

Absolute standard deviation:

Display of the absolute standard deviation for statistically evaluated results.

Relative standard deviation:

Display of the relative standard deviation for statistically evaluated results.

Minimum:

Display of the minimum value for statistically evaluated results.

Maximum:

Display of the maximum value for statistically evaluated results.

4.7.4 Results - Monitoring

Tab: **Database** ▶ **Results** ▶ **Monitoring**

Tab: **Database** ▶ **Reprocess...** ▶ **Reprocessing** ▶ **Results** ▶ **Monitoring**

All of the calculated results and the associated limit values defined in the method are displayed on the **Monitoring** tab.



Note

This tab is displayed only when results monitoring has been defined in the method.

Results

"Result"

Display of result name, result value with defined number of decimal places, and result unit.



Note

If a result value is monitored and lies within the limit value defined, then the text will be shown in **green**, if it lies outside the limits it will be shown in **red** text color.

Lower limit:

Display of the bottom limit value for the result.

Upper limit:

Display of the top limit value for the result.

Message:

Displays the message defined for when the limit values are exceeded.

Action:

Displays the action defined for when the limit values are exceeded.

4.8 Curves subwindow

4.8.1 Curve window - General

Subwindow: **Database ► Curves**

The **Curves** subwindow in the **Database** program part or in the **Reprocessing** dialog window has the following properties:

- Views of measurement curves of the determinations recorded.
- Visualization of the effects of parameter changes and manual evaluation on the induction time and stability time with reprocessing.
- Curve overlay (*see Chapter 4.5.2.16, page 197*).

The measurement curves for the focused determination in the determination table is shown in the **Curves** subwindow. When navigating in the determination overview, these curves will be updated automatically (after a certain time delay).

The **Curves** subwindow can be activated in the **Database** program part during the definition of the layout and thus made visible. It can be enlarged and reduced as required; it can also be maximized.

The measurement curves can only be viewed in the database, but not edited. Reprocessing must be used to accomplish this (*see Chapter 4.5.2.17, page 202*).

4.8.2 Curve window - Display

Subwindow: **Database ► Curves**

Header

The designation **Curves - 'Ident'** and an element for maximizing/minimizing the window appear in the title bar of the subwindow. **'Ident'** corresponds for this purpose to the respective sample data parameter from the displayed determination.

- If the starting or end value of the axis labeling $>10^6$ and if the delta of both values is >1000 , then an exponential display is used.

- Decimal places are displayed only if the displayed value permits them.

- If the starting and end values are <0.01 , then exponential display is used.

- The tick marks are calculated on the basis of the displayed section and a check is made as to which tick has the most decimal places. All of the tick marks are then displayed with this number of decimal places.

Zooming

Zooming with the mouse

Curves can be zoomed as often as required by spanning a section of the curve display with the left-hand mouse key pressed down. The smallest range that can be zoomed is 10^{-6} h or 10^{-6} μ S/cm.

Zooming with the dialog

The context-sensitive **Zoom...** menu item opens the **Zoom** dialog window for entering the zoom range. It is always spanned over the whole size of the curve window.

The settings are temporary. They are not saved in the properties of the curve display.

5 Method

5.1 Method - General

5.1.1 Method - Definition

Program part: **Method**

Definition

In **StabNet** a **method** is an instruction for processing a sample, which can be created in the **Method** program part and started in the **Work-place** program part.

Management

Methods are organized in **Method groups** and are always automatically assigned a new version, i.e. each time a method is stored a new **version** is created. Methods can also be **signed at two levels** and be locked against further modifications. Methods are stored in the **configuration database** and globally accessible for all clients.

5.1.2 Method - User interface

Program part: **Method**

Method symbol



Clicking on the method symbol in the vertical bar on the left opens the program part **Method** while at the same time the method symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of methods currently opened (*see Chapter 5.2.3, page 248*).

Elements

The user interface of the **Method** program part comprises the following elements:

- Method-specific menu bar.
- Method-specific toolbar.
- Main window, in which one method can be opened and shown.

5.1.4 Method - Toolbar

Program part: **Method**

	Create a new method (<i>see Chapter 5.2.1, page 246</i>).
	Open an existing method (<i>see Chapter 5.2.2, page 246</i>).
	Save the selected method (<i>see Chapter 5.2.6, page 249</i>).
	Close the selected method (<i>see Chapter 5.2.9, page 253</i>).
	Open the method manager (<i>see Chapter 5.3.1, page 253</i>).
	Open the method groups manager (<i>see Chapter 5.4.1, page 264</i>).
	PDF file output of the method report (<i>see Chapter 5.2.8, page 252</i>).
	Check the selected method for plausibility (<i>see Chapter 5.2.5, page 249</i>).
	Log out user (<i>see Chapter 2.2.3, page 12</i>).
	Open StabNet Help.

5.1.5 Method - Functions

Program part: **Method**

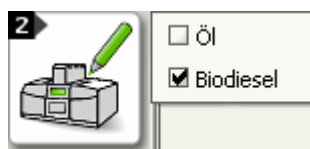
The following functions can be carried out in the **Method** program part:

Method editor

- *Creating a new method*
- *Opening a method*
- *Selecting a method*
- *Editing a method*
- *Checking a method*
- *Printing method reports (PDF)*
- *Saving a method*
- *Closing a method*

Managing methods

- *Managing methods*
- *Renaming a method*
- *Copying a method*
- *Moving a method*
- *Deleting a method*



A menu with the currently opened methods is displayed by clicking with either the left or right mouse button on the method symbol. The method displayed in the main window is marked with a checkmark. Clicking on the desired method displays it in the place of the previously selected one.

5.2.4 Editing a method

Program part: **Method**

The method is edited in the **Measuring parameters**, **Evaluation** and **Properties** subwindows.

Methods can only be edited if they are not signed at **Level 2**.

5.2.5 Checking a method

Menu item: **Method ► File ► Method check**

With the  symbol or the **File ► Method check** menu item, a method check for the method in focus is triggered. The following points are checked:

- **Formulas**
Are the variables used in formulas available?
- **Plausibility**
Are the parameters defined in the method plausible?
- **Templates**
Are the e-mail templates, export templates and report templates used in the method also available in the configuration?
- **Database**
Is a database named in the method and is it available?

A respective error message is displayed for each error found. The check has to be started again afterwards. When the method check has been completed successfully, it is confirmed with a message.

5.2.6 Saving a method

Dialog window : **Method ► File ► Save / Save As... ► Save method**

Using the  symbol or the **File ► Save** menu item, an existing focused method is saved again under its name without the **Save method** window being opened.

When saving a **newly** created method with the **File ► Save** menu item or when saving an existing method with the **File ► Save As...** menu item, the **Save method** window is opened, where the method group can be selected and a method name can be entered or selected.



Method group

Method group

Selection of the method group where the method is to be stored (*see Chapter 5.4, page 264*).

Selection	'Method groups' Main group
Default value	Main group

Method table

The method table contains information about all methods of the selected method group. The table cannot be edited. With a click on the column title (columns **Name**, **Saved**, **User**, **Full name**, **Version**, **Signed**, **Method comment**) the table can be sorted according to the selected column in ascending or descending order.

Name

Name of the method.

Saved

Date and time when the method was saved.

User

Short name of the user who saved the method.

Full name

Full name of the user who saved the method.

Version

Version number of the method.

Signed

Display indicating whether and at which level the method has been signed.

Selection	no Level 1 Level 2
-----------	------------------------

no
The method has not been signed yet. It can be opened for editing and can be deleted.

Level 1
The method has been signed electronically at level 1. It can be opened for editing and can be deleted. If the method is modified and saved again, a new version is created and all the signatures will be deleted.



Menu item: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Send to...**



Menu item: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Export...**



5.3.8 Importing a method

Menu item: **Method** ▶ **File** ▶ **Method manager...** ▶ **Method manager** ▶ **[Edit]** ▶ **Import...**

The **Select files to import** dialog window opens with the menu item **[Edit] ► Import...**. Here you must select the methods to be imported and the method group into which the methods are to be imported. These methods are imported into the opened method table.

5.3.9 Renaming an imported method

Menu item: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Import...**

Methods with the same name as methods already imported can only be imported under a new name. The window **Import method** opens for renaming the method.

Rename imported method 'Method name' to

Entry of the new method name.

Entry	50 characters
-------	---------------



Note

The method name must be unique in the entire client/server system. Locked methods cannot be renamed. Renaming a method is not regarded as a modification, i.e. the method version does not change.

5.3.10 Signing methods

5.3.10.1 Rules for electronic signatures

Program parts: **Method / Database**

In StabNet, methods and determination can be **electronically signed** at two levels. The following rules apply for this:

- **Signature levels**
Methods and determinations can be signed at two levels (Signature Level 1 and Signature Level 2) by entering the user name and password.
- **Multiple signing**
Methods and determinations can be signed several times at each level. All signatures are saved and documented in the Audit Trail.
- **Signing at Level 1**
If Level 2 has been signed then no more signatures are possible at Level 1.

- ### 5.3.10.2 Signature Level 1

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Signature 1... ▶ Signature Level 1**



Methods or determinations which have been signed at level 1 can be modified and deleted. If the modified method or determination is saved as a new version, then all existing signatures will be deleted automatically, i.e. the method or determination must be signed again.

Display of information for signing and deleting signatures. The following messages are possible:

Selection	Signature possible (signature 2 exists)	Signature 1 not possible Signature not possible (accessed by other client)
0		
1		
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99		



Info

Selection	Signature possible Signature 2 not possible (signature 1 missing) Signature not possible (accessed by other client)
-----------	--

The selected method or determination can be signed.

The selected method or determination cannot be signed at level 2 as it has not yet been signed at level 1.

The selected method or determination cannot be signed as it is already marked to be signed on a different client.

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Entry of the password.

Entry	24 characters
-------	---------------

Selection from the **Default reasons** defined in the **Security settings** dialog window for the **Signature level 2** category.

Selection	'Selection from the default reasons'
-----------	--------------------------------------

Entry of a comment on the signature.

Entry	1000 characters
-------	-----------------

Sign the method or determination. The window remains open.



Note

Methods or determinations can only be signed at level 2 if the user belongs to a user group with the corresponding permission.

5.3.10.4 Displaying method signatures

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Show signatures... ▶ Signatures - 'Method name' method**

Using the **[Sign] ▶ Show signatures...** menu item opens the **Signatures - 'Method name' method** window with a table displaying information for all of the signatures for the selected method.

Signature

Shows at which level the method has been signed (**Level 1** or **Level 2**).

Signature date

Date and time at which the method was signed.

User

Short name of the user who has signed the method.

Full name

Full name of the user who has signed the method.

Reason

Reason for signature.

Signature comment

Comment on the signature.

5.3.10.5 Deleting signatures level 2

Dialog window: **Database ▶ Determinations ▶ Sign ▶ Delete signatures
2... ▶ Delete Signatures Level 2**

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Sign] ▶ Delete signatures 2... ▶ Delete Signatures Level 2**

All signatures on level 2 for the selected method or determination can be deleted in the **Delete Signatures Level 2** window.

User

Entry of the user name (short name).

Entry	24 characters
-------	---------------

Entry of the password.

Entry	24 characters
-------	---------------

Selection from the **Default reasons** defined in the **Security settings** dialog window for the **Signature level 2** category.

Selection	'Selection from the default reasons'
-----------	--------------------------------------

Entry of a comment on the signature.

Entry

1000 characters

Delete signatures 2.



Note

Signatures 2 can only be deleted if the user belongs to a user group with the corresponding permission.

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [History] ▶ Method history**

Using the **[History]** button opens the **Method history** dialog window with a table display of all of the **versions** of the selected method.

Name of the method.

Version number of the method.

Unique method identification.

Date and time when the method was saved.

Short name of the user who saved the method.

Full name

Full name of the user who saved the method.

Modification reason

Reason entered when saving the modified method.

Modification comment

Comment entered when saving the modified method.

[Show method]

Open the **Method 'Method name' - Version #** dialog window, in which the method for the selected method version is displayed.

[Make current]

Make the selected method version to the current method version. This creates a new method whose version number is increased by **+1** compared with the last version to have been saved.

5.4 Method groups

5.4.1 Managing method groups

Dialog window: **Method ▶ File ▶ Method groups... ▶ Method groups**

Using the  symbol or the **File ► Method groups...** menu item, the **Method groups** dialog window is opened, where a user with corresponding access rights can manage method groups. The information on the existing method groups is shown in a table. The table cannot be edited and is not automatically updated. By clicking on the column title the table can be sorted according to the selected column in either ascending or descending order.

Name

Name of the method group.

Number

Shows the number of methods in the method group.

Saved

Date and time when the method group was saved.

User

Short name of the user who saved the method group.

Full name

Full name of the user who saved the method group.

Comment on the method group.

Opens the **Properties - Method group - 'New Group'** dialog window for defining a new method group (see *Chapter 5.4.2, page 265*).

Opens the **Properties - Method group 'Name'** dialog window, in which the method group selected in the table can be edited (*see Chapter 5.4.2, page 265*).

Delete the method group selected in the table.

Using the **[Properties]** button or double-clicking a line in the table opens the **Properties - 'Name' method group** properties window for the selected method group.

The parameters for method groups are configured on the following tabs:

- *General*
General parameters.
- *Access permissions*
Access rights for method groups and their methods.

Tab: **Method** ▶ **File** ▶ **Method groups...** ▶ **[Properties]** ▶ **Properties - 'Name'**
method group ▶ **General**

Name of the method group. The name has to be entered when creating a new method group.

Entry	50 characters
-------	---------------

Shows the number of methods in the method group.

Freely definable remarks about the method group.

Entry	1,000 characters
-------	------------------

5.4.2.3 Method groups - Access rights

Tab: Method ▶ File ▶ Method groups... ▶ [Properties] ▶ Properties - 'Name'
method group ▶ Access rights

Access rights for method groups and their methods can be assigned per user group.



Note

The **Administrators** user group always has both access rights, i.e. they cannot be disabled.

User group

Names of the user groups.

Execute

on | off (Default value: **on**)

Permission to start methods from a method group. Methods in this group can only be opened and started but cannot be edited or deleted.

Edit

on | off (Default value: **on**)

Permission to edit methods from a method group. Methods in this group can be opened, started, edited and deleted. New methods can be added as well.

5.5 Measuring parameters subwindow

5.5.1 Measuring parameters

Subwindows **Method ▶ Measuring parameters**

The most important parameters for carrying out the measurement are set in this subwindow. The settings affect the progression of the measurement curve recorded.

Sample temperature

Setpoint temperature in the sample.

Input range	50 - 220 °C (Increment: 1)
Default value	120 (oil), 110 (biodiesel), 200 (PVC) °C

Temperature correction

Specification of how many °C the heating block temperature has to be increased by so that the sample reaches the setpoint temperature. This value is determined by measuring the deviation between the current temperature in the sample and the heating block temperature using a calibrated, external temperature sensor. If a temperature sensor is not available, approximations can be entered from the table for temperature correction values (see Chapter 5.5.2, page 270).

Input range	-9.9 - 9.9 °C (Increment: 0.1)
Default value	1.6 (oil), 0.9 (biodiesel), 0.8 (PVC) °C
Selection	auto

auto

With **auto**, the **Temperature correction** determined previously for a temperature correction determination (see Chapter 3.4, page 80) and saved on the instrument on the **Temperature correction** tab (see Chapter 7.1.1.3, page 376) is used automatically for the determination. The requirement for this is that, for the determination, the same instrument, the same block, the same gas flow and the same temperature have been selected at which the temperature correction determination was carried out.



Note

Please note that the maximum permissible sum of **Sample temperature** and **Temperature correction** for the 893 Professional Biodiesel Rancimat is **159.9 °C**. Methods with a higher value cannot be loaded for this instrument.

Gas flow

Gas flow through the sample. The gas flow can only be set for both blocks jointly. The value of the method loaded for block A is always decisive.

Input range	1.0 - 25.0 L/h (Increment: 0.1)
Default value	20.0 (air; oil), 10.0 (air; biodiesel), 7.0 (nitrogen; PVC) L/h

Start options

Statistical link

Mode for starting and stopping determinations at different measuring positions. The determinations of a multiple determination are linked statistically with one another.

Conductivity

on | off (Default value: **off**)

Conductivity limit value. The determination is ended automatically when this value is reached.

