

StabNet 2.0



Manual

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StabNet 2.0

Manual

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1 Introduction

1.1 Welcome to StabNet

Introduction



StabNet

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

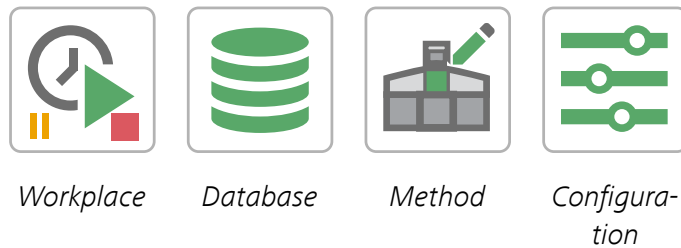
Overview of the main program features

- *Easy-to-operate and easily configurable user interface*
- *Simple integration of instruments*
- *Convenient method editor*
- *Database-based program*
- *Wide range of import and export functions*
- *FDA compatibility in accordance with 21 CFR Part 11*
- *Comprehensive online help*
- *Program versions*

Operation

Introduction

The modern **user interface** makes it easy for users to find their 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 hidden. The menu bar is in the upper part of the screen. It is also possible for the individual commands to be hidden, depending on the access permissions.

In the center of the screen, you can find 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. As a result, users see only those windows or buttons they actually need for their work. This reduces the introductory period for routine users to a minimum. Incorrect operation as a result of overcrowded screens is 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.

Device 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 247*)
- Method manager (*see chapter 5.3.1, page 254*)
- 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 247*)
- Plausibility check for methods (*see chapter 5.2.5, page 250*)

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 represent a simple measurement system. **StabNet** is, however, scalable and grows with increasing operational requirements.

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 provide a quick overview of the chronological sequence of the results.

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

Overview of functions

- Object-oriented database (*see chapter 6.2.3.1, page 322*).
- 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 168*)
- Access permissions control for every database (*see chapter 4.3.5.3, page 110*)
- Automatic database backup (*see chapter 4.3.5.4, page 111*).

- Quick result overview or specially designed control charts (*see chapter 4.5.2.15, page 187*)
- Curve overlay (*see chapter 4.5.2.16, page 196*).
- Reprocessing of 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 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 155*).
- 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 already at the development and programming stage of 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 access the user management. Access to the software is password-protected and the **StabNet** or Windows login can be selected.

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

Data management is **version-controlled**, and all data is 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.

Conformity-relevant properties of StabNet

- Completely developed and validated with conformity in mind
- Central user administration (*see chapter 6.2.1.1, page 304*)
- 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 314*)
- 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 185*)
- Traceability thanks to detailed Audit Trail (*see chapter 6.4.1.1, page 335*).

Introduction

	StabNet 2.0 Full
Product	6.6068.202
Maximum number of instruments per PC	4
Conformity functions	•
User management	•
Security settings	•
Traceability ("Audit Trail")	•
Client/server support	
Number of licenses	1
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 access** 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 icons and formatting are used in this documentation:

6.5.2 Device table	Link to another help topic that contains information about 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.
[Continue]	Button
Σ	Formula editor Formulas can be entered in fields with this icon. The formula editor opens when you click on the (<i>see chapter 2.4, page 19</i>) icon.
1	Instruction step Carry out these steps in the sequence shown.
	Caution This symbol draws attention to possible damage to devices or device parts.



This symbol highlights additional information and tips.



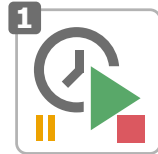
NOTICE

Access to the individual program parts can be deactivated in the user administration. In this case, the corresponding icons 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 104*).

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 249*).

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 Login / password protection

2.2.1 General information on login / password protection

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

Login into StabNet

StabNet can be configured so that all users have to log in with their **user name** and **password**, and this data is automatically checked. This requires a **User administration** to be set up and the corresponding **Security settings** to be made. This data is saved in the configuration database.

FDA-compliant settings

If you are to be in compliance with the FDA, the **Settings according to 21 CFR Part 11** in the **Security settings** dialog window must be activated according to 21 CFR Part 11 by activating the check box **Settings according to 21 CFR Part 11**. The following conditions will then be complied with:

- A **login with user name and password** is required each time the program is started.
- **User names** must be **unique**. Users entered once cannot be deleted.
- **Password administration** is carried out in **StabNet**.
- **User names** must be **unique**. Users cannot be deleted once they have been entered.
- **Passwords** must be **unique** for each user. None of the expired passwords already used once by the user may be reused.
- Passwords must comprise a **minimum number of characters**.
- Passwords must be changed after a defined **validity period**.
- The **number of login attempts** for entering the password is limited. If this number is exceeded, the user will automatically be set to **inactive** status. An e-mail can be sent automatically at the same time to the administrator.

Actions

If the login is activated, the following actions can be performed:

- *Logging in at program start*
- *Logging out manually*

- *Logging out automatically*
- *Changing password*

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
-------	---------------



NOTICE

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 311) assigned by the administrator. Afterwards, the **Change password** window, in which a new password needs to be entered, will open automatically.

[Change password]

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

[Cancel]

The login is canceled and the program is terminated.

2.2.3 Logging out manually

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

A logged-in user can log out at any time with the **File ► Logout...** menu item. 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**, then the user will be logged out automatically after a defined waiting time no operating functions have been performed in the meantime 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**



NOTICE

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.



NOTICE

The password always needs to be changed before the **Passwords expire every** period 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:

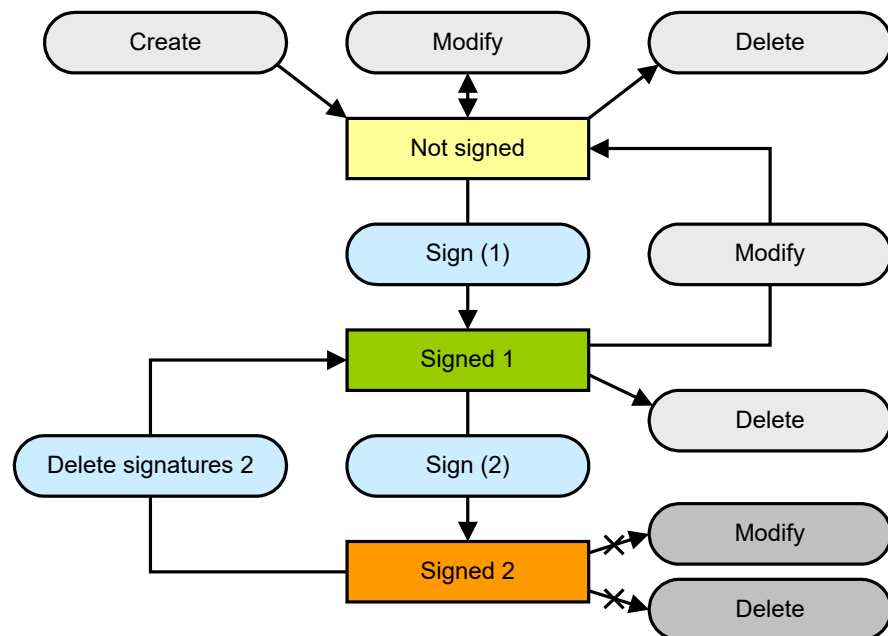
- **Signature levels**
Methods and determinations can be signed at two levels (Signature Level 1 and Signature Level 2) by entering the user name and password.
- **Multiple signing**
Methods and determinations can be signed several times at each level. All signatures are saved and documented in the Audit 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.



NOTICE

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
-----------	--	--------------------------

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.

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.



NOTICE

Methods or determinations can only be signed at level 1 if the user belongs to a user group with the corresponding permission.

2.3.4 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.



NOTICE

Methods or determinations signed at level 2 are **locked**, i.e. they can neither be modified nor deleted. In order to be able to edit such methods or determinations again, the signatures on level 2 must first be deleted.

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 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.

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.



NOTICE

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'
-----------	--------------------------------------

Comment

Entry of a comment on the signature.

[Delete]



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

The formula editor serves as a support when entering formulas for result calculation. It has an automatic **syntax check**, which is activated when the formula is applied. The general rules of priority apply for the calculation operations.

- **Input field**
Entry of the calculation formula (*see chapter 2.4.1, page 19*).
- **Buttons**
Buttons for the quick entry of operators, parentheses and brackets (*see chapter 2.4.2, page 20*).
- **Variables**
Selection of the variables available for the calculation formula (*see chapter 2.4.3, page 22*).
- **Operators/functions**
Selection of the operators and functions available for the calculation formula (*see chapter 2.4.4, page 25*).
- **Description**
Description of the selected variables, operators or functions.

Dialog window: **Formula editor**

Entry via keyboard

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- **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 buttons

Mathematical operators and parentheses or brackets can simply be inserted in the formula using the corresponding buttons. A space is automatically inserted before and after the character.

	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
	Potentialiation		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 with a double-click or with **[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 as well as the 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

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

Relative standard deviation (in %)

$$S_{rel_k} = 100 \cdot \frac{S_{abs_k}}{\bar{x}_k}$$

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 displayed result of **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 **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".



NOTICE

The above losses with respect to accuracy caused by rounding off in the range of the maximum reliable places are only theoretically relevant. Most of the time they are lower by several orders of magnitude than, for 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 in reports 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').



When using variables, always observe their data type (**Number**, **Text** or **Date/Time**).

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	–

Operand1	Operand2	Result	Example	Remark
Text	Text	Text	"Metrohm" + "AG" = "Metrohm AG"	If the maximum permissible length (65,536 characters) of the character string is exceeded by addition of the operands, the surplus characters will be removed from the second operand.
Time	Time	Number	Time(1998;04;06) + Time(1964;02;03) = 59300.875 (for UTC+1)	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" = "1.2Metrohm"	–
Text	Number	Text	"Metrohm" + 1.2 = "Metrohm1.2"	–
Number	Time	Number	2.0 + Time(1999;11;7) = 36472.96 (for UTC+1)	Result: Number of days calculated from December 1899, dependent on the system time
Time	Number	Number	Time(1999;10;7) + 2.0 = 36441.92 (for UTC+2)	Result: Number of days calculated from December 1899, dependent on the system time
Text	Time	Text	"Metrohm" + Time(1999;10;7) = "Metrohm1999-10-07 00:00:00 UTC+2"	Before the operation, the operand of the Date/Time type is converted to Text .
Time	Text	Text	Time(1999;01;7) + "Metrohm" = "1999-01-07 00:00:00 UTC +1Metrohm"	The same rules apply here as for the previous operation.

2.4.4.2.2 Subtraction

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 = –1.8	–
Text	Text	Text	"Metrohm" – "AG" = invalid	This operation is not allowed.
Time	Time	Number	Time(1998;01;06) – Time(1964;12;03) = 12087.00 (for UTC+1)	Result: Number of days calculated from December 1899, dependent on the system time

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

Operand1	Operand2	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 (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 = "1.2" --> 1 1.2 = "Metrohm" --> 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).

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 Number . 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" --> 0 1.23 > "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 (see chapter 2.4.4.10, page 57). 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	(see chapter 2.4.4.6.2, page 45)
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 (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.

2.4.4.4.4 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	$5 < 4 \rightarrow 0$ $4 < 5 \rightarrow 1$	–

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" $\leq$ "AG" $\rightarrow 0$	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) $\leq$ Time(1964;02;03) $\rightarrow 0$	(<i>see chapter 2.4.4.6.2, page 45</i>)
Operands of a different type:				
Number	Text	Number	2 $\leq$ "1.2" $\rightarrow 0$ 1.2 $\leq$ "Metrohm" $\rightarrow 1$	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" $\leq$ 1.2 $\rightarrow 0$	The same rules apply here as for the previous operation.
Number	Time	Number	2.0 $\leq$ Time(1999;10;07) $\rightarrow 1$	Before the comparison, the operand is converted from Date/Time to a Number .
Time	Number	Number	Time(1999;10;07) $\leq$ 2.0 $\rightarrow 0$	The same rules apply here as for the previous operation.
Text	Time	Number	"Metrohm" $\leq$ Time(1999;10;07) $\rightarrow 0$	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) $\leq$ "Metrohm" $\rightarrow 1$	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:				

Oper- and1	Oper- and2	Result	Example	Remark
Number	Number	Number	5 <> 4 --> 1 5 <> 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!
Time	Time	Number	Time(1998;04;06) <> Time(1964;02;03) --> 1	(<i>see chapter 2.4.4.10, page 57</i>)
Operands of a different type:				
Number	Text	Number	1.2 <> "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 --> 1	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) <> 2.5 --> 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" --> 1	The same rules apply here as for the previous operation.

2.4.4.5 Arithmetical functions

2.4.4.5.1 Exponential function

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

Syntax

y = Exp(number)

Calculates e^{number} . Other notation for $y = e^{(\text{number})}$, whereby e is the Euler number ($e = 2.71828\dots$).

Parameters

Number Exponent

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**.

Examples**Log(10) = 1****Log('CV.AverageTemp')** = Common logarithm of the value of the common variable **CV.AverageTemp****2.4.4.5.4 Square root**Dialog window: **Formula editor ► Operators/Functions****Syntax****y = Sqrt(number)**Returns the square root of the entered number. Alternative notation for y = $\sqrt{\text{number}}$ or $y = \sqrt[2]{\text{number}}$.**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**.**Examples****Sqrt(33) = 5.745****Sqrt('CV.AverageTemp')** = Square root of the value of the common variable **CV.AverageTemp****2.4.4.5.5 Absolute value**Dialog window: **Formula editor ► Operators/Functions****Syntax****y = Abs(number)**

Returns the absolute value of the entered number, i.e. the value of the number irrespective of its sign.

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****Abs(-55.3) = 55.3****Abs('CV.AverageTemp')** = Value of the common variables **CV.AverageTemp** without signs

2.4.4.5.6 Fraction

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

Syntax

y = Frac(number)

Returns the fraction of the entered number.



NOTICE

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

2.4.4.5.8 Rounding integer

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

Syntax

y = Round(number)

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



NOTICE

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

Sign(26.115) = 1

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

2.4.4.5.10 Quantiles of the Student's t-distribution

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

Syntax

$$t_s = \text{Tinv}(\text{Probability}, \text{Degrees of freedom})$$

Calculates the quantiles of the Student's t-distribution for two-sided intervals.

The result describes the half interval length as a multiple of the standard deviation of a sampling totality with given **degrees of freedom** within which, with the indicated **probability**, the mean value of the distribution lies, when the interval is centered on the mean value of the sampling totality.

Parameters

Probability

Number type, value range: 0 - 1. Direct entry as number or as formula providing a number. If the type of value is non-permitted, then the result will become **invalid**. This is to indicate the probability with which the unknown mean value of the t-distributed result is expected to lie within the two-sided interval.

Degrees of freedom

Number type, value range: 1 - n. Direct entry as number or as formula providing a number. If the type of value is non-permitted, then the result will become **invalid**. The number of independent samplings for calculating the standard deviation, reduced by the number of adjusted parameters for the model to which the standard deviation refers, must be specified as degrees of freedom (Degrees of freedom = Number of samplings – Number of parameters).

Examples

Tinv(0.95; 9) = 2.26: With a 10-fold determination (e.g. of a titer) half the interval length corresponds to 2.26 times the standard deviation.

Calculation of the confidence interval for a mean value of sampling: A variance-homogenous sampling with a range n for a normally distributed quantity with an expected value μ has the mean value x_m , the standard deviation s and the freedom degrees $\nu = n - 1$. The half interval length $t_s \cdot s/\sqrt{n}$ then indicates how high the absolute difference between the mean value x_m and the expected value μ maximally is within the given probability. The **confidence interval** is the full interval length, centered to the mean value: $\mu = x_m \pm t_s \cdot s/\sqrt{n}$.

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



NOTICE

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



NOTICE

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



NOTICE

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

hour 0 - 23

minute 0 - 59

second 0 - 59

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



NOTICE

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



NOTICE

UTC = 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;06;02;10;30;25) = 2004-06-02 10:30:25 UTC +2
(dependent on the system time)

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

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



NOTICE

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**.



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.

Time

Examples

TimeToNumber(Time(1999;12;31;23;59;59)) = 36525.95832

2.4.4.7.6 TimeToText

Syntax

Returns the time entered as **Text**.

Returns the time entered as **Text** in the required format.

Time

Format

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Characters	Meaning	Example
y	two-digit year number	03
yyyy	four-digit year number	1999
M	One or two-digit month number	4, 12
MM	Two-digit month number	04, 12
MMM	Month name short form	Jul, Aug
MMMM	Month name	July, August
d	one or two-digit day number	2, 25
dd	two-digit day number	02, 25
h	one-digit or two-digit hour number (1 - 12 AM/PM)	5, 11
hh	two-digit hour number (1 - 12 AM/PM)	05, 11
H	one-digit or two-digit hour number (0 - 23)	8, 17
HH	two-digit hour number (0 - 23)	08, 17
m	one or two-digit minute number	2, 25
mm	two-digit minute number	02, 25
s	one or two-digit second number	3, 55
ss	two-digit second number	03, 55
E	Weekday short form	Mon, Tue, Wed
EEEE	Weekday	Monday, Tuesday
D	one, two or three-digit number of the day in the year	2, 35, 142
DD	two or three-digit number of the day in the year	02, 35, 142
DDD	three-digit number of the day in the year	002, 035, 142
F	one-digit number of the weekday in the month, e.g. the 2nd Monday in May	2
w	one or two-digit number of the week in the year	5, 25
ww	two-digit number of the week in the year	05, 25
W	one-digit number of the week in the month	3
a	Format AM/PM	AM, PM

Characters	Meaning	Example
'	Quotation marks used for entering any text	
"	Entry of '	'



NOTICE

If you wish to 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 last example below).

Examples

TimeToText(Time()) = current date and current time (system) as **Text**

TimeToText(Time(2004;05;04)) = 2004-05-04 00:00:00 UTC+2
(dependent on the system time)

TimeToText('CV.TestTime') = Value of the common variable (type **Time**)
as **Text**

```
TimeToText(Time(2000;12;31);"EEEE", 'dd'. 'MMMM' 'yyyy') =  
Sunday, December 31, 2000
```

```
TimeToText(Time(1997;05;22);"M'/'d'/'yyyy', 'ha") = 5/22/1997,  
12PM
```

2.4.4.8 Text functions

2.4.4.8.1 TextPosition

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

Syntax

y = TextPosition(Text ; sample text)

Returns the **Index** which indicates at which point the **sample text** appears for the first time in the **Text**. The numbering of the index begins at **1**!

Parameters

Text

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

Sample text

The parameter can be indicated either directly or as a variable of the **Text**, **Number** or **Date/Time** type. If the types of the two parameters do not coincide, the type is converted from **Sample text** to **Text**. If the **Sample text** is not included in the **Text**, the status **invalid** is returned.



NOTICE

Entries of the **Number** type are always provided with a decimal place.

Example: **TextPosition("12345";3) = invalid**, as the 3 is converted to 3.0 before the operation and this is not included in the text.

Examples

TextPosition("Citric acid";"acid") = 8, the word "**acid**" occurs in the text from index number 8 onwards

TextPosition("Citric acid";"Acid") = invalid, the word "Acid" (capitalized) does not occur in the text

TextPosition("Citric acid";"salt") = invalid, the word "salt" does not occur in the text

TextPosition(Time(2004;05;05);"5") = 7

TextPosition(3362.14;"6") = 3

TextPosition('MV.ID2';"Carbonate") = Index in which the word part "Carbonate" begins for the first time in the ID2

2.4.4.8.2

SubText

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

Syntax

y = SubText(Text ; Position ; Length)

Returns that part of the text from **Text** which begins at the index **Position** and which has the length **Length**.

Parameters

Text

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

Position

The numbering of the **Position** begins at **1**. 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 a type conversion is not possible or the position does not exist, the result of this operation is returned as **invalid**.

Length

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 a type conversion is not possible or the length indicated here is greater than the length of the subtext, **invalid** will be returned.

Examples

SubText("Citric acid";8;4) = acid

SubText("Citric acid";8;5) = invalid, only four characters exist from position 8 onwards

SubText('MV.ID2';1;3) = the first three characters of the identification 2

2.4.4.8.3 Trim

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

Syntax

y = Trim(Text)

Returns the **Text** without spaces before and after.

y = Trim(Text ; sample text)

Returns the **Text** without **Sample text**.

Parameters

Text

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

Sample text

The parameter can be indicated either directly or as a variable of the **Text**, **Number** or **Date/Time** type. If the types of the two parameters do not coincide, the type is converted from **Sample text** to the **Text** type.



NOTICE

Entries of the **Number** type are always provided with a decimal place.

Example: **Trim("12345";3) = 12345**, as the 3 is converted to 3.0 before the operation and this is not included in the text.

Examples

Trim(" Citric acid ") = "Citric acid"

Trim("Citric acid";"acid") = Lemons

Trim("Citric acid";"salt") = Citric acid

2.4.4.9 Miscellaneous functions

2.4.4.9.1 Case

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

Syntax

y = Case(Condition ; value_true ; value_false)

y = Case(Condition ; value_true ; value_false ; value_error)

Returns **value_true** if the condition is true. Otherwise **value_false** is given. If an error occurs in the condition (result **invalid**), **value_error** is given.

Parameters

Condition	Number
-----------	--------

Any variable (**Number** type) can be entered here, or a relational or logic operation can be performed whose operators can be transferred either directly or as a variable. These can be of the **Text**, **Number** or **Date/Time** type.

Value_true

If **condition** $\neq 0$, this parameter is saved as a result of the function. This parameter can be transferred either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. Entire operations can also be transferred here.

Value false

If **condition = 0**, this parameter is saved as a result of the function. This parameter can be transferred either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. Entire operations can also be transferred here.

Value_error

If **condition = invalid**, this parameter is saved as a result of the function. This parameter can be transferred either directly or as a variable and can be of the **Text**, **Number** or **Date/Time** type. Entire operations can also be transferred here.

Examples

Case('MV.ID1' = "";"ID1 empty";"ID1 not empty") = if no entry has been made for ID1 in the run window, the text **ID1 empty**, otherwise **ID1 not empty** will be saved in the result.

Case('RS.IntermediateRes' > 5.5;"Intermediate result too high";'RS.IntermediateRes' * 26.5;"Error occurred") = If the result "IntermediateRes" is greater than 5.5, then the text "**Intermediate result too high**" will be written into the result, otherwise the intermedi-

2.4.4.9.2 Error

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

Syntax

y = Error(value)

Returns **+1** if the **value is invalid** (error) or **0** if the **value is valid**. This function can be used e.g. to check variables for their existence or validity.

Parameters

Value

The variable to be tested.

Examples

Error('RS.IntermediateRes') = 0: the intermediate result was able to be calculated.

Error('RS.IntermediateRes') = 1: the intermediate result is invalid.

2.4.4.10 ASCII table

Dialog window: **Formula editor**

Only printable characters are listed in the table below:

ASCII value (dec)	Characters	ASCII value (dec)	Characters	ASCII value (dec)	Characters
32	Space	64	At sign (@)	96	Grave accent (`)
33	Exclamation mark (!)	65	A	97	a
34	Quotation mark (")	66	B	98	b
35	Hash mark (#)	67	C	99	c
36	Dollar (\$)	68	D	100	d
37	Percent (%)	69	E	101	e
38	Ampersand (&)	70	F	102	f
39	Apostrophe (')	71	G	103	g
40	Opening paren- theses ()	72	H	104	h
41	Closing paren- theses ())	73	I	105	i

ASCII value (dec)	Characters	ASCII value (dec)	Characters	ASCII value (dec)	Characters
42	Multiplication sign (*)	74	J	106	j
43	Addition sign (+)	75	K	107	k
44	Comma (,)	76	L	108	l
45	Minus sign (-)	77	M	109	m
46	Period (.)	78	N	110	n
47	Slash mark (/)	79	O	111	o
48	0	80	P	112	p
49	1	81	Q	113	q
50	2	82	R	114	r
51	3	83	S	115	s
52	4	84	T	116	t
53	5	85	U	117	u
54	6	86	V	118	v
55	7	87	W	119	w
56	8	88	X	120	x
57	9	89	Y	121	y
58	Colon (:)	90	Z	122	z
59	Semicolon (;)	91	Square parentheses ([])	123	Curly parentheses ({})
60	Less than (<)	92	Backslash (\)	124	Vertical stroke ()
61	Equals (=)	93	Square parentheses ([])	125	Curly parentheses ({})
62	Greater than (>)	94	Circumflex (^)	126	Tilde (~)
63	Question mark (?)	95	Underscore (_)		

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*).



NOTICE

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.

The scroll bar in the center of the dialog window is synchronized with the activated field of the color setting. **Hue**, **Saturation** and **Brightness** can thus be set very quickly.

The hue, saturation and brightness of the color can be set independently of one another.

Hue

Saturation

Brightness

The RGB values for the selected color are displayed.

Input range	0 to 255
-------------	-----------------

A sample with the color set is displayed in the lower part of the dialog window.

2.6 E-mail

2.6.1 Sending an e-mail

Dialog window: **[E-mail...] ► Send e-mail**

E-mail template

Selection of the template for sending e-mails.

Subject

Subject to describe the message.

Message

Text of the message which is sent to the address defined under **[E-mail...]**. Clicking on the  icon opens the dialog window of the text editor (*see chapter 2.5.2, page 59*).

2.6.2 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 with the selected e-mail template.

Selection	SMTP SMTP after POP
Default value	SMTP

POP server

Address of the POP mail server.

Entry	3 - 200 characters
-------	--------------------

Port

Port number of the POP mail server.

Input range	1 to 65536
Default value	110

User

Name of the user for accessing the mail server. The name need not match the Windows user name.

Entry	2 - 50 characters
-------	-------------------

Password

Password for accessing the mail server. This password need not match the Windows password.

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

3 Workplace

3.1 Workplace - General

3.1.1 Workplace - Definition

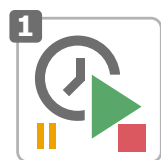
Program part: **Workplace**

In **StabNet**, **Workplace** is defined as the program part in which up to 4 workplaces can be opened next to one another for the simultaneous, independent running of up to 8 single determinations per workplace. An instrument from the configuration must be assigned to each workplace; however, a particular instrument can be assigned to only one workplace.

3.1.2 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.

3.1.3 Workplace - Menu bar

3.1.3.1 Workplace - File menu

Program part: **Workplace**

Workplace ►	
 New...	Opens a new workplace (<i>see chapter 3.2.1, page 68</i>).
 Close	Closes the selected workplace (<i>see chapter 3.2.3, page 69</i>).
 Logout...	Logs out user (<i>see chapter 2.2.3, page 12</i>).
Exit	Exits the program.

3.1.3.2 Workplace - View menu

Program part: **Workplace**

✓ Toolbar	Switches the toolbar display on/off (see chapter 3.3.2, page 70).
------------------	---

3.1.3.3 Workplace - Tools menu

Program part: **Workplace**

Actions at the end of the determination for ► Block A Block B  Modify stop criteria ► Block A Block B	Define an action (switch off heater and/or reduce gas flow) at the end of the determination for block A (<i>see chapter 3.3.3, page 70</i>). Define an action (switch off heater and/or reduce gas flow) at the end of the determination for block B (<i>see chapter 3.3.3, page 70</i>). Change the stop criteria for block A during the measurement (<i>see chapter 3.3.13, page 79</i>). Change the stop criteria for block B during the measurement (<i>see chapter 3.3.13, page 79</i>).
Determine temperature correction... ► 	

Block A	Carry out a temperature correction determination with block A (<i>see chapter 3.4, page 80</i>).
Block B	Carry out a temperature correction determination with block B (<i>see chapter 3.4, page 80</i>).
 Determine cell constant... ►	
Block A	Carry out a determination of the cell constant with Block A (<i>see chapter 3.5, page 84</i>).
Block B	Carry out a determination of the cell constant with Block B (<i>see chapter 3.5, page 84</i>).
 Timer...	Define automatically executable actions (<i>see chapter 3.6, page 88</i>).
Text templates...	Create text templates for the sample data (<i>see chapter 3.7, page 90</i>).

3.1.3.4 Help menu

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

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

3.1.4 Workplace - Toolbar

Program part: **Workplace**

	Creates a new workplace (<i>see chapter 3.2.1, page 68</i>).
	Closes the workplace (<i>see chapter 3.2.3, page 69</i>).
	Defines automatically executable heater starts (<i>see chapter 3.6.1, page 88</i>).
	Logs out user (<i>see chapter 2.2.3, page 12</i>).
	Opens StabNet Help.

3.1.5 Workplace - Functions

Program part: **Workplace**

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

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

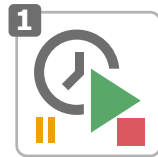
Selection of the color for the title bar of the subwindow and the status symbol for the newly opened workplace in the status bar.

Selection	green ochre blue brown
Default value	green

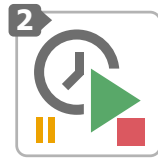
3.2.2 Selecting workplace

Program part: **Workplace**

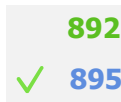
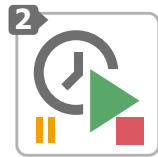
The number of currently opened workplaces is displayed in the upper left-hand corner of the workplace symbol. If 2 or more workplaces are opened, then the workplace that is to be displayed in the main window can be selected by means of the workplace symbol.



One workplace is opened and is displayed in the main window.



Two workplaces are opened but only one workplace is displayed in the main window.