Input range	1 - 400 $\mu\text{S/cm}$ (Increment: 1)
Default value	400 (oil, PVC), 200 (biodiesel) $\mu\text{S/cm}$

Endpoint(s)

on | off (Default value: **on**)

Automatic stop of the determination if all of the end points in the method have been reached (induction time and/or stability time).

Delimiting stop criteria

Editable only if more than one stop criterion has been enabled, otherwise inactive.

Oil, PVC

Selection	Stop once one criterion has been fulfilled Stop once all the criteria have been fulfilled
Default value	Stop once one criterion has been fulfilled

Biodiesel

Selection	Stop once one criterion has been fulfilled Stop once all the criteria have been fulfilled
Default value	Stop once all the criteria have been fulfilled

Stop once one criterion has been fulfilled

If this option is selected, the determination is stopped as soon as one stop criterion is met.

Stop once all the criteria have been fulfilled

If this option is selected, then the determination is ended as soon as all selected stop criteria have been met.

Sensors

Conductivity sensor assignment

on | off (Default value: **off**)

If this check box is activated, a conductivity sensor has to be assigned to the respective measuring position before each time a determination is started. A conductivity sensor can only be used once in the process.

Selection	on off
-----------	-----------------



on

If the conductivity assignment is enabled, the cell constant for the assigned sensor is saved in the instrument from the configuration for the measuring position being used when starting a determination. Thus, this cell constant is the basis for calculating the conductivity until the start of the next determination. The conductivity sensor being used is reserved during the determination, i.e. it cannot be used for another determination or cell constant determination. Manual input of the cell constant is not possible during the determination.

off

If the conductivity assignment is disabled, a cell constant of 1.1/cm is saved in the instrument for the measuring position being used when starting a determination. This value is the basis for calculating the conductivity until the start of the next determination.

5.5.2 Table of temperature correction values

If a temperature sensor is not available for the temperature correction determination, the following approximations can be entered:

Table 2 Temperature correction values for 892 Professional Rancimat and 893 Professional Biodiesel Rancimat. Condition: 6 g silicone oil, gas = air

Setpoint temperature (°C)	Temperature correction value (°C) for gas flow = 10 L/h	Temperature correction value (°C) for gas flow = 20 L/h
80	0.7	1.1
90	0.8	1.3
100	0.8	1.4
110	0.9	1.5
120	1.0	1.6
130	1.1	1.7
140	1.1	1.8
150	1.2	1.9
160	1.2	2.0

Table 3 Temperature correction values for 895 PVC Thermomat. Condition: 5 g silicone oil, gas = nitrogen

Setpoint temperature (°C)	Temperature correction value (°C) for gas flow = 7 L/h
160 - 200	0.8

5.6 Evaluation subwindow

5.6.1 Evaluation - General

Subwindow: **Method ▶ Evaluation**

The automatic evaluations for the standard results and calculations for user-defined results as well as the output and export of results are defined in this subwindow. Results can also be monitored. The left side contains the symbols for the areas whose tabs are displayed on the right portion of the subwindow. The following areas are displayed:



Parameters (see Chapter 5.6.2, page 271)



Results (see Chapter 5.6.3, page 274)



Documentation (see Chapter 5.6.4, page 281)

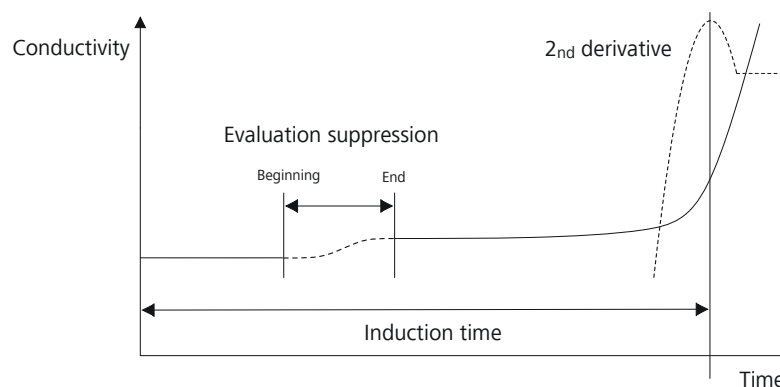
5.6.2 Evaluation - Parameters

5.6.2.1 Parameter - Induction time

Tab: **Method ▶ Evaluation ▶ Parameters ▶ Induction time**

The induction time is the **time to the break point** of the *conductivity* vs. *time* curve recorded using the instrument. The induction time is a characteristic for the oxidation stability of the sample being examined.

For the automatic determination of the induction time, the 2nd derivative of the measured curve is used, which exhibits a maximum at the break point. To enable detection of a break point, certain criteria must be fulfilled with regard to the height and width of the peak in the 2nd derivative. The break point can also be determined manually as the intersection point of the two tangents at the extended straight branches of the curve.



With certain samples, it may occur that the conductivity slightly rises in steps long before the actual induction time (e.g. through side reactions or with volatile compounds). To prevent this rise from being evaluated as an endpoint, the user can suppress the evaluation for the desired range.

Evaluate induction time

If this check box is activated, the induction time is determined automatically. The induction time can be used as variable **IND** in formula calculations.

Oil, biodiesel

Selection	on off
Default value	on

PVC

Selection	on off
Default value	off

Evaluation suppression Start

Time from the start of the determination to the start of the evaluation suppression.

Input range	0.0 - 99,999.9 h
Default value	0.0 h

Evaluation suppression End

Time from the start of the determination to the end of the evaluation suppression.

Input range	0.0 - 99,999.9 h
Default value	0.0 h

Evaluation sensitivity

This value defines the minimum value which the maximum of the curve of the 2nd derivative has to reach in order to be accepted as induction time.

Input range	0.1 - 9,999.9
Default value	1.0

If this check box is activated, the standard time is calculated automatically (see Glossary, page 447). The standard time can be used as variable **STD** in formula calculations.

Selection	on off
Default value	off

Target temperature for the calculation of the standard time.

Input range	-100.0 - 300.0 °C
Default value	97.8 °C

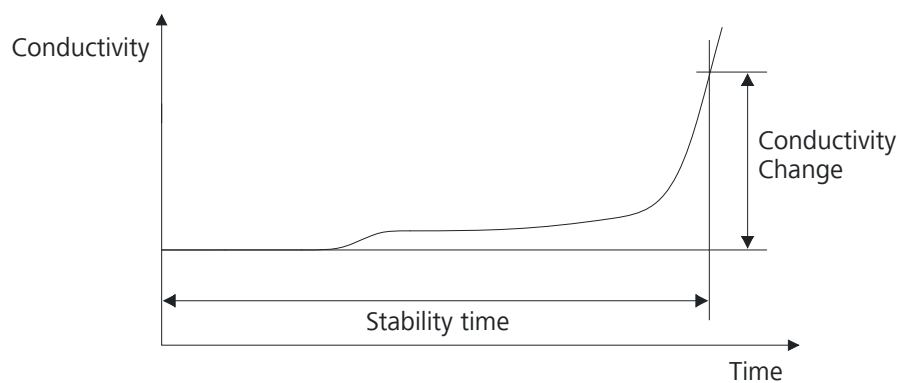
The standard time is calculated using the temperature coefficient created in the **Configuration** program part and the configured target temperature (see Chapter 6.7, page 364).

Selection	'Temperature coefficient' 'empty'
Default value	'empty'

The standard value is 'empty', if a temperature coefficient is not available in the configuration. Otherwise, the first temperature coefficient from the alphabetically ordered list is always entered.

Tab: **Method** ▶ **Evaluation** ▶ **Parameters** ▶ **Stability time**

■■■■■■■ 273



Evaluate stability time

If this check box is activated, the stability time is determined automatically. The stability time can be used as variable **STAB** in formula calculations.

Oil, biodiesel

Selection	on off
Default value	off

PVC

Selection	on off
Default value	on

Conductivity change

Conductivity change for the determination of the stability time.

Input range	1 - 400 $\mu\text{S}/\text{cm}$ (Increment: 1)
Default value	50 $\mu\text{S}/\text{cm}$

5.6.3 Evaluation - Results

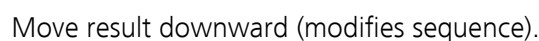
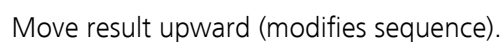
5.6.3.1 Results - User-defined results

Tab: **Method** ▶ **Evaluation** ▶ **Results** ▶ **User-defined results**

Additional results defined by the user that are automatically included in the calculation at the end of the determination are defined on this tab. These results are made available as variables for calculations within the method just like the standard results.

Table of user-defined results

The non-editable table shows a list of user-defined results. Double-clicking on a line opens the **Define result** dialog window for defining the user-defined results (*see Chapter 5.6.3.2, page 275*). The most important properties for the result selected in the table are shown on the right portion of the tab.



Opens the following menu items:

Formula

Displays the formula for the selected result.

Description

Displays the description for the selected result.

5.6.3.2 Defining result

Dialog window: **Method ▶ Evaluation ▶ Results ▶ User-defined results ▶ [Edit] ▶ New.../Properties... ▶ Define result**

Result name

Name of the user-defined result. The name has to be unique within the method.

Properties

Formula

Calculation formula, which can either be edited directly or can be created using the formula editor after pressing  (see Chapter 2.4, page 19). The formula defines the type (**Number**, **Text**, **Date/Time**) of the result.

Unit

Unit of the calculated result for the output (text only).

Result name

Name of the result that is to be evaluated while being monitored. Using the  symbol opens the **Select result** dialog window, where the desired result can be selected (*see Chapter 5.6.3.5, page 278*).

Statistics

Mean value

Is marked as as **mean value** in the **Statistical function** column.

on | off (Default value: **off**)

Is marked as as **ASD** in the **Statistical function** column.

on | off (Default value: **on**)

Is marked as as **RSD** in the **Statistical function** column.

on | off (Default value: **off**)

Is marked as as **Min** in the **Statistical function** column.

on | off (Default value: **off**)

Is marked as as **Max** in the **Statistical function** column.

5.6.3.5 Selecting a result

Dialog window: **Method** ▶ **Evaluation** ▶ **Results** ▶ **Statistics/Monitoring** ▶ **[Edit]** ▶ **New.../Properties...** ▶ **Select result**

Variables

Select the desired result variables (see *Chapter 2.4.3.3, page 23*) from all of the automatically calculated results and from the user-defined results.

Description

Description of the result variables selected under **Variables**.

5.6.3.6 Results - Monitoring

Tab: **Method** ▶ **Evaluation** ▶ **Results** ▶ **Monitoring**

This tab defines which results are to be monitored. The following rules apply for this:

- Each result can only be monitored **once**.
- Only results of type **number** can be monitored.
- The results are always monitored **after** evaluation. The determination does not have to be finished. As soon as the results of a determination are recalculated in a run, the newly calculated results are monitored.

Table of monitored results

The non-editable table shows a list of the results calculated in the method (result and result name). Double-clicking on a line opens the **Define monitoring** dialog window for defining monitoring (*see Chapter 5.6.3.7, page 279*). The most important properties for the result selected in the table are shown on the right portion of the tab.

[Edit]

Opens the following menu items:

New...	Opens the Define monitoring dialog window for defining monitoring (<i>see Chapter 5.6.3.7, page 279</i>). The new result to be monitored is added to the end of the table (the same action as double-clicking on the last line). At most, the 3 standard results (induction time, stability time and standard time) and 25 user-defined results can be monitored.
Properties...	Open the Define monitoring dialog window for defining monitoring (<i>see Chapter 5.6.3.7, page 279</i>) and edit result monitoring (same action as double-clicking a line).
Delete	Deletes the selected result.

Lower limit

Upper limit

Message

Action

5.6.3.7 Defining monitoring

Result name

Selection	'Result variable'
-----------	-------------------

Lower limit

Input range	-1.00 E+99 - 1.00 E+99 'Unit of the result'
Default value	0.00 'Unit of the result'

Upper limit

Input range	-1.00 E+99 - 1.00 E+99 'Unit of the result'
Default value	0.00 'Unit of the result'



 **Note**

The act of going beyond the limits is available for formula calculations as a variable, **'Result identification'.OVF**, for the monitored result (number: **0** = result within limit values, **1** = result outside limit values).

5.6.4.1 Documentation - Report

Tab: **Method** ▶ **Evaluation** ▶ **Documentation** ▶ **Report**

This tab shows which report template is used to generate reports for the determinations in this method and where these reports are output. The report is output as soon as the determination is complete.

Report table

The non-editable table shows a list of reports that are output at the end of the determination. The table can have a maximum of 10 lines. Double-clicking a line opens the **Define report** dialog window for defining the report (*see Chapter 5.6.4.2, page 281*).

[Edit]

Opens the following menu items:

New...	Opens the Define report dialog window for defining the report (<i>see Chapter 5.6.4.2, page 281</i>). Adds a new line at the end of the table (same action as double-clicking the last line [*]).
Properties...	Open the Define report dialog window for defining the report (<i>see Chapter 5.6.4.2, page 281</i>) and edit a line (same action as double-clicking a line).
Copy	Copies the selected lines to the clipboard.
Insert	Insert all lines from the clipboard above the selected line in the report table.
Cut	Copies the selected lines to the clipboard and deletes them.
Delete	Deletes the selected lines.

5.6.4.2 Defining reports

Dialog window: **Method** ▶ **Evaluation** ▶ **Documentation** ▶ **Report** ▶ **[Edit]** ▶ **New...**
/ **Properties...** ▶ **Define report**

This dialog window defines which report template is used to generate reports for the determination in this method and where these reports are output. The report is output as soon as the determination is complete.

Report template

Report template

Selection of the report template with which the report is to be generated.

Selection	'Template name'
-----------	-----------------

Report output

Printer

on | off (Default value: **off**)

If this check box is activated, the report is printed on the selected printer.

Selection	Default printer Printer name
Default value	Default printer

Default printer

The report will be printed on the default Windows printer defined for the client.

Printer name

The report will be printed on the default Windows printer with the specified name defined for the client.

PDF file

on | off (Default value: **off**)

If this check box is activated, the report is output as a PDF file. The desired directory can be selected and a name for the PDF file can be entered by means of the  symbol. When output, the date and time are automatically attached to this name in a **YYYY-MM-DD_hh-mm-ss** format.

Send e-mail

on | off (Default value: **off**)

If this check box is activated, then the report is produced not only as a PDF file but also as an attachment to the address defined under **[E-mail...]**.

[E-mail...]

The **Send e-mail** dialog window opens with **[E-mail...]** (see Chapter 2.6.1, page 62).

5.6.4.3 Documentation - Database

Tab: **Method** ▶ **Evaluation** ▶ **Documentation** ▶ **Database**

This tab defines which databases the determination data is stored in. At the same time, whether and to which applications the determination data is to be exported automatically can be defined.

Database

The non-editable table shows a list of databases where the determinations are saved. Double-clicking on a line opens the **Select database** (see *Chapter 5.6.4.4, page 284*) dialog window.

[Edit]

Opens the following menu items:

New...	Opens the Select database dialog window for defining the database (<i>see Chapter 5.6.4.4, page 284</i>). Adds a new line to the end of the table (same action as double-clicking the last line).
Properties...	Open the Select database dialog window for defining the database (<i>see Chapter 5.6.4.4, page 284</i>) and edit a line (same action as double-clicking a line).
Delete	Deletes the selected lines.

Automatic export

The non-editable table shows a list of the automatic export. Double-clicking a line opens the dialog window for selecting the export settings (see *Chapter 5.6.4.5, page 284*).

[Edit]

Opens the following menu items:

New...	Opens the Select export template dialog window for defining the database (see Chapter 5.6.4.5, page 284). Adds a new line to the end of the table (same action as double-clicking the last line).
Properties...	Open the Select export template dialog window for defining the database (see Chapter 5.6.4.5, page 284) and edit a line (same action as double-clicking a line).
Delete	Deletes the selected lines.

5.6.4.4 Selecting a database

Dialog window: **Method** ▶ **Evaluation** ▶ **Documentation** ▶ **Database** ▶ **Select database** ▶ **[Edit]** ▶ **New... / Properties...** ▶ **Select database**

Database

Selecting the database to which the data is to be transferred.

Selection	'Database name'
-----------	-----------------

5.6.4.5 Selecting an export template

Dialog window: **Method** ▶ **Evaluation** ▶ **Documentation** ▶ **Database** ▶ **Automatic export** ▶ **[Edit]** ▶ **New... / Properties...** ▶ **Select export template**

Export template

Selection of the export template for the data export (see *Chapter 4.4.3, page 155*).

Selection	'Template name'
-----------	-----------------

5.7 Properties subwindow

5.7.1 Properties - General

Subwindow: **Method** ▶ **Properties**

Sample data, graphics properties from the graphics shown in the **Workplace** program part and comments are defined in this subwindow. The left side contains the symbols for the areas whose tabs are displayed on the right portion of the subwindow. The following areas are displayed:



Sample data (see Chapter 5.7.2, page 284)



Graphics (see Chapter 5.7.3, page 288)



Comments (see Chapter 5.7.4, page 294)

5.7.2 Properties - Sample data

5.7.2.1 Sample data - Table

Subwindow section: **Method** ▶ **Properties** ▶ **Sample data**

The **Sample data** area shows the sample data used and monitored in the method and the data's fixed values in table form. The table contains the following columns:

Name	Designation of the sample data variable (cannot be changed).
Type	Sample data variable type.
Fixed value	Fixed assigned value for the sample data variable.
Used	Shows whether the sample data variable is used in the method or not.
Monitoring	Shows whether the sample data variable is monitored in the method or not.
Comment	Optional comment on the sample data variables.
[Edit]	Open the Configure sample data input - 'Name' dialog window for defining sample data input (<i>see Chapter 5.7.2.2, page 285</i>) and edit a line (same action as double-clicking a line).

5.7.2.2 Configuring sample data input

Dialog window: **Method ▶ Properties ▶ Sample data ▶ [Edit] ▶ Configuring sample data input - 'Name'**

Used

on | off (Default value: **off**)

If this check box is activated, the additional **Info #** information is used in the method and displayed on the workplace.



Note

The **Ident** sample data variable is always used in a method; this means its use cannot be disabled.

Name	Designation of the sample data variable. The name cannot be changed.
-------------	--

5.7.3 Properties - Graphics

5.7.3.1 Graphics - Axes

Tab: **Method** ▶ **Properties** ▶ **Graphics** ▶ **Axes**

x Axis



Note

The settings for the x axis are used for displaying the live curve in the **Workplace** program part and for displaying the curve for the saved determination in the **Database** program part.

Axis label

Freely definable axis label.

Selection	auto User-defined text
Default value	auto
auto The unit is used as a label with auto .	
User-defined text User-defined text can be entered.	

Default view

Defining the standard display for the x axis.

Selection	Show all Range
Default value	Show all
Show all The entire x axis from 0 - recording time is displayed.	
Range Only the specified x axis area between from and to is displayed.	

from

Initial value for scaling the x axis.

Input range	0 - 9,999
Default value	0

to

End value for scaling the x axis.

Input range	0 - 9,999
Default value	24

Evaluation sensitivity

on | off (Default value: **off**)



Note

These settings are used for displaying the curve for the saved determination in the **Database** program part.

Selection of the color to be used for graphically displaying evaluation sensitivity.

Selection	light blue 12 additional colors
Default value	light blue

Line thickness

Input range	1 - 10 pixels
Default value	1 pixels

2nd derivative



Note

These settings are used for displaying the curve for the saved determination in the **Database** program part.

If the option for displaying the induction time is enabled, then the curve for the 2nd derivative is displayed in the selected color automatically. If the option for displaying the induction time is disabled, then the curve for the 2nd derivative is not displayed.

Selection	dark blue 12 additional colors
Default value	dark blue

Line thickness

Input range	1 - 10 pixels
Default value	1 pixels

Tangents



Note

These settings are used for displaying the curve for the saved determination in the **Database** program part.

Selection	dark gray 12 additional colors
Default value	dark gray

Input range	1 - 10 pixels
Default value	1 pixels

Background



Clicking on the  symbol opens the **Select color** dialog window (see *Chapter 2.5.4, page 60*).

Note

Selection of the color to be used for displaying the axes.

Selection	black 12 additional colors
Default value	black

Input range	1 - 10 pixels
Default value	1 pixels

Grid

on | off (Default value: **off**)



Note

The settings for the grid are used for displaying the live curve in the **Workplace** program part and for displaying the curve for the saved determination in the **Database** program part.

If this check box is activated then a grid, whose color can be selected, is shown against the background.

Selection	light gray 12 additional colors
Default value	light gray

5.7.4 Properties - Comments

5.7.4.1 Comments - Application note

Tab: **Method** ▶ **Properties** - **Comments** ▶ **Application note**

Start the text editor to enter or change the application note with  or by double-clicking into the text field (see Chapter 2.5.2, page 59).

The application note for the method is opened in the **Workplace** program part using the  symbol on the block-specific toolbar (*see Chapter 3.3, page 69*).

5.7.4.2 Comments - Method comment

Tab: **Method** ▶ **Properties** - **Comments** ▶ **Method comment**

A comment displayed in the method table (see Chapter 5.2.2, page 246) is entered for the method on this tab.

6 Configuration

6.1 Configuration - General

6.1.1 Configuration - Definition

Program part: **Configuration**

Definition

The term **Configuration** is used in **StabNet** to refer to all comprehensive settings for devices and sensors with regards to methods. Included in the configuration are also security settings, user administration, Audit Trail, and templates (export templates, control chart templates, E-mail templates).

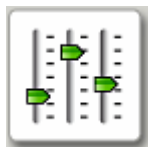
Organization

All configuration data is saved in the **Configuration database**. In the case of local server systems (**StabNet full**), these are to be found in the Programs directory of the computer on which the program was installed. In the case of client/server systems (**StabNet multi**), the configuration database is saved centrally on the server and contains all of the configuration data of all computers (Clients) which are connected to this server.

6.1.2 Configuration - User interface

Program part: **Configuration**

Configuration symbol



Clicking on the configuration symbol in the vertical bar at the left opens the **Configuration** program part while, at the same time, the configuration symbol is shown in color.

Elements

The user interface of the **Configuration** program part comprises the following elements:

- Configuration-specific menu bar.
- Configuration-specific toolbar.
- Main window in which up to 3 subwindows can be displayed.

6.1.3 Configuration - Menu bar

6.1.3.1 Configuration - Main menus

Program part: **Configuration**

The menu bar in the **Configuration** program part contains the following main items:

- *Configuration - File menu*
Export, import, backup, restore configuration data.
- *Configuration - View menu*
Change layout, load view, save view, quick access to subwindows.
- *Configuration - Tools menu*
User administration, security settings, program administration, Audit Trail, templates, options.
- *Help menu*
Open program help, display program information.

6.1.3.2 Configuration - File menu

Program part: **Configuration**

Export...	Export configuration data (<i>see Chapter 6.3.1.1, page 327</i>).
Import...	Import configuration data (<i>see Chapter 6.3.1.2, page 328</i>).
Backup ►	
Automatically	Backup configuration data automatically (<i>see Chapter 6.3.2.1, page 329</i>).
Manually	Backup configuration data manually (<i>see Chapter 6.3.2.2, page 330</i>).
Print (PDF)... ►	
PDF User administration	Output user administration data as PDF file (<i>see Chapter 6.2.1.1, page 303</i>).
PDF Security settings	Output security settings as PDF file (<i>see Chapter 6.2.2.1, page 312</i>).
 Logout...	Log out user (<i>see Chapter 2.2.3, page 12</i>)
Exit	Exit the program.

6.1.3.3 Configuration - View menu

Program part: **Configuration**

 **Change layout...** Change layout of loaded configuration view (see Chapter 4.1.7.2, page 101).

 Load view...	Load a saved configuration view (<i>see Chapter 4.1.7.3, page 102</i>).
 Save view...	Save current configuration view (<i>see Chapter 4.1.7.4, page 102</i>).
Quick access	Open a subwindow not contained in the current configuration view.
 Toolbar	Switch the toolbar display on/off.

6.1.3.4 Configuration - Tools menu

Program part: **Configuration**

 User administration...	Manage users and groups of users with access permissions, signature permissions and options (<i>see Chapter 6.2.1.1, page 303</i>).
 Security settings...	Options for login, password protection, Audit Trail and electronic signature (<i>see Chapter 6.2.2.1, page 312</i>).
Program administration...	General settings for local server and client/server settings (<i>see Chapter 6.2.3.1, page 321</i>).
 Audit Trail...	Open the Audit Trail (<i>see Chapter 6.4, page 336</i>).
Templates ►	
E-mail templates...	Create templates for sending e-mails (<i>see Chapter 6.3.3.1, page 332</i>).
Options...	Set program options (<i>see Chapter 6.3.4, page 334</i>).

6.1.3.5 Help menu

Program part: **Workplace / Database / Method / Configuration**

 StabNet Help	Open StabNet Help.
About	Display information about the program and the installation.

6.1.4 Configuration - Toolbar

Program part: **Configuration**

	Manage users and groups of users with access permissions, signature permissions and options (<i>see Chapter 6.2.1.1, page 303</i>).
---	---

	Manage security settings with options for login, password protection, Audit Trail and electronic signature (<i>see Chapter 6.2.2.1, page 312</i>).
	Open the Audit Trail (<i>see Chapter 6.4, page 336</i>).
	Log out user (<i>see Chapter 2.2.3, page 12</i>).
	Modify layout of loaded configuration view (<i>see Chapter 4.1.7.2, page 101</i>).
	Load a saved configuration view (<i>see Chapter 4.1.7.3, page 102</i>).
	Save current configuration view (<i>see Chapter 4.1.7.4, page 102</i>).
	Open StabNet Help.

6.1.5 Configuration - Subwindows

Program part: **Configuration**

Selection

The following subwindows can be displayed in the main window:

- *Devices*
Display of the automatically recognized devices.
- *Sensors*
Display of the data for all defined sensors.
- *Temperature coefficients*
Display of the Q10 factors and Arrhenius coefficients of different samples.

Presentation

The subwindows can be enlarged or made smaller to suit by dragging the separating bar between the windows.

By clicking on the button  above at the right, the subwindows can be maximized so that only one subwindow is displayed in the main window. The original view of all subwindows is restored when the  button in the maximized subwindow is clicked on again.

6.1.6 Configuration - Functions

Program part: **Configuration**

The following functions can be carried out in the **Configuration** program part:

Views

- *Change the layout of the configuration view*

- *Load configuration view*
- *Save configuration view*
- *Rename configuration view*
- *Delete configuration view*

User administration

- *Manage user groups*
- *Access permissions*
- *Signatures*
- *Options*
- *Users*

Security settings

- *Login/Password protection*
- *Audit Trail/Changes*
- *Electronic signature*
- *Default reasons*

Audit Trail

- *Audit Trail*

Program administration

- *Backup directories*
- *Clients*
- *Licenses*

Export/Import of configuration data

- *Export configuration data*
- *Import configuration data*

Backup/Restore configuration data

- *Backup configuration data automatically*
- *Backup configuration data manually*
- *Restore configuration data*

Templates

- *E-mail templates*

Options

- *General program properties*

6.1.7 Views

6.1.7.1 Views - General

Program part: **Configuration/Database /**

Definition

The contents and design of the main window in the **Database** and **Configuration** program parts is called a **View**. The following elements belong to a view:

- Number, arrangement, sequence and size of the subwindows.
- Representation within the individual subwindows, i.e. column sequence, column width, sorting and filter.

Functions

The following functions are possible for views:

- *Changing the layout*
Define the number, arrangement and sequence of the subwindows for the current view.
- *Save view*
Save current view.
- *Load view*
Load a saved view.
- *Rename view*
Rename a saved view.
- *Delete view*
Delete a saved view.

Save automatically

If the corresponding item under **Save on closing** is activated under **Options** on the **Save** tab, then the current view will be saved automatically when the program is closed.

Load automatically

The standard procedure is that the view saved when the program is terminated will be loaded automatically the next time that the program is opened. As an alternative, a default view can be defined for each user group that is loaded automatically the first time that the program part is opened.

The standard procedure is that the view with the following subwindows is opened with the very first program start:

- **Configuration**
Devices, Sensors, Temperature coefficients
- **Database**
Determination overview, Curves, Information, Results

Changing the layout

Dialog window: **Database/Configuration ▶ View ▶ Change layout... ▶ Change layout**

The **Change layout** dialog window is opened with the  symbol or the **View ► Change layout...** menu item.

Select layout

Selection of a graphical symbol for the number, arrangement and sequence of the subwindows.

Selection	Selection of the possible combinations
-----------	--

Available subwindows

Display the subwindows that are still available for displaying the view.

Selection	Selection of the subwindows
-----------	-----------------------------

Displayed subwindows

Display the subwindows that are shown in the view.

Selection	Subwindows
• File menu: Open, Save, Print, Exit • Edit menu: Copy, Paste, Undo, Redo • Format menu: Bold, Italic, Underline, Font Color, Background Color • Window menu: New Window, Close All, Show Desktop • Help menu: About, Help Topics	• Main window: The central area where the document is displayed. • Status bar: Located at the bottom of the window, it displays information about the current document or selection. • Toolbars: Groups of icons used for performing common tasks like saving, opening, and editing. • Navigation pane: A sidebar on the left side of the window that allows users to navigate through different sections of the document. • Search pane: A sidebar on the right side of the window that allows users to search for specific text or elements within the document.



Add the selected subwindow to the view.



Remove the selected subwindow from the view.



Move the selected subwindow upward (modifies sequence).



Move the selected subwindow downward (modifies sequence).

6.1.7.3 Loading a view

Dialog window: **Database/Configuration ▶ View ▶ Load view... ▶ Load view**

The **Load view** dialog window is opened with the  symbol or the **View ► Load view...** menu item.

Name

Name of the view to be loaded.

[Rename]

Rename the selected view.



[Delete]

Delete the selected view.

[Load]

Load the selected view.

Load view automatically

The standard procedure is that the view saved when the program is terminated will be loaded automatically the next time that the program is opened. As an alternative, a default view can be defined for each user group that is loaded automatically the first time that the program part is opened.

The standard procedure is that the view with the following subwindows is opened with the very first program start:

- **Configuration**
Devices, Sensors, Temperature coefficients
- **Database**
Determination overview, Curves, Information, Results

6.1.7.4 Saving a view

Dialog window: **Database/Configuration** ▶ **View** ▶ **Save view...** ▶ **Save view**

The **Save view** dialog window is opened with the  symbol or the **View ► Save view...** menu item.

Name

Name under which the view is to be saved.

[Rename]

Rename the selected view.

[Delete]

Delete the selected view.

[Save]

Save the view under the given name. The saved views are globally valid and available for client/server systems.

Save view automatically

The current view will be saved automatically when the program is closed if the corresponding item is activated under **Save on closing** on the **Save** tab in the **Options** dialog window in the **Configuration** program part.

6.1.7.5 Renaming a view

Dialog window: **Database/Configuration** ▶ **View** ▶ **Load view.../Save view...** ▶ **[Rename]** ▶ **Rename view**

To be able to rename a view, either the **Load view** or the **Save view** dialog window must be opened and the **[Rename]** button must be pressed down. The **Rename view** window opens afterwards.

Rename 'Name' view after

entry of a new name for the view.

Entry	50 characters
-------	---------------

6.1.7.6 Deleting a view

Function: **Database/Configuration** ▶ **View** ▶ **Load view.../Save view...** ▶ **[Delete]**

To delete a view, either the **Save view** or **Save view** dialog window must be opened and the **[Delete]** button must be pressed down.

6.2 Administration

6.2.1 User administration

6.2.1.1 User administration

Dialog window: **Configuration** ► **Tools** ► **User administration...** ► **User administration**

Overview

User groups and their users can be managed in the **User administration** dialog window. Access permissions can be defined for menu items and functions for each user group; signature permissions and default views can be defined for individual program parts. In the case of client/server systems, the user administration is globally valid for all connected clients (central user administration).

The three user groups **Administrators** (with the user **Admin1**), **Users** and **Removed users** (each without any users) are automatically created at the time of installation. All groups can be renamed; the **Administrators** group is the only group that cannot be deleted.

The user administration data can be exported and imported. In this way this data can be exchanged between different client/server systems.

The user administration data can be output as a PDF file with the **File ► Print (PDF)... ► User administration** menu item.

Structure

The **User administration** dialog window is divided into two parts, the size of which can be modified with the mouse. The user groups with their

assigned users are listed in a tree in the left-hand part; the right-hand side shows details of the selected items.