A menu with the names of the currently opened workplaces is displayed by clicking with either the left or right mouse button on the workplace symbol. The workplace displayed in the main window is marked with a checkmark. Clicking on the desired workplace will cause it to be displayed in the main window in place of the previously selected one.

3.2.3 Closing a workplace

Menu item: **Workplace ► File ► Workplace ► Close**

The selected workplace is closed with this menu item.

3.3 Measuring position display

3.3.1 Measuring position display - General

Main window: **Workplace**

The workplace main window contains the measuring position 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 position.
- *3.3.9Carrying out a determination*
Starting/stopping determinations, status display, recording of the measurement curve.
- *3.3.10Live 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 84).

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 with the cursor, then the name of the current method group will appear as the **Group: 'Group name'** tooltip in the event that other groups exist besides the main group.

Selection	'Method name'
-----------	---------------



Open the **Open method** dialog window for the extended method selection (see chapter 5.2.2, page 247). If a method is selected in this window from a method group other than the current one, then this group will henceforth be the current method group for the quick selection of methods in the **Method** field.

After a method has been selected, it is loaded for the selected heating block. In the process, the following parameters and surface elements of the measuring position display are refreshed:

- Target temperature (sample temperature + temperature correction)
- Gas flow
- Single determination / multiple determination (display of a frame for double or quadruple determinations)
- Sample data fields
- Sensor field
- Graph display



NOTICE

If the method loaded for the heating block is changed and then saved anew in the method editor, it will be automatically reloaded as soon as no determination is running on any measuring position of the heating block.

3.3.5 Switching on / switching off heater

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

The heater of the two blocks A and B can be switched on and off individually for each block. The heater stays on until the **target temperature (= sample temperature + temperature correction)** defined in the loaded method has been reached; this temperature is displayed to the left of the Start/Stop button. To the right of this button, the current heating block

temperature is displayed graphically (as the deviation of the current heating block temperature from the target temperature) and digitally.

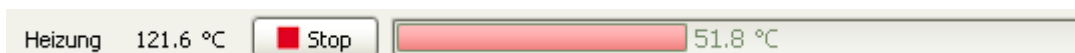
Before switching on the heater



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

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

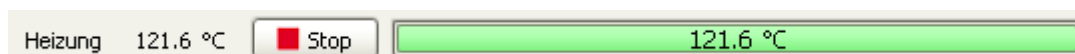
During the heating phase



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 blocks by clicking on . The gas flow can be switched off only if no determination is running on either **Block A** or **Block B**.



The gas flow is switched on but does not correspond to the setpoint value from the method loaded for this block. The gas flow is switched off for both blocks by clicking on . The gas flow can be switched off only if no determination is running on either **Block A** or **Block B**.



NOTICE

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 and buttons remain inactive. The gas flow provided by an external gas supply is, however, also shown in the display.

895 Professional PVC Thermomat

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:



The gas flow is not switched on. The gas flow is switched on for the selected block by clicking on .



The gas flow is switched on and corresponds to the setpoint value from the method. The gas flow is switched off for the selected block by clicking on . The gas flow cannot be switched off until there are no longer any determinations running on the selected block.



NOTICE

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 286). 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 286). 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 3

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 286). 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'

3.3.8 **Selecting a sensor**

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

Sensor

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 267). 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'
-----------	----------------------

3.3.9 **Carrying out a determination**

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

Starting a determination



Starts a determination on the selected measuring position. 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 position.

Measuring position display during the determination



Measuring position 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 291*).

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 267).

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 267). 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 267*). 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 291*). 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.

 **NOTICE**

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 240</i>).
Unzoom	Undoes the last zoom action (as often as required).
Copy	Copies the live curve displayed to the clipboard.

3.3.12 Sample data modification comment

Dialog window: **Workplace ► Block A/Block B ► Modifying sample data live ► [OK] ► Modification comment sample data**

If the **Comment on modification of sample data (live)** option is enabled in the security settings (*see page 319*), then the **Modification comment sample data** dialog window is opened before saving.

Reason

Selection from the default reasons defined in the security settings for the **Modification of sample data** category (*see chapter 6.2.2.6, page 320*).

Comment

Entry of a comment on modifying the method.

3.3.13 Changing stop criteria

Dialog window: **Workplace ► Tools ► Modify stop criteria ► Block A / Block B**

The **Change stop criteria - Block A / Block B** dialog window, in which the stop criteria for block A or block B can be changed, is opened with the **Tools ► Modify stop criteria ► Block A / Block B** menu item or the  symbol from the block-specific toolbar.

Stop criteria

Time

Time until the automatic stop of the determination.

Conductivity

Conductivity limit value. The determination is ended automatically when this value is reached.

Endpoint(s)

Automatic stop of the determination as soon as all of the endpoints defined in the method (induction time and stability time) have been reached.

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 that can be started 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 in the reaction vessel must be used and be connected to the device.

[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 temp-

External temperature sensor

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 progress bar in the progress display changes its color to **green** once the measured temperature is stable.

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**.



Cancels the determination of the temperature correction.

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 ... 1000 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 381*). Afterwards, the wizard is closed automatically.

[Cancel]

Cancels the determination of the temperature correction.

3.5 Determining the cell constant

3.5.1 Determining the cell constant - General

Wizard: **Workplace** ► **Tools** ► **Determine cell constant...** ► **Block A/Block B**

The cell constants of the conductivity measuring cells used in the Rancimat can be automatically determined by means of a defined standard solution. **StabNet** offers a wizard for this purpose that can be started with the **Tools ► Determine cell constant... ► Block A/Block B** menu item or with the  symbol from the block-specific toolbar. This wizard leads you through the determination of the cell constant in 3 steps. The cell constant can be entered manually in the **Configuration** program part (see chapter 6.6.3.3, page 360).

As only the change in conductivity is measured and evaluated during the Rancimat measurement, the cell constants of the conductivity measuring

No other program action can be performed while the cell constant is being determined, including changing to another workplace.

Wizard: **Workplace ► Tools ► Determine cell constant... ► Block A/Block B ► Preparing the determination**

Shows the text templates defined for the selected field.

Adds a new text template (see chapter 3.7.2, page 91).

Edit the selected text template (see chapter 3.7.2, page 91).

Deletes the selected text template.

Dialog window: **Workplace** ► **Tools** ► **Text templates...** ► **Text templates** ► **[New] / [Properties]** ► **Default string**

The text template can be edited in the **Default string** dialog window.

Text template entry.

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

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

4.1.3 Database - Menu bar

4.1.3.1 Database - Main menus

Program part: **Database**

The menu bar in the **Database** program part contains the following main menu items:

- *File*
Opening and closing databases, database manager, printing.
- *Edit*
Copying selected lines in the determination overview to the clipboard, marking all lines.
- *View*
Changing the layout, loading a view, saving a view, modifying the sub-window properties.
- *Determinations*
Search, filter, sign, delete determinations; overlay curves, reprocess, etc.
- *Tools*
Report templates, further templates.
- *Help*
Open program help, display program information.

4.1.3.2 Database - File menu

Program part: **Database**

 Open...	Open a database (<i>see chapter 4.2.1, page 103</i>).
Close all	Closes all open databases (<i>see chapter 4.2.6, page 106</i>).
 Close	Close database (<i>see chapter 4.2.6, page 106</i>).
 Database manager...	Management of the determination databases (<i>see chapter 4.3.1, page 106</i>).
Print ►	
Determination overview...	PDF file output of the determination overview (<i>see chapter 4.5.2.2, page 167</i>).
Report...	PDF file output of the report (<i>see chapter 4.5.2.2, page 167</i>).
 Logout...	Logs out user (<i>see chapter 2.2.3, page 12</i>).

 Search...	Opens the Search - Database 'Name' dialog window for searching for determinations (<i>see chapter 4.5.2.4, page 168</i>).
Filter ►	
 Last filter	Applies the most recently used quick or special filter (<i>see chapter 4.5.2.5.2, page 171</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 172</i>).
 Remove filter	Removes the current filter (<i>see chapter 4.5.2.5.5, page 173</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 177</i>).
Append to batch...	Attaches the selected determinations to the batch (<i>see chapter 4.5.2.6.4, page 177</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 181</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...	Send the selected determinations per e-mail (<i>see chapter 4.5.2.8, page 183</i>).
Export...	Export the selected determinations (<i>see chapter 4.5.2.9, page 183</i>).
Import...	Imports the selected determinations (<i>see chapter 4.5.2.10, page 184</i>).

 Show method...	Shows the method used for the focused determination (<i>see chapter 4.5.2.12, page 185</i>).
 Show history	Shows all versions of the focused determination in the determination table (<i>see chapter 4.5.2.13, page 185</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 185</i>).
 Detail overview...	Shows the detail overview of results for the selected determinations (<i>see chapter 4.5.2.15.2, page 187</i>).
 Overlay curves...	Overlays the curves of the selected determinations (<i>see chapter 4.5.2.16, page 196</i>).
 Reprocess...	Reprocess the selected determinations.
Extrapolation...	Performs extrapolation with selected determinations (<i>see chapter 4.5.2.18, page 214</i>).
Delete	Deletes the selected determinations (<i>see chapter 4.5.2.11, page 184</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...	Manage report templates (<i>see chapter 4.4.1.1, page 115</i>).
Templates ►	
Control chart templates...	Manage templates for control charts (<i>see chapter 4.4.2, page 149</i>).
Export templates...	Manage 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**

	Open a database (<i>see chapter 4.2.1, page 103</i>).
	Close 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.
	Modify the layout of the loaded database view (<i>see chapter 4.1.7.2, page 101</i>).
	Load a saved database view (<i>see chapter 4.1.7.3, page 101</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 105</i>).
	Splits the database window horizontally and displays two databases, one above the other (<i>see chapter 4.2.5, page 105</i>).
	Undoes the splitting of the database window (<i>see chapter 4.2.3, page 105</i>).
	Enter a comment on the selected determination (<i>see chapter 4.5.2.3, page 168</i>).
	Opens the Search window for searching for determinations (<i>see chapter 4.5.2.4, page 168</i>).

	Applies the most recently used quick or special filter (<i>see chapter 4.5.2.5.2, page 171</i>).
	Quick filtering of the database with the content of the selected table cell (<i>see chapter 4.5.2.5.3, page 172</i>).
	Opens the Special filter window for the definition of user-specific filters (<i>see chapter 4.5.2.5.4, page 172</i>).
	Removes the current filter (<i>see chapter 4.5.2.5.5, page 173</i>).
	Sigs the selected determinations at level 1 (<i>see chapter 2.3.3, page 15</i>).
	Sigs the selected determinations at level 2 (<i>see chapter 2.3.4, page 17</i>).
	Shows the method used for the focused determination (<i>see chapter 4.5.2.12, page 185</i>).
	Shows all versions of the focused determination in the determination table (<i>see chapter 4.5.2.13, page 185</i>).
	Makes the old version selected in the history view the current version once again (<i>see "Making an old version current", page 185</i>).
	Shows the detail overview of results for the selected determinations (<i>see chapter 4.5.2.15.2, page 187</i>).
	Overlays the curves of the selected determinations (<i>see chapter 4.5.2.16, page 196</i>).
	Reprocess the selected determinations (<i>see chapter 4.5.2.17.1, page 202</i>).
	Deletes the selected determinations (<i>see chapter 4.5.2.11, page 184</i>).
	Opens a report template for editing (<i>see chapter 4.4.1.3, page 117</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*
Shows curves for the focused determination.
- *Information*
Shows information on the focused determination.
- *Results*
Shows the results of the focused determination.

Representation

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*
Defining the number, arrangement and sequence of the subwindows for the current view.
- *Saving a view*
Saving the current view.
- *Loading a view*
Loading a saved view.
- *Renaming a view*
Renaming a saved view.
- *Deleting a view*
Deleting a saved view.

Saving 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.

Loading automatically

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

By default, views are opened with the following subwindows with the very first program start:

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

4.1.7.2 Changing the layout

Dialog window: **Database/Configuration ► View ► Change layout... ► Change layout**

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

Select layout

Selection of a graphical icon for the number and arrangement of the sub-windows.

Selection	Selection of the possible combinations
-----------	--

Available subwindows

Display of the subwindows that are still available for being displayed in the view.

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

Displayed subwindows

Display of the subwindows that are shown in the view.

[illegible]

>>

Adds the selected subwindow to the view.

<<

Removes the selected subwindow from the view.

Moves the selected subwindow upward (modifies sequence).

Moves 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  icon or the **View ► Load view...** menu item.

Name

Name of the view to be loaded.

[Rename]

Rename the selected view.



[Delete]

Deletes the selected view.

[Load]

Loads the selected view.

Load view automatically

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

By default, views are opened with the following subwindows 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: **Database/Configuration** ► **View** ► **Save view...** ► **Save view**

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

Name

Name under which the view is to be saved.

[Rename]

Rename the selected view.

[Delete]

Deletes the selected view.

[Save]

Saves the view under the given name.

Saving a 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.

4.1.7.5 Renaming a view

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

To be able to rename a view, either open the **Load view** or the **Save view** dialog window and click on the **[Rename]** button. The **Rename view** window opens afterwards.

Rename view 'Name' to

Entry of a new name for the view.

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

4.1.7.6 Deleting a view

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

To delete a view, open either the **Save view** or **Save view** dialog window and press the **[Delete]** button. The delete procedure must then be confirmed.

4.2 Database display

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 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.

Database table

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 records 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 records 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 icon.



NOTICE

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 currently opened databases is displayed in the upper left corner of the database icon. 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 icon.



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 icon 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.

4.2.3 Displaying a single database

Menu item: **Database ► View ► Unsplit**

In the default settings, the most recently opened database is displayed by itself in the main window. If the display of two databases is enabled, then the  icon or the **View ► Unsplit** menu item can be used to switch back to the display of just one single database.

4.2.4 Displaying databases next to one another

Menu item: **Database ► View ► Split vertically**

Two databases are displayed next to one another in the main window with the  icon or the **View ► Split vertically** menu item.

4.2.5 Displaying databases one above the other

Menu item: **Database ► View ► Split horizontally**

Two databases are displayed one above the other in the main window with the  icon or the **View ► Split horizontally** menu item.

Markings in the database table



NOTICE

Orange marking = Status of the database backup unknown. Update the status with **[Updating]**.

Red marking = The limit value of the marked field has been exceeded.

Orange marking

If the line header of a database and the **Next backup** field are highlighted in orange in the database table, then it will be unknown whether a backup that was due has been performed successfully. This status is used, for example, when a backup is running.

Use **[Updating]** to update the status of the database backup.

If the backup was successful, the marking of the line header and the **Next backup** field is removed.

If the backup was not performed successfully, the line header and the **Next backup** field are highlighted in red (*see chapter 4.3.5.4, page 111*).

Red marking

If the line header of a database and a monitored field are highlighted in red in the database table, then the limit value of the highlighted field has been exceeded. The following limit values can be monitored:

- Number of datasets (*see "Monitoring number of records", page 112*)
- Size of the database (*see "Monitoring size", page 112*)
- Next backup (*see "Backup monitoring", page 111*)

Window menus and functions

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

New...	Create a new database (<i>see chapter 4.3.2, page 108</i>).
Delete	Deletes the selected database (<i>see chapter 4.3.4, page 109</i>).
Rename...	Rename the selected database (<i>see chapter 4.3.3, page 108</i>).

[Properties]

Opens the **Database manager** window for editing the database selected in the table (*see chapter 4.3.5.1, page 109*).

[Updating]

Updates the status of the database backup (see "Database table", page 106).

[Backup]

Opens the **Backup database 'Name'** window for backing up the database selected in the table (*see chapter 4.3.6, page 113*).

[Restore]

Opens the **Restore databases** window for restoring backed-up databases (see *chapter 4.3.7, page 114*).

[Close]

Closes the **Database manager** window.

4.3.2 Creating a new database

Dialog window: **Database ► File ► Database manager... ► Database manager ► [Edit] ► New... ► New database**

The **[Edit] ► New...** menu item is used to open the **New database** dialog window, in which a name for the new database must be entered.

Name

Name of the new database.

Entry	50 characters
Default value	New database #



NOTICE

The database name must be unique.

Clicking on **[OK]** opens the **Properties - Database - 'Database name'** dialog for editing the database properties.

4.3.3 Renaming a database

Dialog window: **Database ► File ► Database manager... ► Database manager ► [Edit] ► Rename... ► Rename database**

The **[Edit] ► Rename...** menu item is used to open the **Rename database** window for renaming the selected database.

Rename database 'Name' to

Entry of the new database name.

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



NOTICE

The database name must be unique.

4.3.4 Deleting a database

Menu item: **Database ► File ► Database manager... ► Database manager ► [Edit] ► Delete**

The **[Edit] ► Delete** menu item is used to delete the selected database.



NOTICE

Databases that are open cannot be deleted.

4.3.5 Database properties

4.3.5.1 Database properties - Overview

Dialog window: **Database ► File ► Database manager... ► Database manager ► [Properties] ► Properties - Database - 'Database name'**

The properties for a database are set on the following tabs:

- *General*
General information about the database.
- *Access rights*
Database access rights for user groups.
- *Backup*
Definition of backup monitoring and automatic backups.
- *Monitoring*
Definition of database monitoring.

4.3.5.2 Database properties - General

Tab: **Database ► File ► Database manager... ► Database manager ► [Properties] ► Properties - Database - 'Database name' ► General**

General information about the database.

Comment

Freely definable comments about the database.

Entry	250 characters
-------	-----------------------

Number of records

Shows the number of records in the database.

Size

Shows the size of the database in KB.

Created

Shows the date and time when the database was created.

Created by

Shows the user (short name) who created the database.

Modified

Shows the date and time of the last modification of the database properties.

Modified by

Shows the name of the user (short name) who carried out the modifications.

4.3.5.3 Database properties - Access rights

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

Database access rights 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. Records can be modified or deleted.



NOTICE

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.

[Start]

Starts database restoring. After the start, a progress bar appears in the window. The dialog window closes automatically once the backup has been completed.



NOTICE

Existing databases cannot be overwritten, i.e., they must first be deleted so that the database can be restored under its old name.

4.4 **Templates**

4.4.1 **Report templates**

4.4.1.1 **Managing report templates**

4.4.1.1.1 **Managing report templates**

Dialog window: **Database ► Tools ► Report templates ► Manager... ► Report template manager**

The **Report template manager** window is opened with the **Tools ► Report templates ► Manager...** menu item.

List of report templates

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 (columns **Name, Saved, Saved by, Comment**) in either ascending or descending order by clicking on the column title.

Name

Name of the report template.

Saved

Date and time when the report template was saved.

Saved by

Short name of the user who saved the report template.

Comment

Comment on the report template.

Window menus

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

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** dialog 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 report templates to be imported must be selected. These report templates are then imported.

4.4.1.2 Creating new report templates

Menu item: **Database ► Tools ► Report templates ► New**

New form report

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

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 output for each determination.

New tabular report

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

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.

4.4.1.3 Opening report templates

Dialog window: **Database ► Tools ► Report templates ► Open... ► Open report template**

The  icon 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.

- **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 output 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.

4.4.1.4.1.2 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*

4.4.1.4.1.3 Report template - Menu bar

4.4.1.4.1.3.1 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*
Saving report templates, page setup, page preview, closing window.
- *Edit*
Undoing, redoing, cutting, copying, pasting, deleting, entering comment.
- *View*
Updating view, page navigation.
- *Insert*
Inserting pages.
- *Tools*
Options.
- *Help*
Opens the program help.

   	Date If this option is enabled, then date fields, in which the actual date is entered, can be inserted in the report template (<i>see chapter 4.4.1.4.3.3, page 136</i>). Time If this option is enabled, then time fields, in which the actual time is entered, can be inserted in the report template (<i>see chapter 4.4.1.4.3.4, page 138</i>). Page number If this option is enabled, then fields in which the page number is entered can be inserted in the report template (<i>see chapter 4.4.1.4.3.5, page 140</i>). Number of pages If this option is enabled, then fields in which the number of pages is entered can be inserted in the report template (<i>see chapter 4.4.1.4.3.6, page 141</i>).
	Fixed report If this option is enabled, then fixed reports can be inserted in the report template (<i>see chapter 4.4.1.4.3.7, page 143</i>).
	Group If this option is enabled, then group fields can be inserted in the report template (<i>see chapter 4.4.1.4.3.8, page 144</i>).
  	Image If this option is enabled, then images can be inserted in the report template (<i>see chapter 4.4.1.4.3.9, page 145</i>). Line If this option is enabled, then lines can be inserted in the report template (<i>see chapter 4.4.1.4.3.10, page 146</i>). Rectangle If this option is enabled, then rectangles can be inserted in the report template (<i>see chapter 4.4.1.4.3.11, page 147</i>).
	Curve If this option is enabled, then curves can be inserted in the report template (<i>see chapter 4.4.1.4.3.12, page 148</i>).

Activating the selection



This icon in the module bar must be activated in order to be able to select modules in a report template for editing.

Selecting a single module

Single modules are selected with a left click. This automatically shows the corresponding properties of the module below the toolbar.

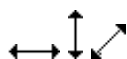
Selecting several modules

Several modules are selected by creating a frame around the required modules with the left mouse button.

Moving, reducing, enlarging modules



When this cursor icon appears, the selected modules can be moved about on the report template with the left mouse button pressed down.



When one of these cursor icons appears, the selected modules can be reduced or enlarged, respectively, on the report template with the left mouse button pressed down.

Cutting, copying, pasting, deleting modules



Cuts the selected modules and copies them to the clipboard.



Copies the selected modules to the clipboard.



Pastes modules from the clipboard.



Deletes selected modules.

Editing module properties

Double-clicking on the module opens the properties window for the module. Alternatively, the properties can also be edited directly below the toolbar.

|<

Jump to first page.

<

Jump to previous page.

>

Jump to next page.

>|

Jump to last page.

4.4.1.4.2.9 Report template - Comment

Dialog window: **Report template - 'Name' ► Edit ► Comment ► Report template comment**

The **Report template comment** window, in which comments on the opened report template can be entered, is opened with the **Edit ► Comment** menu item in the **Report template - 'Name'** program window.

Report template comment

Comment on the report template shown in the list of report templates.

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

4.4.1.4.2.10 Report template - Options

Dialog window: **Report template - 'Name' ► Tools ► Options... ► Options for report templates**

The **Options for report templates** dialog window, in which various settings for the report template can be defined, is opened with the **Tools ► Options...** menu item in the **Report template - 'Name'** program window.

Unit

Unit

Selection of the unit for the report templates.

Selection	mm cm inch
Default value	mm

Grid

X distance

Grid distance in x direction.

Input range	1.0 to 100.0 mm
Default value	5.0 mm

Saved by

Short name of the user who saved the report template.

Comment

Comment on the report template.

Saving the report template**Name**

Entry of the name under which the report template is to be saved.

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

**NOTICE**

The name of the report template must be unique.

[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.

Inserting

Ab

In order to insert a text field into a report template, the corresponding icon 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 to (max. page width) mm
-------------	---------------------------------------

Y pos.

Y position within the permitted range.

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

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.

Inserting



In order to insert a data field into a report template the corresponding icon 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 to (max. page width) mm
-------------	---------------------------------------

Y pos.

Y position within the permitted range.

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

Width

Width of data field.

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

Height

Height of data field.

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

▼

Selection of the available Windows fonts.

▼

Font size in pt.

▼

Color selection.

B

Bold.

I

Italic.

	Underlined.
	Left-justified.
	Centered.
	Right-justified.
	Activates/deactivates line break for multi-line data fields.
A...	Fills the field with dots.

Prefix	Text placed before the contents of the data field.
Entry	50 characters

Data field	Shows path and name of selected data field (the field cannot be edited directly).  opens a window for selecting the data field in which all the available fields for the determination overview are shown in tree-form. The path and name of the data field are entered with a double-click on the required field.
-------------------	---

Suffix	Text placed after the contents of the data field.
Entry	50 characters

Preview	Shows a formatted example of text.
----------------	------------------------------------

4.4.1.4.3.3	Report template - Date field Dialog window: Report template - 'Name' ► Properties - Current date Date fields are used for outputting the current date in a report.
--------------------	--



Inserting

In order to insert a date field into a report template the corresponding icon 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 to (max. page width) mm
-------------	---------------------------------------

Y pos.

Y position within the permitted range.

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

Width

Width of date field.

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

Height

Height of date field.

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

Arial

▼

Selection of the available Windows fonts.

9

▼

Font size in pt.

▼

Color selection.

B

Bold.

I

Italic.

U

Underlined.

Width

Width of the time field.

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

Height

Height of time field.

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

Arial ▼

Selection of the available Windows fonts.

9 ▼

Font size in pt.

■ ▼

Color selection.

B

Bold.

I

Italic.

U

Underlined.

≡

Left-justified.

≡

Centered.

≡

Right-justified.

A...

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.

 **B**

Bold.

I

Italic.

U

Underlined.



Left-justified.



Centered.



Right-justified.

A...

Fills the field with dots.

Prefix

Text placed before the contents of the page number field.

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

Suffix

Text placed after the contents of the page number field.

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

Preview

Shows the formatted page number.

4.4.1.4.3.6 Report template - Number of pagesDialog window: **Report template - 'Name' ► Properties - Number of pages**

This field shows the total number of pages in the report.

Inserting

In order to insert a number of pages field into a report template, the corresponding icon 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.**

Shows the predefined X position for the field.

Y pos.

Y position within the permitted range.

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

Width

Shows the predefined width of the field.

Height

Height of the field

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

4.4.1.4.3.9**Report template - Image field**

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

An image field is used for entering any external graphics on the report template. The file formats *.jpg and *.gif are supported.

Inserting

In order to insert an image into a report template, the corresponding icon 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 to (max. page width) mm
-------------	---------------------------------------

Y pos.

Y position within the permitted range.

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

Width

Width of the text field.

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

Length

Length of the line.

Input range	0.0 to (max. page width) mm
-------------	------------------------------------

Angle

Angle of the line.

Input range	0.000 to 360.000 °
-------------	---------------------------

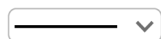
Thickness

Thickness of the line.

Input range	0.1 to 10.0 mm
Default value	0.5 mm



Selection of the line color.



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.

Inserting

In order to insert a rectangle into a report template, the corresponding icon 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 to (max. page width) mm
-------------	---------------------------------------

Y pos.

Y position within the permitted range.

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

Width

Width of the rectangle.

Width

Shows the predefined width of the curve field.

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

Height

Height of the curve field.

Input range	0.0000 to (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.

4.4.3 Export templates

4.4.3.1 Managing export templates

Dialog window: **Database ► Tools ► Templates ► Export templates... ► Export templates**

The **Tools ► Templates ► Export templates...** menu item opens the **Export templates** dialog window, in which the globally available templates for the manual or automatic export of determination data can be managed.

Template table

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

Name

Shows the name of the export template.

File type

Shows the file format of the export template for data export.

Comment

Shows the comment on the export template.

The **[Edit]** menu below the list of export templates or a right-click on the table opens a menu with the following menu items:

New...	Create a new template. The Export template 'Name' window opens, in which a new template can be defined (<i>see chapter 4.4.3.2, page 155</i>).
Properties...	Edit the selected template. The Export template 'Name' window opens, in which the template can be edited (<i>see chapter 4.4.3.2, page 155</i>).
Copy	Copies the selected template and saves it under the name Copy of 'Template name' .
Delete	Deletes the selected template.

4.4.3.2 Editing export templates

4.4.3.2.1 Export template - Properties

Dialog window: **Database ► Tools ► Templates ► Export templates... ► Export templates ► [Edit] ► Properties... ► Export template 'Name'**

[Edit] ► Properties... is used to open the **Export template 'Name'** dialog window in which the properties of the selected export template can be edited.

[Select fields]

Opens the **Select fields** dialog window in which the required fields for the export can be selected, arranged in the required sequence and renamed (see chapter 4.4.3.2.2, page 158).

**NOTICE**

Field selection is only possible for the ***.csv** file type. With ***.rdet**, ***.xml** and ***.txt**, all fields will always be exported.

[Options]

Opens the **Options for CSV format** (see chapter 4.4.3.2.3, page 159) or **Options for measuring point list** (see chapter 4.4.3.2.4, page 159) dialog window in which the separators can be defined.

**NOTICE**

The options can only be set for the file types ***.csv** and ***.txt**.

File name

One of the following options can be selected for the definition of the name of the export file:

Selection	Determination ID Sample data Request on each export Fixed file name (append data)
Default value	Determination ID

Determination ID

If this option is selected then the name of the export file will be formed from the unique **determination ID**, the **computer name**, the date stamp **-YYYYMMDD-HHMMSS** and the suffix for the format.

Sample data

If this option is selected, then the name of the export file is formed from the selected sample data (**Ident** or **Info 1...3**), the **Computer name**, the date stamp **-YYYYMMDD-HHMMSS** and the suffix for the format. If the generated name already exists in the directory, then a version number will be additionally appended to the date.

Request on each export

If this option is selected, then the name of the export file will be requested at each export. In addition to the entered name, the **Computer name** and the date stamp **-YYYYMMDD-HHMMSS** will be added automatically.