Each user group, with the exception of the **Removed users** group, contains the following items:

- *Access permissions*
Assign access permissions to the four program parts and their menu bars.
- *Signatures*
Assign signature permissions for methods and determinations.
- *Options*
Definition of the view for the individual program parts.
- *Users*
Details regarding user.

Functions

The following functions can be carried out in the **User administration** dialog window:

- *Add user groups*
- *Copy user groups*
- *Rename user groups*
- *Delete user groups*
- *Define access permissions for user groups*
- *Signature permissions for user groups*
- *Define options for user groups*
- *Add user*
- *Set start password for new user*
- *Deactivate user*
- *Activate user*
- *Remove user*

6.2.1.2 User groups

6.2.1.2.1 User groups - Details

Dialog window: **Configuration** ▶ **Tools** ▶ **User administration...** ▶ **User administration**

If a user group is selected in the left-hand side of the **User administration** dialog window then details of this user group will be shown on the right-hand side together with a table containing all its members.

Group data

Group name

Display of the name of the user group.

Description of the user group.

Entry **256 characters**

Rename the selected user group.

Delete the selected user group.

Copy the selected user group.

Add a new user group.

The table showing the group members contains information about all members of the selected user group. The table can neither be edited nor sorted.

Short name of the user.

Full name of the user.

Current user status.

Selection	enabled	disabled
-----------	---------	----------

The user can log in as usual.

The user can no longer log in. The administrator must first assign him/her the status **enabled** and provide him/her with a new start password.

Add a new user to the user group.

on | off (Default value: **off**)

Delete signatures level 2

Permissions for determinations

on | off (Default value: **off**)

on | off (Default value: **off**)

on | off (Default value: **off**)

Permissions for Audit Trail

on | off (Default value: **off**)

Note

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6.2.1.2.6 Copying a user group

In order to copy a user group and save it under a new name, an existing group must be selected and either the context-sensitive menu item **Copy group** or the **[Copy group]** button must be pressed. The **Copy group** dialog window is then opened.

Name of the new group.

Entry	24 characters
-------	---------------

Pressing **OK** creates a new group under this name that has the same properties (access permissions, signature permissions, etc.) as the selected group; it does not contain any users. The **Description** field and the table of group members are empty.

Dialog window: **Configuration ▶ Tools ▶ User administration... ▶ User administration ▶ [Rename group] ▶ Rename group**

In order to rename a selected user group, either the context-sensitive menu item **Rename group** or the **[Rename group]** button must be pressed. The **Rename group** dialog window is then opened.

Entry of the new group name.

Entry	24 characters
-------	---------------

Function: **Configuration** ▶ **Tools** ▶ **User administration...** ▶ **User administration** ▶ **[Delete group]**

In order to delete a selected user group, either the context-sensitive menu item **Delete group** or the **[Delete group]** button must be pressed. The group is then deleted.



Note

Deleting user groups is only possible if the group no longer contains any users.

Entry	50 characters
-------	---------------

Opens the **Start password** dialog window. This button is active only for users with **enabled** status. If a user has forgotten his password, then the Administrator can assign a new start password.

Current user group. The administrator can modify the group assignment of the user. The user is automatically moved to the new group. A user can also be moved to a new group with Drag&Drop.

Selection	Selection of the defined user groups
-----------	--------------------------------------

Possibility to enter additional information for the user (e.g. function, address).

Entry	1000 characters
-------	-----------------

6.2.1.3.2 Adding a user

Dialog window: **Configuration** ▶ **Tools** ▶ **User administration...** ▶ **User administration** ▶ **[Add user]** ▶ **Add user**

- There are two possible ways to add a new user:

- Select a user group and then the context-sensitive menu item **Add user**.
- Select a user group and press the **[Add user]** button.

User

Short name of the new user that must be used to log in at program start. After the name has been entered, a **Start password** must be issued with which the user is entered in the list of users.

[Start]

Start to restore the configuration database. After the start, a progress bar appears in the window. When the backup has been completed, the dialog window closes automatically.

6.3.3 Templates

6.3.3.1 E-mail templates

6.3.3.1.1 Managing e-mail templates

Dialog window: **Configuration ▶ Tools ▶ Templates ▶ E-mail templates... ▶ E-mail templates**

The saved e-mail templates are displayed in a table in the **E-mail templates** dialog window. The table cannot be edited, but with a click on the column title the table can be sorted according to the selected column in either ascending or descending order.

Name

Name of the e-mail template.

Recipient

E-mail address of the recipient.

The **[Edit]** menu below the list of e-mail templates or a right-click on the table opens a menu with the following menu items:

New...	Create new template. The Edit e-mail template window opens in which a new template can be defined (<i>see Chapter 2.6.3, page 63</i>).
Properties...	Edit the selected template. The Edit e-mail template window opens in which the template can be edited (<i>see Chapter 2.6.3, page 63</i>).
Copy	Copy the selected template and save it under the name Copy of 'Template name' .
Delete	Delete the selected template.
Send test E-mail	Send test e-mail with the selected e-mail template.

6.3.3.1.2 Editing e-mail templates

Dialog window: **Configuration** ▶ **Tools** ▶ **Templates** ▶ **E-mail templates...** ▶ **E-mail templates** ▶ **New...** / **Properties...** ▶ **Edit e-mail template**

E-mail template

Name of the e-mail template.

Entry	16 characters
-------	---------------

E-mail address

Entry	200 characters
-------	----------------

E-mail address

Entry	200 characters
-------	----------------

Entry	200 characters
-------	----------------

Input range	1 - 65536
Default value	25

Check box for activating the authentication of the sender when sending the e-mail or selecting the authentication method.

Selection	SMTP SMTP after POP
Default value	SMTP

Entry	3 - 200 characters
-------	--------------------

Input range	1 - 65536
Default value	110

Entry	2 - 50 characters
-------	-------------------

on | off (Default value: **on**)

on | off (Default value: **on**)

on | off (Default value: **on**)

Tab: **Configuration** ▶ **Tools** ▶ **Options...** ▶ **Options** ▶ **PDF**

on | off (Default value: **on**)

on | off (Default value: **on**)

on | off (Default value: **on**)

on | off (Default value: **on**)

6.4 Audit Trail

6.4.1 Audit Trail - General

6.4.1.1 Audit Trail - Definition

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

Definition

The term **Audit Trail** means the FDA-compliant protocolling of all user actions with which data is generated, modified or deleted in **StabNet**. Each of these actions is saved as a line in the Audit Trail table together with the date, time and name of the logged-in user.

Organization

All Audit Trail data is saved in the configuration database and can be backed up and restored together with this database. In **local server systems (StabNet full)**, this is stored in the program directory of the computer on which the program has been installed. In **client/server systems (StabNet multi)**, the Audit Trail data is stored centrally on the server and contains all the actions taking place on all the computers (clients) that are connected to this server.

Configuration

Recording the Audit Trail actions can be switched on and off in the Security settings (*see Chapter 6.2.2.4, page 317*). If the recommended settings are activated with the **[Set]** button, then the following conditions will be observed:

- Complete record of all actions with which data is created, modified or deleted in **StabNet**.
- Specification of date, time, time zone and name of the logged-in user (short name and full name) for each action.
- Mandatory entry of a comment by the user in the event of modifications of methods, determinations and sample data (only live modifications).

6.4.1.2 Audit Trail - User interface

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

Elements

The user interface of the program window **Audit Trail** comprises the following elements:

- Menu bar
- Toolbar
- Filter selection
- Audit Trail table

- ### 6.4.1.3 Audit Trail - Menu bar

6.4.1.3.1

Program window: **Configuration ▶ Tools ▶ Audit Trail... ▶ Audit Trail**

The menu bar in the **Audit Trail** program window contains the following main items:

- *File*
Print, export, archive, delete Audit Trail.
- *View*
Update table, define column display.
- *Filter*
Define and use special filters and quick filters.
- *Tools*
Monitor Audit Trail.
- *Help*
Open program help, display program information.

6.4.1.3.2

Program window: **Configuration ▶ Tools ▶ Audit Trail... ▶ Audit Trail**

 Print (PDF)...	Output Audit Trail data sets as PDF file (<i>see Chapter 6.4.3.5, page 349</i>).
Export...	Export Audit Trail data sets (<i>see Chapter 6.4.3.2, page 347</i>).
Archive...	Archive Audit Trail data sets (<i>see Chapter 6.4.3.3, page 347</i>).
Delete	Delete archived Audit Trail data sets (<i>see Chapter 6.4.3.4, page 348</i>).
Close	Close the Audit Trail window.

6.4.1.3.3

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

 Update	Update Audit Trail table (see Chapter 6.4.2.4, page 342).
Column display...	Define columns for the Audit Trail table (see Chapter 6.4.2.2, page 340).

6.4.1.3.4

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

 Last filter	Apply the last quick or special filter again (<i>see Chapter 6.4.3.1.2, page 342</i>).
 Quick filter	Apply the quick filter (<i>see Chapter 6.4.3.1.3, page 343</i>).



 Special filter...	Define and apply a special filter (<i>see Chapter 6.4.3.1.4, page 343</i>).
 Remove filter	Remove the current filter (<i>see Chapter 6.4.3.1.5, page 347</i>).

6.4.1.3.5 Audit Trail - Tools menu

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

Monitoring	Define Audit Trail table monitoring (<i>see Chapter 6.4.3.6, page 350</i>).
Installation Log	Open the folder with the log files of the installation.
Verify export / archive	Check the checksum of an exported or archived Audit Trail file (<i>see Chapter 6.4.3.7, page 350</i>).

6.4.1.3.6 Audit Trail - Help menu

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

 StabNet Help	Open StabNet Help.
About	Display information about the program and the installation.

6.4.1.4 Audit Trail - Toolbar

Program window: **Configuration** ▶ **Tools** ▶ **Audit Trail...** ▶ **Audit Trail**

	Output Audit Trail data sets as PDF file (<i>see Chapter 6.4.1.3.2, page 337</i>).
	Apply the last quick or special filter again (<i>see Chapter 6.4.3.1.2, page 342</i>).
	Apply the quick filter (<i>see Chapter 6.4.3.1.3, page 343</i>).
	Define and apply a special filter (<i>see Chapter 6.4.3.1.4, page 343</i>).
	Remove the current filter (<i>see Chapter 6.4.3.1.5, page 347</i>).
	Update Audit Trail table (<i>see Chapter 6.4.2.4, page 342</i>).
	Open Program Help.

6.4.2.1 Audit-Trail - Table

Open

Contents

Type



Date _____

User

Full name

Client

Category



Action

Short description of the action.

Details

Detailed information about the action.

Archived

Shows whether the action has already been archived or not (only archived actions can be deleted).

Unwanted columns can be removed with the **View ► Column display...** menu item (see *Chapter 6.4.2.2, page 340*).

Updating

As long as the **Audit Trail** dialog window remains open, modifications in the table that are caused by ongoing user actions will not be displayed automatically. The table must either be updated or resorted or filtered with **View ► Update**.

Table view

The Audit Trail table cannot be edited. Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles:**
Sets the column width
- **Double-click on the margin between column titles:**
Sets the optimal column width
- **Drag the column title:**
Moves the column to the required location

6.4.2.2 Audit Trail - Column display

Dialog window: **Audit Trail ▶ View ▶ Column display... ▶ Column display**

The **Column display** dialog window is opened with **View ► Column display....** Here the columns can be defined which are to be displayed in the Audit Trail table.

Columns available

Display of all the fields that can be displayed as columns in the Audit Trail table.

Columns displayed

Display of all the fields that are displayed as columns in the Audit Trail table. Double-clicking on a column name moves the respective column to the left-hand side (available columns).



Remove the selected column from the table.



6.4.2.3 Audit Trail - Navigation bar

201 - 400 of 3967 (filtered)



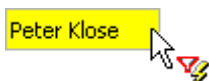
201 - 400 of 3967 (filtered)

StabNet 1.0

Audit Trail - Quick filter

Menu item: **Audit Trail** ▶ **Filter** ▶ **Quick filter**

A rapid filtration can be carried out in accordance with the content of the selected table field using the **Filter ► Quick filter** menu item or the  symbol in the **Audit Trail** program window. After this function has been selected, the field in which the cursor is located will have a colored background when navigating within the Audit Trail table. At the same time, the following special filter symbol appears:



Double-clicking with the left mouse button on the field selected in the table will cause its contents to be set as the filter criterion, and this filter will be applied directly to the table.



Note

The quick filter can be applied again within the filtered table, so that the number of entries can be limited step by step.

6.4.3.1.4 Audit Trail - Special filter

6.4.3.1.4.1 Special filter table

Dialog window: **Audit Trail** ▶ **Filter** ▶ **Special filter...** ▶ **Special filter - Database 'ConfigDB'**

The **Filter ► Special filter...** menu item or the  symbol in the **Audit Trail** program window is used to open the **Special filter - Database 'ConfigDB'** dialog window for the definition of user-specific filters.

Filter

Selection of the filter to be loaded for editing. An empty table with the name **New filter** is loaded per default.

Selection	'Filter name' New filter
Default value	New filter

[Save filter]

Open the **Save filter** dialog window in which the filter criteria entered in the table can be saved as a special filter under the required name (see *Chapter 6.4.3.1.4.3, page 346*).

[Delete filter]

The currently loaded special filter will be deleted.



Table view

The overview table shows all the defined filter criteria and cannot be directly edited. The table view can be adapted with the left mouse button as follows:

- **Drag the margin between column titles:**
Sets the column width
- **Double-click on the margin between column titles:**
Sets the optimal column width

For the meaning of the columns, see (see Chapter 6.4.3.1.4.2, page 344).

Menu items

The **[Edit]** menu beneath the filter table contains the following menu items:

Edit line	Open the Edit filter criterion %1 dialog window in which the filter conditions of the line selected in the table can be edited(see <i>Chapter 6.4.3.1.4.2, page 344</i>).
Insert new line	Insert a new empty line above the line selected in the table. The Edit filter criterion # dialog window will then open automatically (see <i>Chapter 6.4.3.1.4.2, page 344</i>).
Cut lines	Transfer the selected lines to the clipboard.
Copy lines	Copy the selected lines to the clipboard.
Paste lines	Paste lines from the clipboard above the selected line.
Delete lines	Delete the selected lines.

[Apply filter]

Apply the filter conditions to the Audit Trail table.

6.4.3.1.4.2 Special filter - Editing filter criteria

Dialog window: **Audit Trail** ▶ **Filter** ▶ **Special filter...** ▶ **Special filter - Database**
'ConfigDB' ▶ **[Edit]** ▶ **Edit line** ▶ **Edit filter criterion #**

[Edit] ► Edit line is used to open the **Edit filter criterion #** dialog window in which the filter criterion selected in the filter table can be edited.

Link

Selection of the type of link (logical operator) with the preceding filter condition.

Selection	AND OR
Default value	AND

6.4.3.1.5 Audit Trail - Removing a filter

Menu item: **Audit Trail** ▶ **Filter** ▶ **Remove filter**

The most recently applied filter is removed again with the **Filter ► Remove filter** menu item or with the  symbol in the **Audit Trail** program window and all entries are displayed.

6.4.3.2 Exporting the Audit Trail

Dialog window: **Audit Trail** ► **File** ► **Export...** ► **Export Audit Trail**

The **Export Audit Trail** dialog window opens with the **File ► Export...** menu item.

Save file as

Entry or selection (with ) of the complete path and the file name for saving the export file.

Entry	1000 characters
-------	-----------------

Selection

Selection	All records Selected records
Default value	All records

All records

All the entries from the filtered Audit Trail table are exported.

Selected records

Only the entries selected in the Audit Trail table will be exported.



Note

Audit Trail entries are exported in text format and cannot be imported back into the Audit Trail table. The export file contains a checksum which makes it possible to verify whether the file has been modified later on.

6.4.3.3 Archiving the Audit Trail

Dialog window: **Audit Trail** ▶ **File** ▶ **Archive...** ▶ **Archive Audit Trail**

The **Archive Audit Trail** dialog window opens with the **File ► Archive...** menu item.

Target directory

Entry or selection (with ) of the directory in which the Audit Trail entries are to be archived.

Entry	1000 characters
-------	-----------------

Selection

Selection	All records Records until
Default value	All records

All records

All entries from the filtered Audit Trail table will be archived.

Records until

Only data sets from the Audit Trail table up to the selected date will be archived.