<code><xmlCreatorVersion val="" /></code>	Program version
<code><xmlCreatorBuildNo val="" /></code>	Build number
<code><subtype val="" /></code>	
<code>+ <Determination></code>	Determination data
<code>+ <Method></code>	Method data
<code>+ <Sample></code>	Sample data
<code>+ <SingleResults></code>	Single results
<code>+ <ResultMonitoring dynamic=""></code>	Monitored results
<code>+ <Methodparams></code>	Method parameters
<code><Measparams></code>	Measuring parameters
<code><Evaluation></code>	Evaluation
<code><Properties></code>	Properties
<code>+ <Statistics></code>	Statistics results
<code>+ <Configuration></code>	Device data
<code>-<System></code>	System data
<code><userName val="" /></code>	User name (short name)
<code><userNameFull val="" /></code>	User name (full name)
<code><clientName val="" /></code>	Client name
<code><progVersion val="" /></code>	Program version - Build number
<code><licenseRoot val="" /></code>	License code
<code></System></code>	
<code></DeterminationReport></code>	



NOTICE

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

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	= <> empty not empty
Default value	=

for fields of the type = date

Selection	= <> < <= > >= Today
Default value	=

Today

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

for fields of the type = number

Selection	= <> < <= > >= invalid out of limits
Default value	=

invalid

Filtration is in accordance with values with the **invalid** entry

out of limits

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

Comparative value

Selection or entry of the comparative value for the filter criterion. 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 comparative value. * can be used as a wildcard for any character string if the Use asterisk (*) as wildcard option is enabled.
-------	--

- **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.



NOTICE

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 1 not possible (signature 2 exists)
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.

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'
-----------	---

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.

**NOTICE**

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.

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.

User-defined results

Values for the user-defined results RS01 ... RS25.

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:

- **Dragging the margin between column titles**
Sets the column width.
- **Double-clicking on the margin between column titles**
Sets the optimal column width.
- **Dragging 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.

4.5.2.15.6 Printing the result overview

Dialog window: **Database ► Determinations ► Detail overview... ► Open detail overview ► [OK] ► [Results] ► Detail overview - Results ► [Print (PDF)] ► Print result overview (PDF)**

Selection	All result types 'Selected results'
Default value	All result types

All result types

Produces a result overview for all result types.

'Selected results'

Produces a result overview for the selected results only.

Orientation

Selection	Portrait Landscape
Default value	Portrait

Portrait

Produces the result overview in portrait format.

Landscape

Produces the result overview in landscape format.

Comment

Possibility of entering comments on the result overview which will be produced together with the result overview.

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

[OK]

The result 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.

4.5.2.15.7 Printing a control chart

Dialog window: **Database ► Determinations ► Detail overview... ► Open detail overview ► [OK] ► [Control chart] ► Detail overview - Control chart ► [Print (PDF)] ► Print control chart (PDF)**

Orientation

Selection	Portrait Landscape
Default value	Portrait

Portrait

Outputs the control chart in portrait format.

Landscape

Outputs the control chart in landscape format.

- **Completed determination**
Only completed determinations can be reprocessed.
- **Number of determinations**
Only a maximum of 200 determinations can be selected for reprocessing.
- **Signed determination**
Determinations signed at level 1 can be reprocessed.
Determinations signed at level 2 cannot be reprocessed.
- **Multiple determinations**
Multiple determinations can only be reprocessed as a group.

Reprocessing sequence

The following rules apply for reprocessing the selected and modified determinations:

- **Recalculating**
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, which can be enlarged and reduced by dragging the separating bar between them:

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

[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 212)).

**NOTICE**

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 icon 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.

Edit menu

[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 207</i>).
Delete line	The selected determination is removed from reprocessing. Multiple determinations cannot be deleted individually in the reprocessing table.
Increment	The range that is to be automatically incremented from a column in the table can be selected with the cursor, which takes on the form  . In this process, the number standing at the end of the expression will 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 209</i>). This works not only with pure numbers but also with text expressions ending with a number (e.g. ABC10 → ABC11 → ABC12...).
Filling	Fills the selected cells automatically (<i>see chapter 4.5.2.17.4.4, page 210</i>).

The menu items can also be found as a context-sensitive menu of the table. Right-click to open this menu.

4.5.2.17.4.2 Editing line - Reprocessing

Subwindow: Database ► Reprocess... ► Reprocessing ► Reprocessing table ► Edit ► Edit line

The sample data for the line selected in the table can be edited in this dialog window.

Method

Display of the method that was used for the determination.

Ident

Name for the determination. If text templates are defined for **Ident**, then these can be selected (*see chapter 3.7.1, page 90*).

Entry	0 ... 100 characters
Default value	'empty'
Selection	Selection of text templates

Info #

Entry of additional information about the sample. Text templates can be selected here if they have been defined for this parameter (*see chapter 3.7.1, page 90*).

Entry	0 ... 100 characters
Default value	'empty'
Selection	Selection of text templates

5

Option of entering the desired line number to which the program directly jumps when the **[Enter]** key is pressed.

>

Jump to the next line in the table.

>|

Jump 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]**).

4.5.2.17.4.3 Incrementing lines

Subwindow: **Database ► Reprocess... ► Reprocessing ► Reprocessing table ► Edit ► Increment**

The selected cell entries of the first line are thereby transferred into the cells of the selected section lying below and are incremented per line. To accomplish this, the cursor is pulled across the cells that are to be incremented, starting from the first, modified cell.

The cell entries below are overwritten.

Rules for incrementing

- In the case of text without a number at the end, the first cell entry is transferred to the highlighted cells without anything being incremented as a result (the same response as with **Filling**). **Sample -> Sample**
- Integers are incremented by 1. **1->2->3**
- In the case of numbers with decimal places, the last place is incremented. **1.0->1.1, 1.00->1.01, 1.99->2.00**
- In the case of exponential display, the exponent is increased. **1e2->1e3**
- In the case of texts with a number at the end of the line, that number will be incremented. **Sample 1->Sample 2**

Fields that cannot be incremented:

- **Determination start**
- **Method name**
- **Induction time [h]**
- **Stability time [h]**
- **Evaluation type**

- **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
	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

$$(2) \quad \ln(t) = B \cdot T + \ln A$$

General linear equation

$$(3) \quad y = m \cdot x + b$$

y	corresponds to $\ln(t)$
x	corresponds to T
m	Slope of the linear regression

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
t_e	Induction time at target temperature	h	Induction or stability time at target temperature T_e to be calculated

$$(5) \quad A = e^b$$

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
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

Client ID:

Name of the client with which the determination was recorded.

Recording

Information about the recording of the determination.

Determination start:

Date and time at start of determination.

Determination duration [min]:

Duration of the determination from its start to its end or to termination, in h

Determination run:

Way in which the determination was ended:

Selection	regular without remarks regular with remarks stop stop by error
	regular without remarks
	The determination was finished automatically after the method was run normally and without any messages.
	regular with remarks
	The determination was finished automatically after the method was run normally but with messages.
	stop
	The determination was canceled manually with [Stop] .
	stop by error
	The determination was canceled automatically due to an error.

Start conductivity [$\mu\text{S}/\text{cm}$]:

Conductivity measurement value at the start of the determination.

User (short name):

Short name of the user.

User (full name):

Full name of the user.

Program version

Shows the program version and build number of **StabNet** with which the determination was recorded.

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**

Shows 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.

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**

Shows 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.

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.

Accessories 'Accessories name'

Information about the accessories used.

Accessory name

Name of the accessory part.

Manufacturer

Manufacturer of the accessory part.

Order number

Order number of the accessory part.

Set to work

Displays the date and time when the accessory part was used for the first time.

Expiry date

Expiry date of the accessory part.

- *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.



NOTICE

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.



NOTICE

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.

4.8.3 Curve window - View

Subwindow: **Database ► Curves**

The curve window is used for displaying and viewing the measurement curve. The curve can be zoomed in or out and its display (background, axes,...) completely configured. It consists of the following elements:

- Background
- Grid
- Axes with labeling
- Measuring point curve
- Induction timeline and/or stability timeline with the calculated time
- Line of the evaluation sensitivity
- 2nd derivative with second y axis
- Tangents

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 (<i>see chapter 4.8.5.2, page 240</i>).
Unzoom	Undoes the last zoom action (as often as required).
Properties...	Opens the Properties - Graph dialog window for the definition of the properties of the curve display (<i>see chapter 5.7.3, page 288</i>).
Copy	Copies the measurement curve displayed in the graphics window.

4.8.4 Labeling of the axes

Subwindow: **Database ► Curves**

The following rules apply for the labeling of the axes within the curve window:

- All labels are **horizontal**, not only the units but also the scaling.
- The tick mark spacing is always **1, 2, 5 * 10^x**
- The exponential notation is used only for the numbers **<10⁻²** or **>10⁶**.

The following rules apply for the formatting of the axis tick marks within the graphics window:

- If the starting or end value of the axis labeling >10⁶ and if the delta of both values is >1000, then an exponential display is used.

If this is not the case:

- Decimal places are displayed only if the displayed value permits them.

4.8.8 Curve window - Display of the curves

The settings for the display of the graphs is stored for each determination.

Graph properties of new data sets

Determinations are stored with the graph settings of the method at the moment of the recording.

Changing the display in the database

The graph properties can be modified in the Curves dialog window of the database (*see chapter 4.8.7, page 242*).

The modification always refers only to the **selected** determination in the determination overview. If several determinations are highlighted, then the change will nevertheless still only affect the selected determination.

The graph properties need not be saved separately. They remain in effect, i.e. the determinations in the database are always displayed with the last setting.

Exception: The zoom factor is not retained; the entire range is always displayed.

Saving graph properties

Every determination has its own settings for displaying the graphs. It must be ensured that a change in the graph settings will not generate a new determination version.

5.1.3 Method - Menu bar

5.1.3.1 Method - File menu

Program part: **Method**

 New...	Create a new method (<i>see chapter 5.2.1, page 247</i>).
 Open...	Open an existing method (<i>see chapter 5.2.2, page 247</i>).
 Save	Saves the selected method (<i>see chapter 5.2.6, page 250</i>).
Save as...	Save the selected method under a new name (<i>see chapter 5.2.6, page 250</i>).
Close all	Closes all opened methods (<i>see chapter 5.2.9, page 254</i>).
 Close	Closes the selected method (<i>see chapter 5.2.9, page 254</i>).
 Method check	Checks the selected method for plausibility (<i>see chapter 5.2.5, page 250</i>).
 Method manager...	Opens the method manager (<i>see chapter 5.3.1, page 254</i>).
 Method groups...	Opens the method groups manager (<i>see chapter 5.4.1, page 265</i>).
 Print (PDF)...	Output of the method report as PDF file (<i>see chapter 5.2.8, page 253</i>).
 Logout...	Log out the user. The Login dialog window opens (<i>see chapter 2.2.3, page 12</i>).
Exit	Exits the program.

5.1.3.2 Method - View menu

Program part: **Method**

Toolbar	Activates/deactivates the toolbar display.
----------------	--

5.1.3.3 Help menu

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

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

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

Shows whether and at which level the method was 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.
Level 2	The method has been signed electronically at level 2. The method is locked now and it can neither be opened for editing nor deleted.

Method comment

Comment on the method defined in the method properties.

Window menus

The **[Edit]** menu below the method table contains the following menu items:

Rename...	Rename the selected method (<i>see chapter 5.3.2, page 256</i>).
Copy	Copies the selected method(s) in the same method group (<i>see chapter 5.3.3, page 257</i>).
Move...	Move the selected method(s) to a different method group (<i>see chapter 5.3.4, page 257</i>).
Delete...	Deletes the selected method(s) (<i>see chapter 5.3.5, page 257</i>).

5.3.3 Copying a method

Menu item: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Copy**

With the **[Edit] ▶ Copy** menu item, the selected methods are saved in the same method group under the name **Copy of 'Method name'**.

5.3.4 Moving a method

Dialog window: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Move... ▶ Move method(s)**

The selected methods are moved to the desired method group with the **[Edit] ▶ Move...** menu item. The method group can be selected in the **Move method(s)** window.

Method group

Selection of the method group to which the methods should be moved.

Selection	'Method group'
-----------	----------------



NOTICE

Locked methods (methods signed at **Level 2**) cannot be moved.

5.3.5 Deleting a method

Menu item: **Method ▶ File ▶ Method manager... ▶ Method manager ▶ [Edit] ▶ Delete...**

The selected methods and all method versions are deleted with the **[Edit] ▶ Delete...** menu item.

If the **Comment on modification of methods** option is enabled in the **Security settings** (see chapter 6.2.2.4, page 318), then the **Modification comment method** (see chapter 5.2.7, page 252) dialog window initially appears when deleting methods.



NOTICE

Locked methods (methods signed at **Level 2**) cannot be deleted.

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
-------	----------------------

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
-------	------------------------

[Delete]

Delete signatures 2.

5.4 Method groups

5.4.1 Managing method groups

Dialog window: **Method ► File ► Method groups... ► Method groups**

Using the  icon 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. Click on the column title to sort the table 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

Comment on the method group.

[New]

Opens the **Properties - Method group - 'New Group'** dialog window for defining a new method group (*see chapter 5.4.2, page 266*).

[Properties]

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 266*).

[Delete]

Deletes the method group selected in the table.

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 to 220 °C (Increment: 1)
Default value	120 (oil), 110 (biodiesel), 200 (PVC) °C

Temperature correction

Specification of how many °C the heating block temperature needs 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 5.5.3, page 271*).

Input range	-9.9 to 9.9 °C (Increment: 0.1)
Default value	1.6 (oil), 0.9 (biodiesel), 0.8 (PVC) °C
Selection	auto

4 positions

The 4 positions of a block can be started and stopped separately. The 4 determinations of the multiple determination can also be started directly at the instrument by pressing the start buttons. Stopping is not possible at the instrument. Only the determinations that have been started and stopped are taken into account in the statistics.

Start delay

Waiting time until starting the measurement. It is shown in the **Work-place** program part by a time display that counts down.

Input range	0 to 1000 min (Increment: 1)
Default value	0 min

Max. start conductivity

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

If this check box is activated, whether the conductivity in the measuring vessel is higher than the defined maximum conductivity is checked each time a determination is started. If this is the case, a prompt appears asking whether the determination is to be started or not despite this.

Editable only if **Max. start conductivity = on**, otherwise inactive.

Input range	1 to 400 µS/cm (Increment: 1)
Default value	20 µS/cm

Stop criteria

Time

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

Time until the automatic stop of the determination.

Input range	0.1 to 99999.9 h (Increment: 0.1)
Default value	24.0 h

Conductivity

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

Conductivity limit value. The determination is ended automatically when this value is reached.

Input range	1 to 400 µS/cm (Increment: 1)
Default value	400 (oil, PVC), 200 (biodiesel) µS/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).