Note

Archiving Audit Trail entries is identical to exporting them, i.e. the Audit Trail entries are stored in text format and cannot be imported back into the Audit Trail Table. The difference between this and exporting is that the archived entries can be highlighted in the **Archived** column and then deleted. The archive file contains a checksum which makes it possible to verify whether the file has been modified later on.

6.4.3.4 Deleting the Audit Trail

Dialog window: **Audit Trail ▶ File ▶ Delete ▶ Delete Audit Trail**

The **Delete Audit Trail** dialog window opens with the **File ► Delete** menu item.

Selection

Selection	All archived records Archived records until
Default value	All archived records

All archived records

All of the entries that are already archived will be deleted from the Audit Trail table.

Archived records until

Only the archived entries that were created by the selected date entry will be deleted from the Audit Trail table.

User 1

User

Short name of the first user who has the permission to delete Audit Trail entries.

Entry	24 characters
-------	---------------

6.5.1 Devices - General

Devices connected to the PC via USB are automatically recognized at the start of the program and entered in the device table. If the connection between PC and device or the power supply is interrupted, then the device will remain in the device table with **not ok** status. If it is reconnected then it will be recognized automatically by its serial number and again assigned to the existing device entry. This causes the status to change to **ok**.

6.5.2.1 Device table - User interface

Next GLP test

Date on which the next GLP test is due. If GLP monitoring is switched on and the set date is before the current date (i.e. the GLP test has not yet been carried out) then the date will be shown in red.

Remarks

Remarks about the device.



Note

Lines that contain red entries will also show the line number with a red background.

As soon as a determination is started at a workplace, the device being used for this purpose will be occupied, i.e. it cannot be used or configured at a different workplace until the determination has been finished. The line for an occupied device is shown in gray letters.

Table view

The device table cannot be edited directly. Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Sets the column width**
Drag the margin between column titles
- **Sets the optimal column width**
Double-click on the margin between column titles
- **Moves the column to the required location**
Drag the column title

Functions

The **[Edit]** menu beneath the device table contains the following menu items:

Delete	Delete the selected device. Only devices in the not ok status can be deleted (see Chapter 6.5.2.2, page 353).
Properties...	Edit the selected device (see Chapter 6.5.3, page 354).
Column display...	Define columns for the device table (see Chapter 6.5.2.3, page 353).
Print (PDF)...	Output of the device table as a PDF file (see Chapter 6.5.2.4, page 354).
Initialize	Initialize the selected device.

Deleting a device

Menu item: **Configuration ▶ Devices ▶ [Edit] ▶ Delete**

The device selected in the device table is deleted with **[Edit] ► Delete**.



Note

Only devices in the **not ok** status can be deleted (i.e. devices that are not connected).

Devices - Column display

Dialog window: **Configuration ▶ Devices ▶ [Edit] ▶ Column display... ▶ Column display**

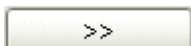
The **Column display** dialog window is opened with **[Edit] ► Column display...** Here you can define the columns that are to be shown in the device table.

Columns available

Display of all the fields that can be shown as columns in the device table.

Columns displayed

Display of all the fields that will be shown as columns in the device table. In the default settings, the **Device name**, **Device type**, **Device serial number**, **Status**, **Set to work**, **Next GLP test** and **Remarks** columns are displayed. The **Device name** and **Device type** columns are always present and cannot be removed.



Add the selected column to the table.



Remove the selected column from the table.



Modify the sequence of the displayed columns by moving the selected column up.



Modify the sequence of the displayed columns by moving the selected column down.

6.5.2.4 Printing the list of devices

Dialog window: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Print (PDF)...** ▶ **Print list of devices (PDF)**

The **Print list of devices (PDF)** dialog window is opened with **[Edit] ► Print (PDF)....**

Orientation

Selection	Portrait Landscape
Default value	Portrait

Portrait

Output of the device table in portrait format.

Landscape

Output of the device table in landscape format.

[OK]

The device table is shown in the required format as a PDF file and can be opened directly in Acrobat Reader, where it can then be printed out and/or saved.

6.5.3 Device properties

Dialog window: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'**

The Properties window is opened with the **[Edit] ► Properties...** menu item in the **Devices** subwindow for the device selected in the device table in which the parameters of the device can be edited. Properties can be set for the following devices:

- 892 Professional Rancimat
- 893 Professional Biodiesel Rancimat
- 895 Professional PVC Thermomat

6.6 Sensors subwindow

6.6.1 Sensors - General

Subwindow: **Configuration ▶ Sensors**

Sensors subwindow

The **Sensors** subwindow contains the Sensor table with all manually added sensors. It can be shown in the **Configuration** program part as a part of the Configuration view or (if not present in the user interface) in a separate window with **View ► Quick access**. The subwindow can be enlarged and reduced as required; it can also be maximized.

6.6.2.1 Sensor table - User interface

Contents

Sensor name

Sensor type

Type of the sensor.

Cell constant

Cell constant of the conductivity sensor.

Set to work

Date on which the sensor was set to work for the first time.

Expiry date

Expiry date of the sensor. If sensor monitoring is switched on and if the set date is before the current date (i.e. the working life has expired) then the date will be shown in red.

Next calibration

Date on which the next cell constant calibration is to be carried out.

Additional columns from the Sensor properties can be displayed with the **Edit ► Column display...** menu item.



Note

Lines that contain red entries will also show the line number with a red background.

Table view

The sensor table cannot be edited directly. Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Sets the column width**
Drag the margin between column titles

6.6.3.4

Tab: **Configuration** ▶ **Sensors** ▶ **[Edit]** ▶ **Properties...** ▶ **Calibration data**

Calibration point 1

Temperature

Manual entry of the temperature.

Input range	-250.0 - 999.9 °C (Increment: 0.1)
Default value	0.0 °C

Resistance

Manual entry of the resistance.

Input range	0.000 - 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

Calibration point 2

Temperature

Manual entry of the temperature.

Input range	-250.0 - 999.9 °C (Increment: 0.1)
Default value	100.0 °C

Resistance

Manual entry of the resistance.

Input range	0.000 - 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

Calibration point 3

Temperature

Manual entry of the temperature

Input range	-250.0 - 999.9 °C (Increment: 0.1)
Default value	200.0 °C

Resistance

Manual entry of the resistance.

Input range	0.000 - 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

User

Display of the user who was logged in during the entry of the calibration data.

6.6.3.5 Properties - Limit values

Tab: **Configuration** ▶ **Sensors** ▶ **[Edit]** ▶ **Properties...** ▶ **Limit values**



Note

This tab only appears for sensors of the **Conductivity sensor** type.

Cell constant monitoring

on | off (Default value: **off**)

If this check box is activated, then the value of the cell constant for the conductivity sensor is monitored.

Lower limit

Lower limit value for the cell constant.

Input range	0.10 - 10.00 /cm (Increment: 0.01)
Default value	0.90 /cm

Upper limit

Upper limit value for the cell constant.

Input range	0.10 - 10.00 /cm (Increment: 0.01)
Default value	1.30 /cm

6.7 Temperature coefficients subwindow

6.7.1 Temperature coefficients - General

Subwindow: **Configuration** ▶ **Temperature coefficients**

Temperature coefficients subwindow

The **Temperature coefficients** subwindow can be displayed in the **Configuration** program part as a part of the Configuration view or (if not present in the user interface) in a separate window with **View ► Quick access**. The subwindow can be enlarged and reduced as required; it can also be maximized.

6.7.2 Temperature coefficients table

6.7.2.1 Table of temperature coefficients - User interface

Subwindow: **Configuration** ▶ **Temperature coefficients**

Contents

In the default settings, the following information regarding the temperature coefficients is shown in the table of temperature coefficients:

Table view

The temperature coefficients table cannot be edited directly. Click on the column title to sort the table according to the selected column in either ascending or descending order. The table view can be adapted with the left mouse button as follows:

- **Sets the column width**
Drag the margin between column titles
- **Sets the optimal column width**
Double-click on the margin between column titles
- **Moves the column to the required location**
Drag the column title

Functions

The **[Edit]** menu beneath the table of the temperature coefficients contains the following menu items:

New... ▶	Add a new temperature coefficient (<i>see Chapter 6.7.2.2, page 366</i>).
Arrhenius	Add the Arrhenius coefficient.
Q10	Add the Q10 factor.
Delete	Delete the selected temperature coefficient (<i>see Chapter 6.7.2.3, page 366</i>).



Modify the sequence of the displayed columns by moving the selected column down.

Menu item: **Configuration** ▶ **Temperature coefficients** ▶ **[Edit]** ▶ **Print (PDF)...** ▶ **Printing the list of temperature coefficients (PDF)**

Orientation

Portrait

Landscape

[OK]

6.7.3 Temperature coefficients - Properties

6.7.3.1 Temperature coefficient - Editing the properties

The Properties window is opened with the **[Edit] ► Properties...** menu item in the **Temperature coefficients** subwindow for the temperature coefficient selected in the table in which the parameters of the temperature coefficient can be edited:

Type = Arrhenius

- 367

Type = Q10

- *Temperature coefficient*

6.7.3.2 Properties - Temperature coefficient (Arrhenius)

Tab: Configuration ▶ Temperature coefficients ▶ [Edit] ▶ Properties... ▶ Temperature coefficient - 'Name' ▶ Temperature coefficients

Name

Name of the temperature coefficient.

Entry	40 characters
-------	---------------

Type

Display of the temperature coefficient type (**Arrhenius**).

Arrhenius coefficient

Value of the Arrhenius coefficient

Input range	10 - 1,000,000 (Increment: 1)
Default value	11000

Comment

Remarks on the temperature coefficient.

Entry	40 characters
Default value	'empty'

Assignment method

Display as to whether the assignment of values took place manually or by adoption from the extrapolation. If the value was entered manually, **manual** is displayed; if it was adopted using the **[Save coefficient]** button in the **Extrapolation** dialog window, then from extrapolation is displayed.

User

The user who was logged in during value assignment or who entered the value manually.

Assignment date

Display of the date and time of the last value assignment. The current date is entered automatically in this field at the time a new temperature coefficient is entered. The assignment date is used for the monitoring of the temperature coefficients (**Assignment date + Working life = Expiry date**).

Monitoring the temperature coefficient

If this check box is activated, then the working life of the temperature coefficient is monitored.

The working life of the temperature coefficient in days. If a value is entered here then the **Expiry date** will be automatically adapted.

Input range	0 - 999 Days
Default value	999 Days

Expiry date of the temperature coefficient. The date can be selected by pressing  in the **Select date** dialog window. After a date has been entered, the value for the **Working life** will be automatically adapted.

Default value **Date of assignment + 999 days**

If this option is activated, the message is sent to the address defined under **[E-mail...]**. The message is sent in text format.

[E-mail...] opens the **Send e-mail** window (see Chapter 2.6.1, page 62).

If this option is activated, an acoustic signal will be emitted

If during monitoring it is found that the working life of the temperature coefficient has expired, then one of the following actions will be triggered automatically at the time of start test:

Selection	Document message only Display and document message Do not start the determination
Default value	Display and document message



Document message only

The message that the working life of the temperature coefficient has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the working life of the temperature coefficient has expired will be saved automatically in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

Device serial number

Shows the serial number of the device.

Set to work

Shows the date on which the device was automatically added to the device table.

Remarks

Remarks about the device.

Entry	1,000 characters
Default value	'empty'

7.1.1.2 Properties - Gas flow

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **Gas flow**

Internal pump

on | off (Default value: **on**)

Activates/deactivates gas supply with internal pump. If the internal pump is deactivated, an external gas supply must be connected to the "**Air / N2 in**" connection.

Monitoring the filter

on | off (Default value: **off**)

If this check box is activated, the operating hours of the filter are monitored.

Operating hours - Limit

Maximum permitted operating hours of the filter. If this value is exceeded, the message or action defined below will be triggered.

Input range	0 - 99,999
Default value	99,999

Operating hours - Current value

Shows the number of operating hours of the filter to date. If this limit value is exceeded, then the current value will be displayed in **red**.

[Reset]

Resets the current value for the filter to **0**.

Document message only

The message that the service interval has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the service interval has expired will be automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

7.1.1.3 Properties - Temperature correction

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **Temperature correction**

The **Temperature correction** tab contains a table with the results of the temperature correction of block A or B determined in the workplace. The table contains the following columns:

Sample temperature

Sample temperature from the method with which the determination of the temperature correction was carried out.

Gas flow

Gas flow from the method with which the determination of the temperature correction was carried out.

Block

Block (A or B) in which the temperature correction was determined.

Measured value

Temperature correction measured value.

Date

Date and time of the temperature correction determination.

User

Short name of the user who performed the determination of the temperature correction.

Comment

Comment on the determination of the temperature correction.

Name of the sensor which was used to determine the temperature correction.

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **GLP**

Date of the last GLP test. This date can be selected by clicking on  in the **Select date** dialog window (*see Chapter 2.5.1, page 59*).

Comment regarding the GLP test.

If this check box is activated, then the time interval for the GLP test is monitored.

Monitoring cannot be switched on until after a date has been entered in the "GLP test date" field.

Time interval to next GLP test. If a value is entered here then the date in the **Next GLP test** field will be adjusted automatically.

Date on which the next GLP test is to be carried out. The date can be selected by pressing  in the **Select date** dialog window (*see Chapter 2.5, page 59*). After the date has been entered, the **GLP test interval** field will be adjusted automatically.

The message options can only be edited if monitoring is switched on.

Message by e-mail

on | off (Default value: **off**)

The message is sent to the address defined under **[E-mail...]** if this check box is activated. The message is sent in text format.

[E-mail...]

[E-mail...] opens the **Send e-mail** window (see Chapter 2.6.1, page 62).

Acoustic signal

on | off (Default value: **off**)

If this check box is activated, then an acoustic signal will be emitted.

Action

The actions can only be edited if monitoring is switched on.

If during monitoring it is found that the validity period has expired, then one of the following actions will be triggered automatically during the start test:

Selection	Document message only Display and document message Do not start the determination
Default value	Display and document message

Document message only

The message that the validity period has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the validity period has expired will be automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

7.1.1.5 Dialog window Load new program version

Dialog window: **Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ [General ▶ Update] ▶ Load new program version**

If it is discovered that the device to be connected has an old program version not supported by StabNet, then it must be updated. Select the device from the device table. Open the Properties window with **Edit ► Properties....** On the **General** tab, click on **[Update]** to open the **Load new program version** dialog window.

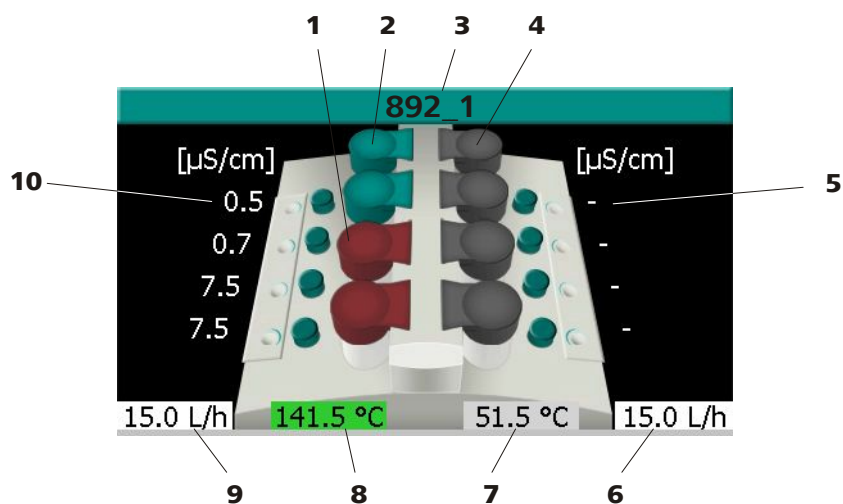
Shows the old device program version.

Shows the new device program version.

Loads the new program version. A progress bar is shown during loading.

Make sure that the device is not manipulated or switched off during the loading process and follow the instructions shown.

The following information is shown on the device display: measured conductivity value, heating block temperature, gas flow.



1	Measuring vessel cover red This measuring site is not available for a determination (determination is running or multiple determination has not yet been completed).
2	Measuring vessel cover green A determination can be started on this measuring site.
3	Device name Shows the device name.

4	Measuring vessel cover gray This measuring site is not available for starting a determination (device not connected to computer or no method loaded).
5	Conductivity display Conductivity cannot be displayed (no sensor connected or no valid measuring signal).
6	Gas flow display block B Shows the gas flow measured on block B (gray background: gas flow switched off; white background: gas flow switched on).
7	Temperature display block B Shows the temperature measured on block B (gray background: heater switched off; red background: temperature not reached; green background: temperature reached).
8	Temperature display block A Shows the temperature measured on block A (gray background: heater switched off; red background: temperature not reached; green background: temperature reached).
9	Gas flow display block A Shows the gas flow measured on block A (gray background: gas flow switched off; white background: gas flow switched on).
10	Conductivity display Shows the conductivity measurement.

7.2 893 Professional Biodiesel Rancimat

7.2.1 Device properties

The parameters for the 893 Professional Biodiesel Rancimat are defined on the following tabs:

- *General*
General device information such as device name, device type, serial number, etc.
- *Gas flow*
Information about the pump as well as filter and molecular sieve monitoring.
- *Temperature correction*
Results of the temperature correction determined in the workplace.
- *GLP*
Information on GLP tests and GLP monitoring.

7.2.1.1

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **General**

General properties of the device are displayed on the **General** tab.

Device name

Name of the device, can be freely defined by the user. This name will be shown on the device display after StabNet has been started. If the name is changed in StabNet, the new device name will be shown on the display.

Entry	50 characters
Default value	Device type number_#

Device type

Shows the device type.

Program version

Shows the program version of the device.

[Update]

Opens the dialog window **Load new program version** (see Chapter 7.1.1.5, page 378).

This button is displayed only with devices/instruments that have their own firmware. It is only active if the device or instrument has an old program version not supported by **StabNet** that can be updated by **StabNet** itself.

Device serial number

Shows the serial number of the device.

Set to work

Shows the date on which the device was automatically added to the device table.

Remarks

Remarks about the device.

Entry	1,000 characters
Default value	'empty'

7.2.1.2

Properties - Gas flow

Tab: Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ Gas flow

Message

Defines how the information regarding the time of the next service is to be communicated.

Message by e-mail

on | off (Default value: **off**)

If this option is activated, the message is sent to the address defined under **[E-mail...]**. The message is sent in text format.

[E-mail...]

[E-mail...] opens the **Send e-mail** window (see Chapter 2.6.1, page 62).

Acoustic signal

on | off (Default value: **off**)

If this check box is activated, then an acoustic signal will be emitted.

Action

If during monitoring it is found that the service interval has expired, then one of the following actions will be triggered automatically during the start test:

Selection	Document message only Display and document message Do not start the determination
Default value	Display and document message

Document message only

The message that the service interval has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the service interval has expired will be automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

7.2.1.3 Properties - Temperature correction

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **Temperature correction**

The **Temperature correction** tab contains a table with the results of the temperature correction of block A or B determined in the workplace. The table contains the following columns:

Sample temperature

Sample temperature from the method with which the determination of the temperature correction was carried out.

Gas flow

Gas flow from the method with which the determination of the temperature correction was carried out.

Block

Block (A or B) in which the temperature correction was determined.

Measured value

Temperature correction measured value.

Date _____

Date and time of the temperature correction determination.

User

Short name of the user who performed the determination of the temperature correction.

Comment

Comment on the determination of the temperature correction.

Sensor name

Name of the sensor which was used to determine the temperature correction.

7.2.1.4 Properties - GLP

Tab: Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ GLP

Last GLP test

Date of the last GLP test. This date can be selected by clicking on  in the **Select date** dialog window (see Chapter 2.5.1, page 59).

Comment on GLP test

Comment regarding the GLP test.

Entry	1,000 characters
-------	-------------------------

Selection	Document message only Display and document message Do not start the determination
Default value	Display and document message

Document message only

The message that the validity period has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the validity period has expired will be automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

7.2.1.5 Dialog window Load new program version

Dialog window: **Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ [General ▶ Update] ▶ Load new program version**

If it is discovered that the device to be connected has an old program version not supported by StabNet, then it must be updated. Select the device from the device table. Open the Properties window with **Edit ► Properties....** On the **General** tab, click on **[Update]** to open the **Load new program version** dialog window.

Old version

Shows the old device program version.

New version

Shows the new device program version.

[Load]

Loads the new program version. A progress bar is shown during loading.

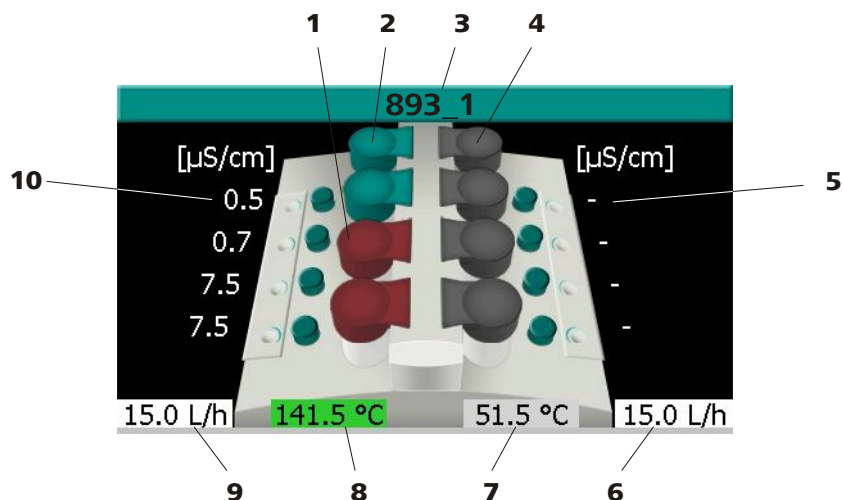


Note

Make sure that the device is not manipulated or switched off during the loading process and follow the instructions shown.

7.2.2 Device display

The following information is shown on the device display: measured conductivity value, heating block temperature, gas flow.



1 Measuring vessel cover red

This measuring site is not available for a determination (determination is running or multiple determination has not yet been completed).

2 Measuring vessel cover green

A determination can be started on this measuring site.

3 Device name

Shows the device name.

4 Measuring vessel cover gray

This measuring site is not available for starting a determination (device not connected to computer or no method loaded).

5 Conductivity display

Conductivity cannot be displayed (no sensor connected or no valid measuring signal).

6 Gas flow display block B

Shows the gas flow measured on block B (gray background: gas flow switched off; white background: gas flow switched on).

7 Temperature display block B

Shows the temperature measured on block B (gray background: heater switched off; red background: temperature not reached; green background: temperature reached).

[Update]

Opens the dialog window **Load new program version** (see Chapter 7.1.1.5, page 378).

This button is displayed only with devices/instruments that have their own firmware. It is only active if the device or instrument has an old program version not supported by **StabNet** that can be updated by **StabNet** itself.

Device serial number

Shows the serial number of the device.

Set to work

Shows the date on which the device was automatically added to the device table.

Remarks

Remarks about the device.

Entry	1,000 characters
Default value	'empty'

7.3.1.2 Properties - Temperature correction

Tab: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **Temperature correction**

The **Temperature correction** tab contains a table with the results of the temperature correction of block A or B determined in the workplace. The table contains the following columns:

Sample temperature

Sample temperature from the method with which the determination of the temperature correction was carried out.

Gas flow

Gas flow from the method with which the determination of the temperature correction was carried out.

Block

Block (A or B) in which the temperature correction was determined.

Measured value

Temperature correction measured value.

Date _____

Date and time of the temperature correction determination.



User

Short name of the user who performed the determination of the temperature correction.

Comment

Comment on the determination of the temperature correction.

Sensor name

Name of the sensor which was used to determine the temperature correction.

7.3.1.3 Properties - GLP

Tab: Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ GLP

Last GLP test

Date of the last GLP test. This date can be selected by clicking on  in the **Select date** dialog window (see Chapter 2.5.1, page 59).

Comment on GLP test

Comment regarding the GLP test.

Entry	1,000 characters
-------	------------------

Monitoring of GLP validity

on | off (Default value: **off**)

If this check box is activated, then the time interval for the GLP test is monitored.

Monitoring cannot be switched on until after a date has been entered in the "GLP test date" field.

GLP test interval

Time interval to next GLP test. If a value is entered here then the date in the **Next GLP test** field will be adjusted automatically.

Input range	1 - 999 days
Default value	999 days

Next GLP test

Date on which the next GLP test is to be carried out. The date can be selected by pressing  in the **Select date** dialog window (*see Chapter 2.5, page 59*). After the date has been entered, the **GLP test interval** field will be adjusted automatically.

Message

Message by e-mail

The message is sent to the address defined under **[E-mail...]** if this check box is activated. The message is sent in text format.

[E-mail...] opens the **Send e-mail** window (see Chapter 2.6.1, page 62).

on | off (Default value: **off**)

If this check box is activated, then an acoustic signal will be emitted.

Action

The actions can only be edited if monitoring is switched on.

If during monitoring it is found that the validity period has expired, then one of the following actions will be triggered automatically during the start test:

Document message only

The message that the validity period has expired will be automatically saved in the determination.

Display and document message

A message is displayed and you can select whether you want to continue the run or cancel it. If the run is continued, then the message that the validity period has expired will be automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

7.3.1.4 Dialog window Load new program version

Dialog window: **Configuration ▶ Devices ▶ [Edit] ▶ Properties... ▶ Properties - 'Device type' - 'Device name' ▶ [General ▶ Update] ▶ Load new program version**

If it is discovered that the device to be connected has an old program version not supported by StabNet, then it must be updated. Select the device from the device table. Open the Properties window with **Edit ► Properties....** On the **General** tab, click on **[Update]** to open the **Load new program version** dialog window.

Old version

Shows the old device program version.

New version

Shows the new device program version.

[Load]

Loads the new program version. A progress bar is shown during loading.

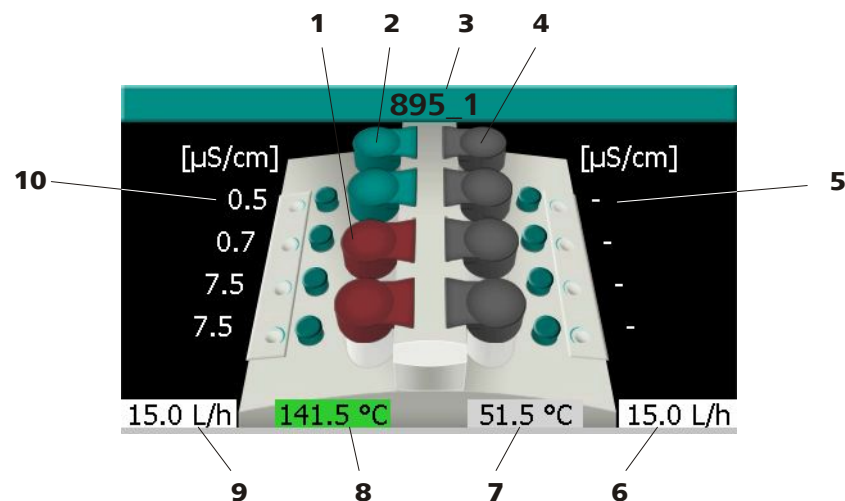


Note

Make sure that the device is not manipulated or switched off during the loading process and follow the instructions shown.

7.3.2 Device display

The following information is shown on the device display: measured conductivity value, heating block temperature, gas flow.



1 Measuring vessel cover red

This measuring site is not available for a determination (determination is running or multiple determination has not yet been completed).

2 Measuring vessel cover green

A determination can be started on this measuring site.

3 Device name

Shows the device name.

4 Measuring vessel cover gray

This measuring site is not available for starting a determination (device not connected to computer or no method loaded).

5 Conductivity display

Conductivity cannot be displayed (no sensor connected or no valid measuring signal).

6 Gas flow display block B

Shows the gas flow measured on block B (gray background: gas flow switched off; white background: gas flow switched on).

7 Temperature display block B

Shows the temperature measured on block B (gray background: heater switched off; red background: temperature not reached; green background: temperature reached).

8 Temperature display block A

Shows the temperature measured on block A (gray background: heater switched off; red background: temperature not reached; green background: temperature reached).

9 Gas flow display block A

Shows the gas flow measured on block A (gray background: gas flow switched off; white background: gas flow switched on).

10 Conductivity display

Shows the conductivity measurement.



- 6** Click on **[Save]**.

The special filter is saved with the desired name.

Using special filters

- 1 In the **Special filter - Audit Trail** dialog window, select the desired special filter from the **Filter** selection list.

The table is then filtered.

8.1.3 Exporting the Audit Trail

How to proceed?

- 1 Select the **Configuration** program part.

- 2 Click on the symbol or the **Tools ► Audit Trail...** menu item.

The **Audit Trail** dialog window opens.

- 3** If desired, filter the Audit Trail table.

- 4** If desired, select the Audit Trail entries to be exported.

- 5** Click on the **File ► Export...** menu item.

The **Export Audit Trail** dialog window opens.

- 6** Enter or select the directory and file name for saving the export file under **Save file as**.

- 7** Select the desired option (**All records** or **Selected records**) under **Selection**.

- 8** Click on **[OK]**.

The selected Audit Trail data sets are then exported.



Note

Audit Trail entries are archived in text format. They cannot be imported back into the Audit Trail table.

8.1.4 Archiving the Audit Trail

How to proceed?

- 1 Select the **Configuration** program part.
- 2 Click on the  symbol or the **Tools ► Audit Trail...** menu item.
The **Audit Trail** dialog window opens.
- 3 Click on the **File ► Archive...** menu item.
The **Archive Audit Trail** dialog window opens.
- 4 Enter or select the directory and file name for saving the archive file under **Save file as**.
- 5 Select the desired option (**All records** or **Records until** including date selection) under **Selection**.
- 6 Click on **[OK]**.

The selected Audit Trail data sets will be archived in text format.



Note

Archiving Audit Trail entries is identical to exporting, i.e. the Audit Trail entries are stored in text format. They cannot be imported back into the Audit Trail table. The difference between this and exporting is that the archived entries can be highlighted in the **Archived** column and then deleted.



Note

The text files generated by archiving are no longer protected and can be tampered with. If it is necessary to ensure that these files are archived in an unaltered condition, then a suitable external backup or archiving program must be used.

8.2.1 Backing up a database

General

In local server systems (**StabNet full**), the databases are stored on the drives managed by the computer and are only available to those users registered on that computer who have the appropriate access permission. In client/server systems (**StabNet multi**), the databases are stored on drives managed centrally by the server and are globally available throughout the entire client/server system, i.e. all users with the appropriate access permission can use these databases.



Each determination database has to be backed up separately. Afterwards, it is recommended that all backed-up files also be copied to an external directory or to a CD/DVD.

Backing up a database manually

- 6** Select or enter the name for the backup file. If an existing backup file is selected, it will be overwritten.



Note

If the backup directory is on a network drive, the backup date should be added to the **Backup name** field, because the backup date information is not available when the data is restored.

- 7** Click on **[Start]**.

The manual backup of the database is started and the database is backed up to the selected directory.

Backing up a database automatically

- 1** Select the **Database** program part.

- 2** Click on the  symbol or the **File ► Database manager...** menu item.

The **Database manager** dialog window opens.

- 3** Select the desired database and click on **[Properties]**.

The **Properties - Database - 'Database name'** dialog window opens for editing the database properties.

- 4** Enter a comment on the database in the **Comment** field on the **General** tab.

- 5** Enable the **Backup monitoring** check box on the **Backup** tab.

- 6** Enter an **Interval** for backup monitoring or a date for the next backup in the **Next backup** field.

- 7** Activate the **Start backup automatically** check box.

- 8** Select the directory for the backup in the **Backup directory** field.

- 9** Click on **[OK]**.

The **Properties - Database - 'Database name'** dialog window closes and the database is backed up automatically to the selected directory at the desired moment.

8.2.2 Restoring a database

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Database manager...** menu item.

The **Database manager** dialog window opens.

- 3** Click on **[Restore]** in the **Database manager** dialog window.

The **Restore databases** dialog window opens.

- 4 Select the directory in the **Backup directory** field in which the desired database was backed up.

- 5 Select the name for the desired backup file in the **Backup name** list box.

- 6** Enter the name under **Save As** under which the database is to be restored.

- 7** Click on **[Start]**.

The database restoring is started.



Note

Existing databases cannot be overwritten, i.e. they must first be deleted so that the database can be restored under its old name.

8.2.3 Backing up configuration data

How to proceed?