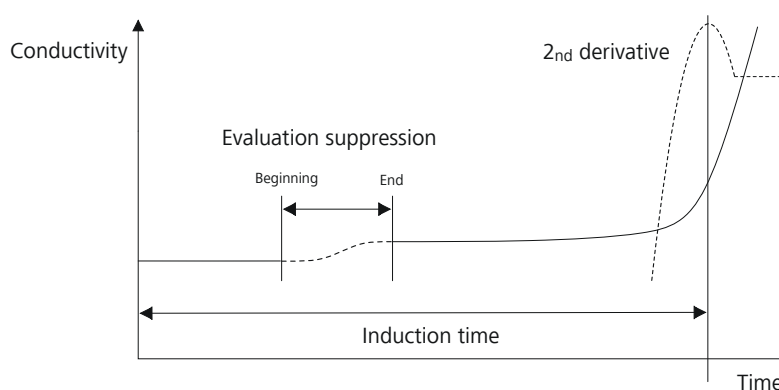
5.6.2 Evaluation - Parameters

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 calculation formulas.

Oil, biodiesel

Selection	on off
Default value	on

PVC

Selection	on off
Default value	off

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.

Entry	1 ... 40 characters
Default value	'empty'

Properties

Formula

Calculation formula, which can either be edited directly or can be created using the formula editor after pressing Σ (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).

Entry	64 characters
Selection	h s min days m y μS/cm °C
Default value	h

Decimal places

Selection of the number of decimal places the user-defined result is to be displayed with in the report and the result view of the database (internally the result is always saved with the highest possible number of decimal places). This parameter is ignored for results of **Text** or **Date/Time** type.

Input range	0 to 6
Default value	1

Assignment

Assignment of the result to one of the 25 possible result columns **RS01 ... RS25** in the determination overview in which the result is entered. Only the columns that are still open are provided.

Selection	first unallocated result variable RS01 ... RS25
Default value	first unallocated result variable

Description

Freely selectable description of the user-defined result.

Entry	1024 characters
Default value	'empty'

Input range	-1.00 E+99 to 1.00 E+99 'Unit of the result'
Default value	0.00 'Unit of the result'

Upper limit

Upper limit value for the selected result, which can either be edited directly or can be created using the formula editor after pressing Σ .

Input range	-1.00 E+99 to 1.00 E+99 'Unit of the result'
Default value	0.00 'Unit of the result'

Message

Displays the message to be sent when the limit values for the selected result are exceeded.

The text editor for entering or editing the message is opened with or by double-clicking on the text field. The message defined here appears if the lower limit value is undershot or the upper limit value is exceeded.

Entry	Text (unlimited)
-------	-------------------------

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, an acoustic signal will be emitted.

Action

If the lower limit value is not reached or if the upper limit value is exceeded for the monitored result, then one of the following actions will be executed automatically:

Selection	Document message only Display and document message
Default value	Display and document message

Document message only

The message that the result is outside the limit values is saved automatically in the determination.

Evaluation sensitivity

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



NOTICE

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 to 10 pixels
Default value	1 pixels

2nd derivative



NOTICE

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 to 10 pixels
Default value	1 pixels

Tangents



NOTICE

These settings are used for displaying the curve for the saved determination in the **Database** program part.

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 menu items:

- *Configuration - File menu*
Exporting, importing, backing up and restoring configuration data.
- *Configuration - View menu*
Changing layout, loading views, saving views, 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 325</i>).
Import...	Import configuration data (<i>see chapter 6.3.1.2, page 326</i>).
Backup ►	
Automatically	Back up configuration data automatically (<i>see chapter 6.3.2.1, page 328</i>).
Manually	Back up configuration data manually (<i>see chapter 6.3.2.2, page 329</i>).
Print (PDF)... ►	
 User administration	Outputs the user administration data as PDF file (<i>see chapter 6.2.1.1, page 304</i>).
 Security settings	Outputs the security settings as PDF file (<i>see chapter 6.2.2.1, page 313</i>).
 Logout...	Logs out user (<i>see chapter 2.2.3, page 12</i>)
Exit	Exits the program.

6.1.4 Configuration - Toolbar

Program part: **Configuration**

	Manage users and groups of users with access permissions, signature permissions and options (see chapter 6.2.1.1, page 304).
	Manage security settings with options for login, password protection, Audit Trail and electronic signature (see chapter 6.2.2.1, page 313).
	Open the Audit Trail (see chapter 6.4, page 335).
	Logs out user (see chapter 2.2.3, page 12).
	Modify layout of loaded configuration view (see chapter 4.1.7.2, page 101).
	Load a saved configuration view (see chapter 4.1.7.3, page 101).
	Save current configuration view (see chapter 4.1.7.4, page 102).
	Opens StabNet Help.

6.1.5 Configuration - Subwindows

Program part: **Configuration**

Selection

The following subwindows can be displayed in the main window:

- *Devices*
Shows the automatically detected devices.
- *Sensors*
Display of the data for all defined sensors.
- *Temperature coefficients*
Display of the Q10 factors and Arrhenius coefficients of different samples.
- *Accessories*
Display of the data for all defined accessory parts.

Representation

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.

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*
Defining the number, arrangement and sequence of the subwindows for the current view.
- *Saving a view*
Saving the current view.
- *Loading a view*
Loading a saved view.
- *Renaming a view*
Renaming a saved view.
- *Deleting a view*
Deleting a saved view.

Saving 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.

Loading automatically

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

By default, views are opened with the following subwindows with the very first program start:

- **Configuration**
Devices, Sensors, Temperature coefficients

Permissions for determinations

Signature level 1

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

If this check box is activated, then users in this user group can sign determinations electronically at level 1.

Signature level 2 (Lock)

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

If this check box is activated, then users in this user group can sign determinations electronically at level 2 and at the same time lock them against further modifications.

Delete signatures level 2

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

If this check box is activated, then users in this user group can delete all signatures at level 2. This enables the determination to be edited again.

Permissions for Audit Trail

Delete records

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

If this check box is activated, then users in this user group can confirm the deletion of Audit Trail entries with their signature.



NOTICE

All signature permissions are switched on as default settings in the **Administrators** group, but they can also be switched off.

Executable methods

Only methods with signature level 2

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

If this check box is activated, then only methods with signature level 2 can be started at the workplace by users in this user group.

6.2.1.3.1 User - Details

6.2.1.3.3 Setting a start password

Dialog window: **Configuration ► Tools ► User administration... ► User administration ► [Set start password] ► Start password**

A start password can be assigned for the selected user with the **[Set start password]** button in the **User administration** dialog window. It is active only for newly created users or for those who once again have had their status set to **enabled**. The **Start password** dialog window opens.

Start password

Entry of a new start password. Password options are not used for the start password.

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

Confirm password

Confirmation of the start password.

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

6.2.2 Security settings

6.2.2.1 Security settings

Dialog: **Configuration** ► **Tools** ► **Security settings...** ► **Security settings**

Overview

Parameters for login, password protection, Audit Trail and electronic signatures can be configured in the **Security settings** dialog window. They are used primarily to ensure that work is performed in accordance with the safety requirements contained in FDA Guidance 21 CFR Part 11.

Security settings can be exported and imported. In this way these settings can be exchanged between different systems.

The security settings can be output as a PDF file with the **File ► Print (PDF)... ► Security settings** menu item.

Settings according to 21 CFR Part 11

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

If this check box is activated, then the FDA default settings pursuant to 21 CFR Part 11 will be activated on all tabs. At the same time, those check boxes which are required to be switched on pursuant to 21 CFR Part 11 will be displayed on the individual tabs against a gray background, meaning they can no longer be edited.



NOTICE

If the **Settings according to 21 CFR Part 11** check box is enabled, the **Modifying the document allowed** permission in the **Options** dialog under **Configuration ► Tools ► Options...** cannot be enabled.

Tabs

The security settings are configured on the following tabs:

- *Login / password protection*
Settings for login and password protection
- *Audit Trail / Changes*
Activation/deactivation of the Audit Trail and comments when methods, determinations or sample data are modified
- *Signatures*
Options for electronic signatures
- *Default reasons*
Definition of reasons for signing and modifying methods, determinations and sample data.

6.2.2.2 Login / password protection

Tab: **Configuration** ▶ **Tools** ▶ **Security settings...** ▶ **Security settings** ▶ **Login/Password protection**

On the **Login/Password protection** tab, it is defined whether the user must log in with name only or with name and password and how the password must be monitored and constructed.

Login policies

Enforce login with user name

If this check box is activated, then every time that the program starts, the login window will appear, in which the user must enter his/her user name. If this check box is deactivated, no login is necessary and the user logged in under Windows will be adopted as the user name. If this is the case, then all subsequent parameters are deactivated.

Selection	on off
Default value	off
	FDA default setting: on (can no longer be edited)

Enforce login with password

If this check box is activated, then every time there is a program start the login window will appear, in which the user must enter not only his or her

Selection	on off
Default value	off
	FDA default setting: on (can no longer be edited)

If this check box is activated, then the password will be monitored by **StabNet** in accordance with the subsequent parameters.

Selection	on off
Default value	on

If this check box is activated, then the password will be monitored in accordance with the parameters defined in Windows. The parameters for password protection are deactivated in this case.

Selection	on off
Default value	off



In order to prevent an unwanted login by means of the **Guest** user category that is defined by default in Windows when performing password monitoring with Windows, it is imperative that this user also be assigned a password or (even better) be deactivated.



If this option is enabled, then the user names in **Windows** and **StabNet** must necessarily match, because otherwise the user will no longer be able to log in to **StabNet**. In order to ensure this, once this selection has been made, the **Test login** dialog window (*see chapter 6.2.2.3, page 318*) appears in which the logged-in user must log in with his or her Windows password. If this test login fails, then the **Security settings** dialog will remain open.

If this check box is activated, then a user will be set to the **disabled** status as soon as the number of login attempts defined here has been exceeded. A user with the **disabled** status can no longer log in. The counter for the login attempts is reset for the respective user once he or she has logged in successfully.

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)
Input range	2 to 5
Default value	3

Message by e-mail

If this check box is activated, then an e-mail will be sent to the address defined under **[E-mail...]** as soon as the defined number of login attempts has been exceeded.

Selection	on off
Default value	off

[E-mail...]

This button opens the **Send e-mail** window (see chapter 6.2.2.7, page 321) for defining the e-mail parameters.

Logout policies

New login only for same user

If this check box is activated, then only the same user can log in again after a manual logout. Users with administrator rights can always log in. If this option is enabled, then the following option is automatically enabled and inactive.

Selection	on off
Default value	off



NOTICE

If the automatic logout is switched on (*see page 316*), then only the same user or a user with administrator rights can log in again, no matter what the setting for this option is.

Automatic logout after

If this check box is activated, then the user will be logged out automatically when no operating functions have been carried out with the keyboard or the mouse within this time. After this automatic logout, only a user belonging to the same user group as the previously logged-out user or a user with administrator rights can log in again.

Selection	on off
Default value	off

appear. If the validity period has expired, the user can only log in if he or she changes the password.

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)
Input range	1 to 999 Days
Default value	365 Days

6.2.2.3 Test login for password monitoring by Windows

Tab: **Configuration** ▶ **Tools** ▶ **Security settings...** ▶ **Security settings** ▶ **Login/Password protection** ▶ **Test login**

If the **Password monitoring by Windows** option (*see chapter 6.2.2.2, page 314*) is activated, then the Windows password of the user must be entered in this dialog window. The test login is used to check whether the user name matches the Windows user name.

User

Shows the current user name.

Password

Entry of the Windows password.

Password monitoring by Windows can be used only when the test login is successful.

6.2.2.4 Audit Trail / Modifications

Tab: **Configuration** ▶ **Tools** ▶ **Security settings...** ▶ **Security settings** ▶ **Audit Trail/Modifications**

The recording of the Audit Trail is switched on and off on the **Audit Trail/Modifications** tab. When a method, a determination or sample data is modified, it can also be defined whether or not a reason and a comment must be given for the modification.

Audit Trail

Enable Audit Trail

If this check box is activated, then all program actions will be automatically recorded that are defined as Audit Trail actions.

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)

Comment on modification of methods

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)

Selection	on off
Default value	off FDA default setting: on (can no longer be edited)

Selection	on off
Default value	off

Edit the selected reason.

Deletes the selected reason.

Dialog window: **Configuration ► Tools ► Security settings... ► Security settings ► Login/Password protection ► [E-mail...] ► Send e-mail**

E-mail address of the recipient.

Entry	200 characters
-------	----------------

Title for describing the message.

Entry	200 characters
-------	----------------

The message defined here is sent as an e-mail when the maximum permitted number of login attempts has been exceeded.

The text editor for entering or editing the message is opened with  or by double-clicking on the text field.

Entry	Text (unlimited)
-------	------------------

E-mail address of the sender.

Entry	200 characters
-------	----------------

Address of the SMTP mail server.

Entry	200 characters
-------	----------------

Port number of the SMTP mail server.

Input range **1 to 65536**

Default value	25
---------------	-----------

The parameters for program administration are defined on the following tabs:

- *Backup directories*
List of the defined backup directories.
- *Clients*
Information about the client on which **StabNet** is installed.

6.2.3.2.1 Backup directories

Table with the defined backup directories. Click on the column title to sort the table according to the selected column in either ascending or descending order. The **Default backup directory** directory is created during installation.

Add a new backup directory (see chapter 6.2.3.2.2, page 323).

Edit the selected backup directory (see [chapter 6.2.3.2.3, page 324](#)).

Delete the selected backup directory.



The **Default backup directory** cannot be deleted.

Dialog window: **Configuration ► Tools ► Program administration ► Backup directories ► [New] ► New backup directory**

Name for the backup directory.

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

Entry or selection (with ) of the path for the backup directory.

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



NOTICE

If the backup directory is on a network drive, the backup date should be added manually to the **Backup name** when backing up because the backup date information is not available when the data is restored.



NOTICE

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

6.2.3.2.3 Editing the backup directory

Dialog window: **Configuration ► Tools ► Program administration ► Backup directories ► [Edit] ► Edit backup directory**

Name

Name for the backup directory.

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



NOTICE

The **Default backup directory** created during installation cannot be renamed.

Directory

Entry or selection (with) of the path for the backup directory.

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



NOTICE

If the backup directory is on a network drive, the backup date should be added manually to the **Backup name** when backing up because the backup date information is not available when the data is restored.



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

6.2.3.3 Clients

Tab: **Configuration** ► **Tools** ► **Program administration** ► **Clients**

Table with information about the computers on which **StabNet** is installed. The table cannot be edited. Click on the column title to sort the table according to the selected column in either ascending or descending order.

Client ID

Displays the ID for the client that was entered during installation.

Computer name

Shows the name of the computer on which the client is installed.

Status

Shows whether **StabNet** has been started on the client (**active**) or not (**inactive**).

6.3 Configuration data

6.3.1 Export/Import

6.3.1.1 Exporting configuration data

Dialog window: **Configuration ► File ► Export... ► Export configuration data**

File ► Export... opens the **Export configuration data** dialog window in which the following parts of the configuration database can be selected for export:

Devices

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

Export configuration data for devices (see chapter 6.5, page 350).

Sensors

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

Export configuration data for sensors (see chapter 6.6, page 354).