General

The configuration data is saved in **StabNet** in the **Configuration database**. Configuration data includes all cross-method settings for instruments, sensors, temperature coefficients as well as templates, **Security settings** (see Chapter 6.2.2.1, page 312) and **User administration** (see Chapter 6.2.1.1, page 303).

In local server systems (**StabNet full**), the configuration database is located in the program directory of the computer on which the program has been installed. In client/server systems (**StabNet multi**), the configuration database is stored centrally on the server and contains all the configuration data of all computers (clients) that are connected to this server.



Note

It is strongly recommended that the configuration database be backed up periodically.

Backing up configuration data manually

- 1 Select the **Configuration** program part.
- 2 Click on the **File ► Backup ► Manually** menu item.
The **Backup configuration data manually** dialog window opens.
- 3 Select the directory for the backup in the **Backup directory** field.
- 4 Select or enter a new name for the backup file in the **Backup name** list box. If an existing backup file is selected, it will be overwritten.



Note

If the backup directory is on a network drive, then the date of the backup should be added to the **Backup name**, because the backup date information is not available when the data is restored.

- 5** Click on **[Start]**.
- The manual backup is started and the configuration database is backed up to the selected directory.

Backing up configuration data automatically

- 1 Select the **Configuration** program part.
- 2 Click on the **File ► Backup ► Automatically** menu item.

3 Activate the **Automatic backup** check box.

5 Select the directory for the backup in the **Backup directory** field.

The **Backup configuration data automatically** dialog window closes and the configuration database will be backed up automatically to the selected directory at the desired moment.

How to proceed?

1 Exit StabNet.

The **Restore configuration data** dialog window opens.

5 Click on **[Start]**.

The restoring of the configuration database is started.

- 1 Make sure that **StabNet** is closed on all clients connected to the server and on the server itself.

- 2 Start the **ConfigRestore.exe** file in the **...\StabNet\bin** program directory on the server.

The **Restore configuration data** dialog window opens.

- 3 Select the directory in the **Backup directory** field in which the configuration database was backed up.

- 4** Select or enter a name for the desired backup file in the **Backup name** list box.

- 5** Click on **[Start]**.

The restoring of the configuration database is started.

8.2.5 Backing up methods

How to proceed?

General

Methods are stored in the configuration database and are globally accessible there for all clients. This means that in order to save methods, the configuration data must be saved manually or automatically for that reason. Another possible way is to export the methods and then to save these files outside of **StabNet**.

Backing up configuration data manually

- 1 Select the **Configuration** program part.

- 2** Click on the **File ► Backup ► Manually** menu item.

The **Backup configuration data manually** dialog window opens.

- 3** Select the directory for the backup in the **Backup directory** field.

- 4** Select or enter a new name for the backup file in the **Backup name** list box. If an existing backup file is selected, it will be overwritten.



Note

If the backup directory is on a network drive, then the date of the backup should be added to the **Backup name**, because the backup date information is not available when the data is restored.

- The manual backup is started and the configuration database is backed up to the selected directory.

1 Select the **Configuration** program part.

- The **Backup configuration data automatically** dialog window opens.

- 4** Enter an **Interval** for backup monitoring or a date for the next backup in the **Next backup** field.

- The **Backup configuration data automatically** dialog window closes and the configuration database will be backed up automatically to the selected directory at the desired moment.

1 Select the **Method** program part.

- The **Method manager** dialog window opens.

- 4** Select desired methods.

- 5** Click on the **Edit ► Export...** menu item.

The **Select directory for export** dialog window opens.

- 6** Select the desired directory for the export files and click on **[OK]**.

The selected methods are each exported in a file named '**Method name**'.rmet.



Note

The exported methods are stored uncoded but with a checksum. If a file stored in this manner is tampered with, then it cannot be imported again.

8.3 Determinations

8.3.1 Starting a determination

How to proceed?

Starting a determination

- 1 Select the **Workplace** program part.
- 2 Select the **Method** that is to be used for carrying out the determination from the desired method group.
- 3 Start the heater.
- 4 Start the gas flow.
- 5 Click on **[Start]**.

The determination is started and the live curve is displayed.

8.3.2 Searching for determinations

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Open...** menu item.

The **Open database** dialog window opens.

- 3** Select the desired database or enter the name in the **Database name** field.

- The data sets of the selected database are displayed in the **Determination overview**.

- The **Search - Database 'Database name'** dialog window opens.

- 7** Click on **[Search next]**.

The next determination containing the search term is highlighted in the **Determination overview**.

How to proceed?

2 Click on the symbol or the **File ► Open...** menu item.

The **Open database** dialog window opens.

- 4** Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**.

Filtering can now be done via quick filter or special filter in the **Determination overview** window.

- 1 Click on the symbol or the **Filter** ► **Quick filter** menu item.

After this function has been selected, the field in which the cursor is located will have a yellow background when navigating in the determination table.

- 2** Double-click on the desired field with the left mouse button.

The contents of the field selected in the table will be set as a filter criterion and this filter will be applied directly to the table.



Note

The quick filter can be applied again within the filtered table, so that the number of entries can be limited step by step.

Defining and using special filters

- 1 Click on the  symbol or the **Filter ► Special filter...** menu item.

The **Special filter - Database 'Name'** dialog window for the definition of user-specific filters opens.

- 2** Click on the **Edit ► Insert new line** menu item.

The **Edit 'New filter' filter criterion** dialog window opens.

- 3** Enter the filter criteria and confirm with **[OK]**.

- 4** Click on **[Apply filter]** in the **Special filter - Database 'Name'** dialog window.

The table is then filtered.

Defining and saving special filters

- 1 Click on the  symbol or the **Filter ► Special filter...** menu item.

The **Special filter - Database 'Name'** dialog window for the definition of user-specific filters opens.

- 2 Click on the **Edit ► Insert new line** menu item.

The **Edit 'New filter' filter criterion** dialog window opens.

- 3** Enter the filter criteria and confirm with **[OK]**.

- The **Save filter** dialog window opens.

- 6** Click on **[Save]**.

The special filter is saved with the desired name.

Using special filters

- The table is then filtered.

8.3.4 Displaying determinations of a batch

How to proceed?

- 2 Click on the symbol or the **File** ► **Open...** menu item.

The **Open database** dialog window opens.

- 4** Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**.

- The table shows the determinations of the batch.

8.3.5 Signing a determination

How to proceed?

Selecting a determination

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Open...** menu item.
The **Open database** dialog window opens.
- 3 Select the desired database or enter the name in the **Database name** field.
- 4 Click on **[Open]**.
The data sets of the selected database are displayed in the **Determination overview**.
- 5 Select the desired determination.

Signature 1



Note

Determinations can only be signed at level 1 if the user belongs to a user group with the corresponding permission (*see Chapter 6.2.1.2.3, page 306*).

- 1 Click on the  symbol or the **Determinations ▶ Sign ▶ Signature 1...** menu item.

The **Signature Level 1** window opens. If the selected determination can be signed, **Signature possible** is displayed in the **Info** field.
- 2 Enter or select **User**, **Password**, **Reason** and **Comment**.
- 3 Click on **[Sign]**.

The selected determination will be signed at level 1.

Changing evaluation parameters

- 1 Select the desired area and the desired tab in the **Evaluation - Determination from method #** subwindow.

- 2 Modify the evaluation parameters as desired.

- 3** Click on **[Recalculate]**.

The selected determinations are recalculated. The results of this recalculation are entered automatically in the **Results** subwindow.

- 4** If desired, save the modified method with **Method...** ► **Save As...** under the same name or under a new name.

If the modified method is saved under the name of an existing method then all the earlier method versions will be deleted and a new version with the number **1** will be generated.

- 5 Click on **[OK]** in the **Reprocessing** dialog window.

Each determination that has been modified by reprocessing will be saved as a new version with a version number increased by **+1** and the **Reprocessing** dialog window will be closed. This button is disabled for as long as the recalculation has not yet been triggered and if not all the selected determinations were able to be recalculated.

Editing a curve evaluation

- 1** Select the desired function in the **Curves** subwindow:

- Changing induction time

Click on the  symbol and keep the left mouse button pressed down to move the induction time controller to the required position.

- **Setting tangents manually**

Click on the  symbol and set the tangents for the manual evaluation of the induction time.

- **Deleting tangents**

- Click on the  symbol to delete the manually set tangents.

- **Automatic evaluation**

Click on the  symbol to reactivate automatic evaluation.



- 2 Click on **[Recalculate]**.

The selected determinations are recalculated. The results of this recalculation are entered automatically in the **Results** subwindow.

- 3** Click on **[OK]** in the **Reprocessing** dialog window.

Each determination that has been modified by reprocessing will be saved as a new version with a version number increased by **+1** and the **Reprocessing** dialog window will be closed. This button is disabled for as long as the recalculation has not yet been triggered and if not all the selected determinations were able to be recalculated.

8.3.11 Printing a determination report

How to proceed?

- 1** Select the **Database** program part.

- 2 Click on the symbol or the **File ► Open...** menu item.

The **Open database** dialog window opens.

- 3** Select the desired database or enter the name in the **Database name** field.

- 4** Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**. The database name is displayed in the title bar of the program, the number of currently opened databases is displayed in the left upper corner of the database symbol.



Note

A maximum of 4 databases can be opened, but only 2 can be displayed at the same time. Databases that are open at the time the program is exited will be automatically opened the next time the program is started.

- 5** Select the desired determinations.

- 6** Click on the **File ▶ Print ▶ Report...** menu item.

The **Report output** dialog window opens.

- 

If several reports are produced simultaneously as a PDF file, then an index will be automatically appended to the file name.

- ### 8.3.12 Printing a determination overview

1

- 2

3

Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**. The database name is displayed in the title bar of the program, the number of currently opened databases is displayed in the left upper corner of the database symbol.



A maximum of 4 databases can be opened, but only 2 can be displayed at the same time. Databases that are open at the time the program is exited will be automatically opened the next time the program is started.

- Click on the **File ► Print ► Determination overview...** menu item.
The **Print determination overview (PDF)** dialog window opens.
- Under **Selection**, select desired determinations for report output.
- Select the **Portrait** or **Landscape** option under **Orientation**.
- Click on **[OK]**.
The determination overview opens as a PDF file.

8.4 Databases

8.4.1 Opening a database

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Open...** menu item.
The **Open database** dialog window opens.
- 3 Select the desired database or enter the name in the **Database name** field.
- 4 Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**. The database name is displayed in the title bar of the program; the number of currently opened databases is displayed in the left upper corner of the database symbol.



Note

A maximum of 4 databases can be opened, but only 2 can be displayed at the same time. Databases that are open at the time the program is exited will be automatically opened the next time the program is started.

How to proceed?



Note

The database name must be unique in the entire client/server system.

- 6 On the **General** tab, enter a comment on the database in the **Comment** field.
- 7 On the **Access rights** tab, define access permissions for reading and editing the newly created database for the different user groups.
- 8 On the **Backup** tab, define backup monitoring and automatic backup for the newly created database.
- 9 On the **Monitoring** tab, define the monitoring of the size and number of data sets.

8.4.4 Backing up a database

How to proceed?



Note

Each determination database has to be backed up separately. Afterwards, it is recommended that all backed-up files also be copied to an external directory or to a CD/DVD.

Backing up a database manually

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Database manager...** menu item.

The **Database manager** dialog window opens.
- 3 Click on **[Backup]**.

The **Backup database 'Name'** window opens.
- 4 Select the directory for the backup in the **Backup directory** field.

- 

6 Click on **[Start]**.

Backing up a database automatically

- 2 Click on the  symbol or the **File ► Database manager...** menu item.

3 Select the desired database.

- The **Properties - Database 'Name'** dialog window opens for editing the database properties.

- 6** Enable the **Backup monitoring** check box on the **Backup** tab.

- 8** Activate the **Start backup automatically** check box.

- 9** Select the directory for the backup in the **Backup directory** field.

- 10 Click on **[OK]**.
- 11 The **Properties - Database 'Name'** dialog window closes.
The database is automatically saved in the selected directory at the desired moment.

8.4.5 Restoring a database

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Database manager...** menu item.

The **Database manager** dialog window opens.
- 3 Click on **[Restore]**.

The **Restore databases** dialog window opens.
- 4 Select the directory in the **Backup directory** field in which the desired database was backed up.
- 5 Select or enter the name for the desired backup file in the **Backup name** field.
- 6 Enter the name under **Save As** under which the database is to be restored.
- 7 Click on **[Start]**.

The database restoring is started.



Note

Existing databases cannot be overwritten, i.e. they must first be deleted so that the database can be restored under its old name.



- 5** Click on **[Open]**.

The selected method is opened in the main window in the place of a method that is already opened. The method name is displayed in the title bar of the program; the number of currently opened methods is displayed in the left upper corner of the method symbol.

- 6** Click on the **File ► Print (PDF)...** menu item.

The **Print method reports (PDF)** dialog window opens.

- 7** Select the desired report and the orientation and click on **[OK]**.

The desired report is opened as a PDF file.

8.6.11 Backing up methods

How to proceed?

General

Methods are stored in the configuration database and are globally accessible there for all clients. This means that in order to save methods, the configuration data must be saved manually or automatically for that reason. Another possible way is to export the methods and then to save these files outside of **StabNet**.

Backing up configuration data manually

- 1 Select the **Configuration** program part.

- 2** Click on the **File ► Backup ► Manually** menu item.

The **Backup configuration data manually** dialog window opens.

- 3** Select the directory for the backup in the **Backup directory** field.

- 4** Select or enter the name for the backup file in the **Backup name** field. If an existing backup file is selected, it will be overwritten.



Note

If the backup directory is on a network drive, the backup date should be added to the backup name, because the backup information is not available when the data is restored.

- The manual backup is started and the configuration database is backed up to the selected directory.

1 Select the **Configuration** program part.

- The **Backup configuration data automatically** dialog window opens.

- 4** Enter an **Interval** for backup monitoring or a date for the **Next backup**.

- The **Backup configuration data automatically** dialog window closes.

The configuration database is automatically saved in the selected directory at the desired moment.

- Click on the symbol or the **File ► Method manager...** menu item.

- 3 Select the desired method group in the **Method group** selection list.

- 4** Select the desired method.

- 5 Click on the **Edit ► Export...** menu item.
- The **Select directory for export** dialog window opens.

- 6** Select the desired directory for the export files and click on **[OK]**.
The selected methods are each exported in a file named '**Method name**'.rmet.



Note

The exported methods are stored uncoded but with a checksum. If a file stored in this manner is tampered with, then it cannot be imported again.

8.7 Method groups

8.7.1 Creating a method group

How to proceed?

- 1 Select the **Method** program part.
- 2 Click on the  symbol or the **File ► Method groups...** menu item.

The **Method groups** dialog window opens.
- 3 Click on **[New]**.

The **Properties - Method group - New Group** dialog window opens.
- 4 On the **General** tab, enter a new name for the method group in the **Name** field and a comment in the **Comment** field.
- 5 On the **Access rights** tab, assign access permissions for method groups and their methods per user group.



Note

The **Administrators** user group always has both access permissions, i.e. they cannot be disabled.

- The **Properties - Method group - New Group** dialog window is closed.

How to proceed?

- 2 Click on the  symbol or the **File ► Method groups...** menu item.

- 4** Click on **[Delete]**.

- 5** Confirm deleting with **[OK]**.

How to proceed?

- 2**

 **Note**

A database must be open in order to carry out the subsequent steps.

The **Report template - 'Name'** program window opens with an empty report template.

- 3** Click on the **File ► Page setup...** menu item in the **Report template - 'Name'** program window.

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **Tools ► Report templates ► Open...** menu item.
The **Open report template** program window opens.
- 3 Select the desired report template.
- 4 Click on **[Open]**.
The program window with the selected report template opens.
- 5 Click on the **File ► Page setup...** menu item.
The **Page setup** dialog window opens.
- 6 Define the desired settings for the report format.
- 7 Close the dialog window with **[OK]**.
- 8 Click on the **Tools ► Options...** menu item in the **Report template - 'Name'** program window.
The **Options for report templates** dialog window opens.
- 9 Define the desired settings for the report template.
- 10 Close the window with **[OK]**.

- 4** Repeat steps **1** and **2** for each desired module.

Creating new modules

- 1 Select the desired module symbol on the module bar and place it on the report template by creating a field with the left mouse button.
The properties window for the corresponding module opens automatically.
- 2 Define the desired properties for the module.
- 3 Close the properties window with **[OK]**.
- 4 Repeat steps **1** and **2** for each desired new module.
- 5 Click on the  symbol or the **File ► Save** menu item.
The report template is saved.

8.8.3 Printing a determination report

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Open...** menu item.
The **Open database** dialog window opens.
- 3 Select the desired database or enter the name in the **Database name** field.
- 4 Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**. The database name is displayed in the title bar of the program; the number of currently opened databases is displayed in the left upper corner of the database symbol.



- 5 Select the desired determinations.
- 6 Click on the **File ► Print ► Report...** menu item.
The **Report output** dialog window opens.
- 7 Under **Selection**, select desired determinations for report output.
- 8 Select the **Original report template(s)** or **Report template** option under **Report type**.
- 9 Under **Output target**, select the **Printer** and/or **PDF file** check box.



10 Click on **[OK]** in the **Report output** dialog window.

The reports of the selected determinations will be output.

8.8.4 Printing a determination overview

- 1 Select the **Database** program part.
- 2 Click on the  symbol or the **File ► Open...** menu item.
The **Open database** dialog window opens.
- 3 Select the desired database or enter the name in the **Database name** field.

- 4** Click on **[Open]**.

The data sets of the selected database are displayed in the **Determination overview**. The database name is displayed in the title bar of the program; the number of currently opened databases is displayed in the left upper corner of the database symbol.



Note

A maximum of 4 databases can be opened, but only 2 can be displayed at the same time. Databases that are open at the time the program is exited will be automatically opened the next time the program is started.

- 5** Select the desired determinations.

- 6 Click on the **File ▶ Print ▶ Determination overview...** menu item.

The **Print determination overview (PDF)** dialog window opens.

- 7** Under **Selection**, select desired determinations for report output.

- 8** Select the **Portrait** or **Landscape** option under **Orientation**.

- 9** Click on **[OK]**.

The determination overview opens as a PDF file.

Glossary

Cell constant

The resistance R of a given conductor depends on 2 parameters: the specific resistance ρ (or conductivity $1 / \rho = \chi$) and a geometric factor Z . In the case of electrolytes, this factor Z is called cell constant. The following applies:

$$R = \rho \cdot Z$$

In general, the measuring cell is calibrated by measuring the resistance of a solution with a known χ . The cell constant can then be easily deduced.

The cell constants of the conductivity measuring cells used in the Rancimat can be either entered manually or determined automatically by means of a defined standard solution.

Conductivity

Electrical conductivity is a sum parameter for dissolved, dissociated substances. The extent of conductivity depends on the concentration and the degree of dissociation of the ions as well as on the temperature and migration velocity.

Determination

Determination refers to the automatic determination of the induction time and/or stability time for a sample. In order to carry out a determination, a method suitable for the samples must be selected.

Evaluation

Process in which the evaluation data is calculated from the determined raw data.

Extrapolation

Extrapolation can be used to convert the results measured at various temperatures to the required target temperature. In addition, the factor for converting the induction time to the standard time can be determined with this procedure.

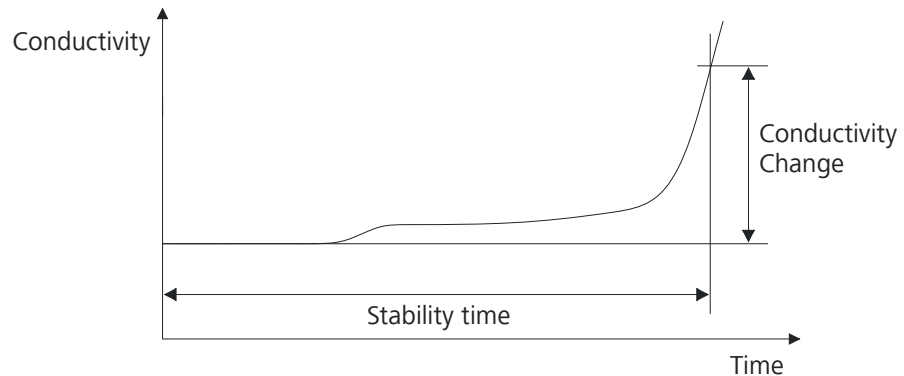
Note: The time determined for a particular sample by extrapolation to low target temperatures (e.g. 25 °C) is a purely theoretical value. The correlation between this time and e.g. the shelf life of the sample must be determined experimentally.

Results

Documentation

Stability time

The stability time is the time which is necessary in order to attain a specified **conductivity change**.



The entry of an evaluation delay or evaluation suppression does not have any effect on this evaluation mode. The time from the start point of the measurement is calculated in all cases.

Standard time

Standard time is the calculated induction time at a desired target temperature and can be determined by means of extrapolation. The standard time is calculated using the following formulas:

Q₁₀ formula

$$t(Normzeit) = Faktor \frac{T(sample) - T(arget)}{10} \times t(Ind., sample)$$

Arrhenius formula

$$t(Normzeit) = e^{\ln t(Ind., sample) - \frac{1}{T(sample)} - \frac{1}{T(target)}} \cdot \frac{slope}{T(target)}$$

Temperature coefficient

Value determined from the regression straight line of the extrapolation indicating the ratio by which the induction time changes in relation to the temperature. This value can be saved in the configuration and adopted in the method.

Temperature correction

Temperature correction indicates the deviation of the current sample temperature from the temperature in the heating block and is determined



with a calibrated, external temperature sensor. Sensors of this type are optionally available from Metrohm under the number 6.5616.000.

Index

Numbers/Symbols

21 CFR Part 11 5, 312, 313, 317, 318
 892 Professional Rancimat
 Device display 379
 Device properties 373
 Gas flow 72
 893 Professional Biodiesel Rancimat
 Device display 387
 Device properties 380
 Gas flow 72
 895 Professional PVC Thermomat
 Device display 392
 Device properties 388
 Gas flow 72

A

Absolute value 41
 Access permissions
 User groups 306
 Access rights
 Database 110
 Addition 26
 AND 30
 Application note
 Display 80
 Enter 294
 ASCII table 57
 Audit Trail
 Archive 347, 397
 Column display 340, 394
 Definition 336
 Delete 348, 398
 Export 347, 396
 Filter 394
 Filter criterion 344
 Filter selection 342
 Functions 342
 General 336
 Last filter 342
 Menu bar 337
 Monitoring 350
 Navigation bar 341
 Open 339, 394
 Organization 336
 Print 349
 Quick filter 343
 Remove filter 347

Save filter 346
 Security settings 317
 Signature permissions 306
 Special filter 343
 Table 339
 Toolbar 338
 Update 342
 User interface 336
 Verify 350

B

Backup 110
 Backup directories 322
 Configuration data ... 329, 330
 Database 110
 Backup directory
 Create 323
 Edit 323
 General 322
 Batch
 Attach determinations 178
 Batch selection 165
 Create 177
 Delete 178
 Remove determinations 178

C

Calculation algorithms 20
 Calibration data
 Calibration method 360
 Calibration temperature 360
 Cell constant 360
 Monitor 360
 Resistance 363
 Temperature 363
 Case 56
 Cell constant
 Determine automatically 85
 Enter manually 360
 Use 76, 266
 Wizard 85
 Change layout 101, 301
 Client 324
 Client/server configuration 3
 Client/server functionality 1
 Client/server installation .. 321, 324
 Client/server setting 297
 Client/server support 6

Client/server system 11, 92, 295, 303, 312, 325, 336
 Color
 Select 60
 Column display
 Audit Trail 340
 Determination overview 163
 Temperature coefficient 366
 Common logarithm 40
 Communication 4
 Conductivity
 Change display 76
 Displays 76
 Conductivity sensor
 Assignment 266
 Conductivity standard
 Value table 87
 Configuration
 Backup automatically 329
 Backup manually 330
 Configuration database 295
 Configuration information 232
 Configuration symbol . 10, 295
 Definition 295
 Devices 351
 Export 327
 Functions 298
 General 295
 Import 328
 Information on the determina-
 tion 232
 Menu bar 296
 Options 334
 Restore 331
 Subwindow 298
 Toolbar 297
 User interface 10, 295
 Configuration data 327
 Backup 401, 426
 Export 425
 Import 426
 Restore 403, 428
 Configuration database 3
 Conformity 5
 Control chart
 Detail overview 192
 Graphics parameters 152
 Limit values 153
 Manage templates 150

Column display	163
Data display	162
Data set selection	167
Filter selection	164
Function	167
General	162
Navigation bar	165
Print	168, 419, 443
Table navigation	166
Update	162, 167
Device	
Column display	353
Configuration	351
Delete	353
Device name 351, 373, 381,	388
Device serial number 373,	381, 388
Device table	351
Device type 351, 373, 381,	388
Display	379, 387, 392
Export	327
General	351
GLP	377, 384, 390
Import	328
Initialize	351
Print list of devices	354
Program version 373, 381,	388
Properties	354
Remarks	373, 381, 388
Start-up	373, 381, 388
Status	351
Subwindow	351
Temperature correction table	
.....	376, 383, 389
USB devices	351
Dialog language	334
Division	29
Documentation	
Report	281
E	
Electronic signature	318
E-mail	
Edit template	63, 332
Export template	327
Login	320
Manage templates	62, 332
Send	62
E-Mail	
Import template	328
Equal to	33

- Error (Function) 57
 Evaluation
 Evaluation type 226
 Manual 213
 Exponential function 39
 Export
 Audit Trail 347
 Configuration data ... 327, 425
 Determinations 184, 411
 Export template 155
 Method 432
 Export template
 Edit 156
 Export 327
 Field selection 158
 Import 328
 Manage 155
 Options for CSV format 159
 Options for measuring point list
 160
 Properties 156
 Request at file export 160
 Selection 184
 Extrapolation
 Calculation 215
 Calculation in accordance with
 Arrhenius 218
 Calculation in accordance with
 Q_{10} 215
 Selection 220
 View 220
- F**
-
- FDA
 Login/Password protection
 313
 Security settings 312, 317
 Signatures 318
 Filter
 Delete 174
 Determinations 172
 Filter criterion 175
 Filter selection 164
 Last filter 172
 Quick filter 172
 Save 174
 Special filter 173
 Fixed report 144
 Form report 117
 Formula editor
 ASCII table 57
 Calculation algorithms 20
 Determination variables 24
 Function buttons 19
- Functions 25
 Input field 19
 Operators 25
 Overview 19
 Result variables 23
 System variables 25
 Variables 22
 Fraction 42
 Function
 Absolute value 41
 Case 56
 Common logarithm 40
 Configuration 298
 Database 99
 Determination overview 167
 Error 57
 Exponential function 39
 Fraction 42
 Integer 42
 Natural logarithm 40
 NumberToText 48
 NumberToTime 48
 Overview 25
 Quantiles of the Student's t-dis-
 tribution 44
 Rounding integer 43
 Sign 43
 Square root 41
 SubText 54
 TextPosition 53
 TextToNumber 49
 TextToTime 49
 Time() 45
 Time(Date) 45
 Time(Date+Time) 46
 TimeToNumber 50
 TimeToText 51
 Tinv 44
 Trim 55
- G**
-
- Gas flow
 Properties 374, 381
 Switch off 72
 Switch on 72
 GLP 377, 384, 390
 Greater than 34
 Greater than or equal to 35
 Group field
 Group field 145
- H**
-
- Heater
 Switch off 71
 Switch on 71
 Heating block temperature 71
 Help 6
 History
 Determinations 186
 Hyperlink 60
- I**
-
- Import
 Configuration data ... 328, 426
 Determinations 185, 413
 Method 432
 Induction time 271
 Definition 271
 Evaluate 271
 Set manually 213
 Set with tangent 213
 Information
 Comment 233
 Configuration 232
 Determination 226
 Messages 233
 Method 229
 Overview 226
 Sample 231
 Instrument
 Integration 2
 Integer 42
 Round 43
 Internal pump 374, 381
- L**
-
- Last filter
 Audit Trail 342
 Determinations 172
 Less than 36
 Less than or equal to 37
 License
 Add 325
 Display 325
 License code 325
 Live curve 76
 Logarithm 40
 Login
 Automatic logout 13
 General 11
 Login 12
 Manual logout 12
 Security settings 313
 Send e-mail 320
 Logout
 Automatic logout 13
 Manual logout 12

Multiplication 28

Natural logarithm	40
Navigation	
Audit Trail	341
Determination overview	166
Report template	130
Not equal to	38
NumberToText	48
NumberToTime	48

Object-oriented database	3
Online help	6
Operation	2
Operator	
Addition	26
AND	30
Division	29
Equal to	33
Greater than	34
Greater than or equal to	35
Less than	36
Less than or equal to	37
Multiplication	28
Not equal to	38
OR	32
Overview	25
Potentiation	30
Subtraction	27
Options	
Configuration	334
Dialog language	334
Save	334
OR	32

Change	13
Entry	12
General	11
Security settings	313
Start password	13, 310
Password protection	11, 313
PDF output	335
Potential	30
Print	168
Audit Trail	349
Determination overview	168, 419, 443
List of devices	354
List of temperature coefficients	367
Method report	252

- Report 187
- Priority rules 26
- Program administration
- Backup directories 322
 - Clients 324
 - General 321
 - Licenses 325
- Program part
- Configuration 10, 295
 - Database 92
 - Method 10, 243
 - Workplace 9, 65
- Program parts 8
- Overview 8
- Program versions 6
- Q**
- Quick access 296, 298
- Quick filter
- Audit Trail 343
 - Determination overview 172
- R**
- Reason for modification
- Determination 214
- Report
- Document 281
 - Print 187, 418, 442
- Report template
- Comment 131
 - Copy 116
 - Create 439
 - Create new 117
 - Curve field 149
 - Data field 135
 - Date field 137
 - Default font 131
 - Define sections 126
 - Delete 116
 - Edit 118, 441
 - Edit modules 128
 - Export 116
 - Fixed report 144
 - Form report 117, 126
 - Functions 124
 - General 118
 - Grid 131
 - Image field 146
 - Import 116
 - Insert modules 128
 - Insert pages 127
 - Line 147
 - Manage 115
 - Menu bar 119
 - Module bar 122
 - Navigate 127
 - Number of pages 142
 - Open 117
 - Options 131
 - Overview 118
 - Page margins 124
 - Page number 140
 - Page preview 130
 - Page setup 124
 - Paper size 124
 - Rectangle 148
 - Rename 116
 - Save 132
 - Tabular report 117, 126
 - Text field 133
 - Time field 138
 - Toolbar 121, 122
 - Unit 131
 - User interface Editor 119
 - Zoom 130
- Reprocess 202
- Curve 213
 - Display results 211
 - Edit evaluation parameters 211
 - General 202
 - Procedure 415
 - Reprocessing table 206
 - Reprocessing window 204
 - Rules 203
 - Sample data 208
- Reprocessing table 206
- Reprocessing window 204
- Close 202
 - Open 202
- Restore
- Configuration data 331
 - Database 113
- Result
- Define 275
 - Display 234
 - Monitor 278
 - Select 278
 - Selection 189
 - Statistics 276
 - User-defined 274
 - Variables 23
- Result variable 23
- S**
- Sample data
- Information 231
 - Text templates 91
- Variables 23
- Sample data variable 23
- Sample temperature 266
- Save
- method 430
- Search
- Determinations 169
- Security settings
- Audit Trail 317
 - Default reasons 319
 - Export 327
 - Import 328
 - Login 313
 - Modifications 317
 - Overview 312
 - Password protection 313
 - Signatures 318
 - Test login 317
- Sensor 354
- Calibration data 360
 - Edit properties 358
 - Export 327
 - General 354
 - Import 328
 - Limit values 364
 - Monitoring 358, 364
 - Parameters 358
 - Sensor information 232
 - Sensor table 355
 - Standard sensors 354
 - Subwindow 354
- Sign 43
- Delete signatures 2 18, 183, 262
 - Determination 409
 - Display signatures 262
 - Method 433
 - Procedure 15
 - Rules 14, 179, 258
 - Security settings 318
 - Signature 1 15, 179, 259
 - Signature 2 17, 181, 260
 - Signature permissions 306
- Signature
- Display signatures 182
- Single determination
- Start 406
- Special filter
- Audit Trail 343
 - Determinations overview . . 173
- Square root 41
- Stability time 273
- Definition 273
 - Evaluate 273

StabNet 1.0