Temperature coefficients

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

Export temperature coefficients (see chapter 6.7, page 364).

Export templates

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

Export saved export templates (*see chapter 4.4.3, page 155*).

Control chart templates

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

Export saved control chart templates (see chapter 4.4.2.1, page 149).

E-mail templates

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

Export saved e-mail templates (see chapter 6.3.3.1, page 330).

Security settings

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

Export security settings (see chapter 6.2.2.1, page 313).

User administration

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

Export user administration (see chapter 6.2.1.1, page 304).

[OK]

The **Save** dialog window for saving data, in which the name and directory for the export file must be entered, opens. The selected configuration data is then saved in a file with the extension **.mcfq**.

6.3.1.2 Importing configuration data

Dialog window: **Configuration** ► **File** ► **Import...** ► **Import configuration data**

The **Import configuration data** dialog window, in which the following parts of the configuration database can be selected for import, is opened with **File ► Import...** after selection of the ***.mcfg** file that is to be imported:



Data that is not present in the export file cannot be selected.

Devices

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

Import configuration data for devices (see chapter 6.5, page 350).

Sensors

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

Import configuration data for sensors (see chapter 6.6, page 354).

Temperature coefficients

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

Import temperature coefficients (*see chapter 6.7, page 364*).

Export templates

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

Import saved export templates (see chapter 4.4.3, page 155).

Control chart templates

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

Import saved control chart templates (see chapter 4.4.2.1, page 149).

E-mail templates

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

Import saved e-mail templates (*see chapter 6.3.3.1, page 330*).

Security settings

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

Import security settings (see chapter 6.2.2.1, page 313).

User administration

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

Import user administration (see chapter 6.2.1.1, page 304).

[OK]

The selected data is imported.

6.3.2 Backup/Restore

6.3.2.1 Backing up configuration data automatically

Dialog window: **Configuration ► File ► Backup ► Automatically ► Backup configuration data automatically**

Automatic backup

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

If this check box is activated, then the configuration database is saved automatically to the defined backup directory at the desired time interval. The entire configuration database (including method groups and methods) is saved at this time.

If this check box is deactivated, then the following parameters cannot be edited.

Last backup

Display of date and time of the last configuration data backup.

Next backup

Date and time at which the next backup is to be carried out.  opens the **Next backup** window to select the date (*see chapter 2.5.1, page 59*).

Default value	Last backup + 1 month
---------------	------------------------------

Interval

Entry of the time interval after which an automatic backup will take place. With each automatic or manual backup, the interval entered here will be added to the date of **Last backup** and shown in the **Next backup** field.

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

Backup directory

Selection of a pre-defined backup directory (see chapter 6.2.3.2.1, page 323).



6.3.2.2 Backing up configuration data manually

Dialog window: **Configuration ▶ File ▶ Backup ▶ Manually ▶ Backup configura-**
tion data manually

Backup target

Backup directory

Selection of a pre-defined backup directory (see chapter 6.2.3.2.1, page 323).



Backup name

Selection of an already existing name or entry of a new name for the backup file. If an existing backup file is selected, it will be overwritten.

Entry	50 characters
Selection	'Backup name'



[Start]

Start the manual backup of the complete configuration database (including method groups and methods).

6.3.2.3 Restoring configuration data

Dialog window: **Restore configuration data**

Backup directory

Selection of a directory predefined in the program administration that contains the backed-up configuration database.

Selection	'Backup directories'
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	0
36	0
37	0
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	0
48	0
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	0
59	0
60	0
61	0
62	0
63	0
64	0
65	0
66	0
67	0
68	0
69	0
70	0
71	0
72	0
73	0
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	0
100	0

Backup name

Selection of a backup file.

Selection	'Backup files'
☐	☒

Backup date

Display of the moment at which the configuration database was backed up. This information is not available if the backup file is located on a network drive.

Database name

Display of the name of the configuration database. If the backup file is located on a network drive, this information is not available.

Size

Display of the size of the configuration database in KB.

Save as

Display of the name under which the configuration database will be restored.

[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 of the e-mail template.

E-mail address of the recipient.

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.

Dialog: **Configuration** ► **Tools** ► **Templates** ► **E-mail templates...** ► **E-mail templates** ► **New...** / **Properties...** ► **Edit e-mail template**

Name of the e-mail template.

Entry	16 characters
-------	---------------

E-mail address of the recipient.

Entry	200 characters
-------	----------------

E-mail address of the sender.

Entry **200 characters**

Address of the SMTP mail server.

Entry	200 characters
-------	----------------

6.3.4 Options

6.3.4.1 Options - Overview

Dialog window: **Configuration ► Tools ► Options... ► Options**

General program properties can be set on the following tabs under **Tools ► Options...**:

- *General*
Selection of the dialog language.
- *Save*
Settings for saving on exiting the program.
- *PDF*
Settings for PDF files.

6.3.4.2 Options - General

Tab: **Configuration ► Tools ► Options... ► Options ► General**

Dialog language

Selection of the dialog language.



NOTICE

The program must be restarted for the modified setting to become effective.

Selection	German English Additional languages (dependent on installed language patches)
-----------	--

Appearance

Selection of the color theme.

Selection	StabNet Light Darcula
Default value	StabNet Light

6.3.4.3 Options - Save

Tab: **Configuration ► Tools ► Options... ► Options ► Save**

Save on closing

It can be defined here which settings are to be saved when the program is exited. If the option is **enabled**, the current view with its settings will be saved automatically when the program is exited. If the option is **disabled**, then any modifications that may have been made to the view will not be saved and the original, manually saved view will be loaded the next time that the program is started.

6.4.1.3.3 Audit Trail - View menu

Program window: **Configuration ► Tools ► Audit Trail... ► Audit Trail**

 Update	Update Audit Trail table (<i>see chapter 6.4.2.4, page 341</i>).
Column display...	Define columns for the Audit Trail table (<i>see chapter 6.4.2.2, page 339</i>).

6.4.1.3.4 Audit Trail - Filter menu

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 342</i>).
 Special filter...	Define and apply a special filter (<i>see chapter 6.4.3.1.4, page 342</i>).
 Remove filter	Removes the current filter (<i>see chapter 6.4.3.1.5, page 346</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 349</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	Opens StabNet Help.
About	Displays 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 336</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 342</i>).

Client

Name of the client on which the action was carried out or which is affected by the action.

Category

Program part to which the action belongs.

Action

Brief 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 339*).

Update

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:

- **Dragging the margin between column titles:**
Sets the column width
- **Double-clicking on the margin between column titles:**
Sets the optimal column width
- **Dragging 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.

>|

Jumps to last set of entries in the Audit Trail table.

6.4.2.4 Updating the Audit Trail

Menu item: **Audit Trail ► View ► Update**

The Audit Trail table is updated with the **View ► Update** menu item or with the  icon.



NOTICE

The Audit Trail table is automatically updated when it is opened, but not afterwards.

6.4.3 Audit Trail - Functions

6.4.3.1 Filtering the Audit Trail

6.4.3.1.1 Audit Trail - Filter selection

Program window: **Configuration ► Tools ► Audit Trail... ► Audit Trail**

The following possibilities exist for filtering entries in the Audit Trail table:

Filter

Selection of the filter with which the Audit Trail table is to be filtered.

Selection	All entries Quick filter Temporary filter 'Filter name'
Default value	All entries

All entries

The table is shown unfiltered.

Quick filter

The table is filtered according to the most recently defined quick filter (see chapter 6.4.3.1.3, page 342).

Temporary filter

The table is filtered according to the special filter that was most recently defined but not yet saved (see chapter 6.4.3.1.4.1, page 342).

'Filter name'

The table is filtered according to the selected and saved special filter (see chapter 6.4.3.1.4.1, page 342).

Device name

Designation of the device.

Device type

Type of device.

Device serial number

Serial number of the device.

Status

Device status. A device that is ready has the status **ok** shown in green, a device that is not ready has the **not ok** status shown in red.

Set to work

Date on which the device was added to the device table.

Next GLP test

Date on which the next GLP test is due. If GLP monitoring is enabled 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.

**NOTICE**

Lines that contain red entries will also show the line number highlighted 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**
Dragging the margin between column titles
- **Sets the optimal column width**
Double-clicking on the margin between column titles

- **Moves the column to the required location**
Dragging the column title

Functions

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

Delete	Deletes the selected device. Only devices in the not ok status can be deleted (<i>see chapter 6.5.2.2, page 352</i>).
Properties...	Edit the selected device (<i>see chapter 6.5.3, page 353</i>).
Column display...	Define columns for the device table (<i>see chapter 6.5.2.3, page 352</i>).
Print (PDF)...	Output of the device table as a PDF file (<i>see chapter 6.5.2.4, page 353</i>).
Initialize	Initializes the selected device.

6.5.2.2 Deleting a device

Menu item: **Configuration ► Devices ► [Edit] ► Delete**

The device selected in the device table is deleted with **[Edit] ► Delete**.



NOTICE

Only devices in the **not ok** status can be deleted (i.e. devices that are not connected).

6.5.2.3 Devices - Column display

Dialog: **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

Shows all the fields that can be shown as columns in the device table.

Columns displayed

Shows all the fields that will be shown as columns in the device table. The **Device name**, **Device type**, **Device serial number**, **Status**, **Set to work**, **Next GLP test** and **Remarks** columns are displayed by default. The **Device name** and **Device type** columns are always present and cannot be removed.



Adds the selected column to the table.



Removes 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: **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 output in the required format as a PDF file and opened directly in Acrobat Reader, where it can then be printed 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



Table view

- **Sets the column width**
Dragging the margin between column titles
- **Sets the optimal column width**
Double-clicking on the margin between column titles
- **Moves the column to the required location**
Drag the column title with left mouse button held pressed down.

The Edit menu beneath the sensor table contains the following menu items:

New... ►	Selection of the sensor type that is to be newly created (<i>see chapter 6.6.2.2, page 355</i>).
Conductivity sensor...	Add conductivity sensor.
Temperature sensor...	Add temperature sensor.
Delete	Deletes the selected sensor (<i>see chapter 6.6.2.3, page 356</i>).
Properties...	Edit the properties of the selected sensor (<i>see chapter 6.6.3.1, page 357</i>).
Column display...	Define columns for the sensor table (<i>see chapter 6.6.2.4, page 356</i>).
Print (PDF)...	Outputs the sensor table as a PDF file (<i>see chapter 6.6.2.5, page 357</i>).

Menu item: **Configuration** ► **Sensors** ► **[Edit]** ► **New...** ► **'Sensor type'**

New conductivity sensors and temperature sensors must always be created and configured manually with the **[Edit] ► New...** menu and the selection of the sensor type.

After the sensor type has been selected, the **Sensor** - dialog window is opened for the editing of the data of the new sensor (*see chapter 6.6.3.2, page 358*). All fields have the default settings at this time.

6.6.2.3 Delete sensor

Menu item: **Configuration** ► **Sensors** ► **[Edit]** ► **Delete**

The sensor selected in the table can be deleted with the **[Edit] ► Delete** menu item.

6.6.2.4 Sensors - Column display

Dialog: **Configuration** ► **Sensors** ► **[Edit]** ► **Column display...** ► **Column display**

The **[Edit] ► Column display...** menu item is used to open the **Column display** dialog window for selecting the columns that are to be displayed in the Sensor table and for defining their sequence.

Columns available

Shows all fields which can be displayed as columns in the overview table for the sensors.

Columns displayed

Display of all fields which are displayed as columns in the overview table for the sensors. In the default settings, the **Sensor name**, **Sensor type**, **Cell constant**, **Set to work**, **Expiry date** and **Next calibration** columns are displayed in this sequence. **Sensor name** and **Sensor type** are fixed in place and cannot be removed.



Adds the selected column to the table.



Removes 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.

6.6.2.5 Printing the sensor list

Dialog: **Configuration** ▶ **Sensors** ▶ **[Edit]** ▶ **Print (PDF)...** ▶ **Print list of sensors (PDF)**

The **Print list of sensors (PDF)** dialog window is opened with **[Edit] ► Print (PDF)....**

Orientation

Selection of the printing orientation.

Selection	Portrait Landscape
Default value	Portrait

Portrait

Output of the sensor table in portrait format.

Landscape

Output of the sensor table in landscape format.

[OK]

The sensor table is output in the required format as a PDF file and opened directly with Acrobat Reader, where it can then be printed out and/or saved.

6.6.3 Sensor properties

6.6.3.1 Editing the sensor properties

Dialog window: **Configuration ▶ Sensors ▶ [Edit] ▶ Properties... ▶ Sensor - 'Name'**

The properties window for the sensor selected in the sensor table, in which the parameters of the sensor can be edited, is opened with the **[Edit] ► Properties...** menu item in the **Sensors** subwindow . It consists of the following tabs:

Sensor type = Temperature sensor

- *Sensor*
General information about the sensor, such as sensor name, sensor type, set to work, etc.
- *Calibration data*
Information about the calibration of the temperature sensor.

Sensor type = Conductivity sensor

- *Sensor*
General information about the sensor, such as sensor name, sensor type, set to work, etc.
- *Calibration data*
Information about the calibration of the conductivity sensor.
- *Limit values*
Definition of the limit value monitoring of the cell constant.

6.6.3.2 Properties - Sensor

Tab: **Configuration** ▶ **Sensors** ▶ **[Edit]** ▶ **Properties...** ▶ **Sensor - 'Sensor name'**

Sensor name

Name of the sensor.

Freely selectable name for the sensor.

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

Sensor type

Display of the selected sensor type. (**Conductivity sensor** or **Temperature sensor**).

Order number

Order number of the sensor.

Entry	24 characters
Default value	'empty'

Sensor serial number

Serial number of the sensor.

Entry	15 characters
Default value	'empty'

Comment

Possibility of entering remarks about the sensor.

Entry	24 characters
Default value	'empty'

Set to work

The current date is entered automatically in this field at the time a new sensor is entered or applied. When editing an existing sensor, the date can be selected by pressing  in the Calendar help window. The start-up date is used for sensor monitoring (**Set to work + Working life = Expiry date**).

Sensor monitoring

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

The working life of the sensor is monitored when this check box is activated.

Working life of the sensor in days. If a value is entered here, then the **Expiry date** will be automatically adjusted.

Input range	0 to 999 Days
Default value	999 Days

Expiry date of the sensor. This date can be selected by clicking on in the **Select date** dialog window (*see chapter 2.5.1, page 59*). After a date has been entered, the value for the **Working life** will be automatically adjusted.

Default value	Set to work+ 999 days
---------------	------------------------------

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...] opens the **Send e-mail** window (see chapter 2.6.1, page 62).

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

If this check box is activated, an acoustic signal will be emitted.

If during monitoring it is found that the validity period of the sensor 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 of the sensor has been exceeded will be automatically saved in the determination.

Display of the user who was logged in during the manual entry of the cell constant or at the time of the start of the automatic cell constant determination

Name of the device that was used to carry out the cell constant determination.

Serial number of the device that was used to carry out the cell constant determination.

Display of the position at which the cell constant was automatically determined

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

If this check box is activated, then the validity period of the cell constant is monitored

Validity period of the cell constant in days. If a value is entered here, then the date for **Next calibration** will be automatically adapted.

Input range	0 to 999 Days
Default value	999 Days

Date on which the next cell constant determination must be carried out.

This date can be selected by clicking on  in the **Select date** dialog window. After the date has been entered, the value for **Calibration interval** will be automatically adjusted.

Default value **Calibration date+ 999 days**

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, an acoustic signal will be emitted.

Action

If during monitoring it is found that the validity period of the cell constants 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 of the cell constants has been exceeded 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, the message that the validity period of the cell constants has been exceeded is automatically saved in the determination.

Do not start the determination

The determination is not started. The following message must be confirmed with **[OK]**.

6.6.3.4 Properties - Calibration data (temperature sensor)

Tab: **Configuration** ► **Sensors** ► **[Edit]** ► **Properties...** ► **Calibration data**

Calibration point 1

Temperature

Manual entry of the temperature.

Input range	-250.0 to 999.9 °C (Increment: 0.1)
Default value	0.0 °C

Resistance

Manual entry of the resistance.

Input range	0.000 to 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

Temperature

Input range	-250.0 to 999.9 °C (Increment: 0.1)
Default value	100.0 °C

Manual entry of the resistance.

Input range	0.000 to 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

Temperature

Input range	-250.0 to 999.9 °C (Increment: 0.1)
Default value	200.0 °C

Manual entry of the resistance.

Input range	0.000 to 999.999 Ohm (Increment: 0.001)
Default value	'empty' Ohm

Display of the user who was logged in during the entry of the calibration data.

Tab: **Configuration** ► **Sensors** ► **[Edit]** ► **Properties...** ► **Limit values**



NOTICE

This tab only appears for sensors of the **Conductivity sensor** type.

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 value for the cell constant.

User who undertook the assignment of values.

Expiry date of the temperature coefficient.

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**
Dragging the margin between column titles
- **Sets the optimal column width**
Double-clicking on the margin between column titles
- **Moves the column to the required location**
Dragging the column title

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 365</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>).
Properties...	Edit the selected temperature coefficient (<i>see chapter 6.7.3.1, page 367</i>).
Column display...	Define the columns for the table of temperature coefficients (<i>see chapter 6.7.2.4, page 366</i>).
Print (PDF)...	Output the table of temperature coefficients as a PDF file (<i>see chapter 6.7.2.5, page 367</i>).

Menu item: **Configuration** ► **Temperature coefficients** ► [Edit] ► New...

A new temperature coefficient is added manually to the temperature coefficients table with **[Edit] ► New... ► Arrhenius** or **[Edit] ► New... ► Q10**. The Properties window then opens automatically for editing the temperature coefficient. After the properties window has been closed, the temperature coefficient will be entered in the temp-

Columns displayed

Shows all the fields that will be shown as columns in the accessories table. The **Accessory name**, **Set to work** and **Expiry date** columns are displayed by default. The **Accessory name** column is always present and cannot be removed.



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.

6.8.2.5 Printing the accessories list

Menu item: **Configuration ► Accessories ► [Edit] ► Print (PDF)... ► Print list of accessories (PDF)**

The **Print list of accessories (PDF)** dialog window is opened with **[Edit] ► Print (PDF)...**

Orientation

Selection	Portrait Landscape
Default value	Portrait

Portrait

Output of the accessories table in portrait format.

Landscape

Output of the accessories table in landscape format.

[OK]

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

Selection	Document message only Display and document message Do not start the determination
Default value	Display and document message

The message that the working life of the accessories part has expired will be automatically saved with the determination.

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 accessories part has expired will be saved automatically with the determination.

The ongoing determination will be canceled automatically. 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, then the message or action defined below will be triggered.

Input range	0 to 99999
Default value	99999

Operating hours - Current value

Shows the number of operating hours of the filter to date. If the limit value is exceeded, the current value is displayed in **red**.

[Reset]

Resets the current value for the filter to **0**.

4	Measuring vessel cover gray This measuring position is not available for starting a determination (instrument 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 measured conductivity.

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.

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, then the message or action defined below will be triggered.

Input range	0 to 99999
Default value	99999

Operating hours - Current value

Shows the number of operating hours of the filter to date. If the limit value is exceeded, the current value is displayed in **red**.

[Reset]

Resets the current value for the filter to **0**.

Monitoring the molecular sieve**on | off** (Default value: **off**)

If this check box is activated, then the operating hours of the molecular sieve will be monitored.

Operating hours - Limit

Maximum permitted operating hours of the molecular sieve. If this value is exceeded, then the message or action defined below will be triggered.

Input range	0 to 99999
Default value	99999

Operating hours - Current value

Shows the number of operating hours to date of the particular molecular sieve. If the limit value is exceeded, the current value is displayed in **red**.

[Reset]

Resets the current value for the molecular sieve to **0**.

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.

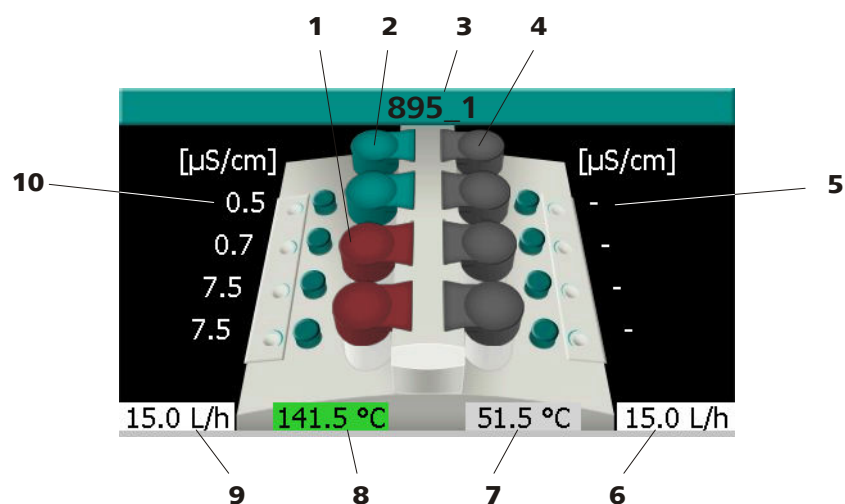


NOTICE

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.



8 How to proceed?

8.1 Audit Trail

8.1.1 Opening the Audit Trail

How to proceed?

- 1 Select the **Configuration** program part.
- 2 Click on the  icon or the **Tools ► Audit Trail...** menu item.
The **Audit Trail** dialog opens.
- 3 If required, adjust the column display.

8.1.2 Filtering the Audit Trail

How to proceed?

Opening the "Audit Trail" dialog window

- 1 Select the **Configuration** program part.
- 2 Click on the  icon or the **Tools ► Audit Trail...** menu item.
The **Audit Trail** dialog opens.

Filtering can now be done via quick filter or special filter in the **Audit Trail** dialog window:

Quick filter

- 1 Click on the  icon 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 Audit Trail 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.

- 6 Click on **[Save]**.

The special filter is saved under 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  icon or the **Tools ► Audit Trail...** menu item.
The **Audit Trail** dialog 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 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.



NOTICE

Audit Trail entries are archived in text format. They cannot be imported back into the Audit Trail table.

8.1.5 Deleting the Audit Trail

How to proceed?



NOTICE

Audit Trail entries can only be deleted if they have previously been archived.

- 1 Select the **Configuration** program part.
- 2 Click on the  icon or the **Tools ► Audit Trail...** menu item.
The **Audit Trail** dialog opens.
- 3 Archive desired Audit Trail entries.
- 4 Click on the **File ► Delete** menu item.
The **Delete Audit Trail** dialog opens.
- 5 Select the desired option (**All archived records** or **Archived records until** including date selection) under **Selection**.
- 6 User 1: Enter **User** and **Password**.
- 7 User 2: Enter **User** and **Password**.
- 8 Click on **[OK]**.

The selected, archived Audit Trail data sets are then deleted.

The **Backup configuration data manually** dialog 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.



NOTICE

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.
The **Backup configuration data automatically** dialog opens.
- 3 Enable the **Automatic backup** check box.
- 4 Enter an **Interval** for backup monitoring or a date for the next backup in the **Next backup** field.
- 5 Select the directory for the backup in the **Backup directory** field.
- 6 Click on **[OK]**.
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.

Exporting methods

- 1 Select the **Method** program part.

2 Enter or select **User**, **Password**, **Reason** and **Comment**.

3 Click on **[Sign]**.

The selected determination will be signed at level 1.



NOTICE

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

Signature 2



NOTICE

Determinations can only be signed at level 2 if the user belongs to a user group with the corresponding permission (*see chapter 6.2.1.2.3, page 307*).

1 Click on the  symbol or the **Determinations ► Sign ► Signature 2...** menu item.

The **Signature Level 2** 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 2.



NOTICE

Determinations signed at level 2 are **locked**, i.e. they can neither be reprocessed nor deleted. In order to be able to edit such determinations again, the signatures on level 2 must first be deleted.

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 icon.



NOTICE

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.

8.4.2 Closing a database

How to proceed?

Closing a single database

- 1 Select the **Database** program part.
- 2 Click on the  icon or the **File ► Close** menu item.

The selected database is closed.

Closing all databases

- 1 Select the **Database** program part.
- 2 Click on the **File ► Close all** menu item.

All opened databases will be closed.

8.4.3 Creating a database

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  icon or the **File ► Database manager...** menu item.

The **Database manager** dialog opens.

- 3 Click on the **Edit ► New...** menu item.



NOTICE

Existing databases cannot be overwritten, i.e., they must first be deleted so that the database can be restored under its old name.

8.4.6 Deleting a database

How to proceed?

- 1 Select the **Database** program part.
- 2 Click on the  icon or the **File ► Database manager...** menu item.
The **Database manager** dialog opens.
- 3 Select the desired database.
- 4 Click on the **Edit ► Delete** menu item.
The selected database is deleted.



NOTICE

Databases that are open cannot be deleted.

8.5 Configuration data

8.5.1 Exporting configuration data

How to proceed?

- 1 Select the **Configuration** program part.
- 2 Click on the **File ► Export...** menu item.
The **Export configuration data** dialog opens.
- 3 Select the desired configuration data.
- 4 Click on **[OK]**.
The **Export configuration data** dialog window closes and the **Save** dialog window opens.

- 2 Click on the  symbol or the **File ► Method manager...** menu item.

The **Method manager** dialog opens.

- 3 Select the desired method group in the **Method group** selection list.

- 4 Select the desired method from the table.

- 5 Click on the **Edit ► Delete...** menu item.

The selected methods with all their method versions are deleted.

If the **Comment on modification of methods** check box is activated in the **Security settings**, then the **Modification comment method** dialog window will be displayed before the method is deleted.



NOTICE

Locked methods cannot be deleted.

8.6.6 Exporting a method

How to proceed?

- 1 Select the **Method** program part.
- 2 Click on the  symbol or the **File ► Method manager...** menu item.

The **Method manager** dialog opens.

- 3 Select the desired method group in the **Method group** selection list.

- 4 Select the desired method from the table.

- 5 Click on the **Edit ► Export...** menu item.

The **Select directory for export** dialog 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.

- 3 Select the desired method group in the **Method group** selection list.
- 4 Select the desired method.

Signature 1



NOTICE

Methods 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 307*).

- 1 Click on the **Sign ► Signature 1...** menu item.
The **Signature Level 1** dialog opens. If the selected method 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 method will be signed at level 1.



NOTICE

Methods can be signed more than once at level 1 and can also be edited and deleted. If the edited method is saved as a new method version, all the signatures will be automatically deleted, i.e. the method must be signed again.

Signature 2



NOTICE

Methods can only be signed at level 2 if the user belongs to a user group with the corresponding permission (*see chapter 6.2.1.2.3, page 307*).

- 1 Click on the **Sign ► Signature 2...** menu item.

8.6.10 Printing a method report

How to proceed?

- 1 Select the **Method** program part.
- 2 Click on the  icon or the **File ► Open...** menu item.
The **Open method** dialog opens.
- 3 Select the desired method group in the **Method group** selection list.
- 4 Select the desired method in the table or enter a name in the **Method name** field.
- 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 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. This means that in order to back up methods the configuration data must be backed up manually or automatically. Another possible way is to export the methods and then to store 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 opens.

- 2 Click on the  symbol or the **File ► Method manager...** menu item.
The **Method manager** dialog opens.
- 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 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.



NOTICE

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  icon or the **File ► Method groups...** menu item.
The **Method groups** dialog 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.

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 icon.



NOTICE

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.

5 Select the desired determinations.

6 Click on the **File ► Print ► Determination overview...** menu item.

The **Print determination overview (PDF)** dialog opens.

7 Under **Selection**, select the 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.

8.9 No help available



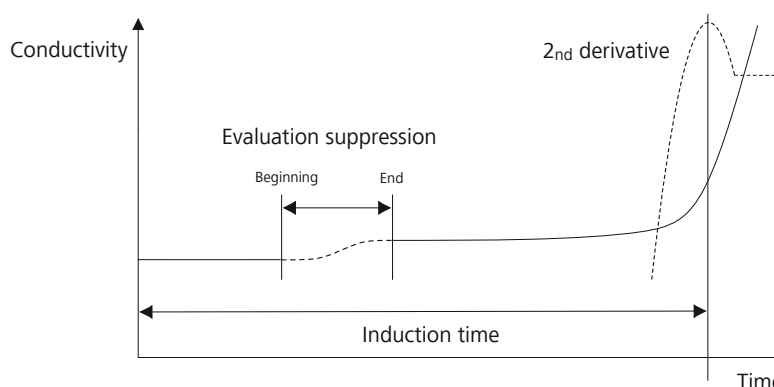
NOTICE

There is unfortunately no help available for this topic.

Induction time

The induction time is the **time to the break point** of the *conductivity* vs. *time* curve recorded with the instrument. The induction time is a characteristic for the oxidation stability of the analyzed sample.

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 and which can be displayed in the curve window of the database. To enable detection of a break point, certain criteria must be met 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 rises slightly in steps long before the actual induction time (e.g. through side reactions or with volatile compounds). To prevent this rise being evaluated as an end-point, the user can suppress the evaluation for the desired range.

Method

Instruction regarding the determination of a sample. Contains method, evaluation and result parameters.

Method group

Collection of *methods*, offering the possibility of defining access permissions.

Q₁₀ factor

Factor by which the reaction speed increases when the temperature is increased by 10 K.

Reprocessing

The reprocessing option opens the **Reprocess** window, in which the results of the determinations highlighted in the determination overview can be recalculated. The window comprises the following three areas:

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