

# StabNet 1.1



Online Help

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## **StabNet 1.1**

## **Online Help**

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[illegible][illegible]



StabNet 1.1

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■ ■ ■ ■ ■ IX



# 1 Introduction

## 1.1 Welcome to StabNet

Introduction



### **StabNet**

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

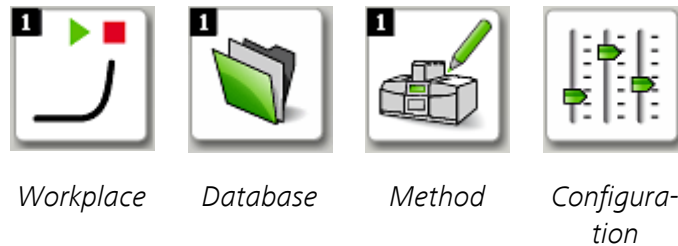
### **Overview of the main program features**

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

## 1.2 Operation

## Introduction

The modern **user interface** makes it 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.

### 1.3 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 267*)
- 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 make up a simple measurement system. **StabNet** is however scalable and grows with operational requirements. As soon as data security and central data management make it necessary, **StabNet** is installed as a **client/server configuration**. The **StabNet** database is then installed on a server. All measurement and office computers work as clients. All results are stored centrally in this network and can be accessed and processed by all Client PCs. All clients also access the same pool of methods.

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

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

## Overview of functions

- Object-oriented client/server database (see Chapter 6.2.3.1, page 322).
- Layout manager for the database view (see Chapter 4.1.7, page 101).
- Quick filters (see Chapter 4.5.2.5.3, page 173).
- Efficient search functions (see Chapter 4.5.2.4, page 170).
- Access permissions control for every database (see Chapter 4.3.5.3, page 111).
- Automatic database backup (see Chapter 4.3.5.4, page 111).
- Fast overview of results or specially designed control charts (see Chapter 4.5.2.15, page 189).
- Curve overlay (see Chapter 4.5.2.16, page 198).
- Reprocess determinations (see Chapter 4.5.2.17, page 203).

## 1.6 Communication

## Introduction

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

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

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

## Overview of functions

- Various export formats, e.g. XML, CSV, TXT (see *Chapter 4.4.3.2.1, page 157*).
- Report templates (see *Chapter 4.4.1.4.1.1, page 119*).
- E-mail functions for status messages, error messages or results (see *Chapter 2.6, page 63*).

## 1.7 Conformity

### Introduction

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

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

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

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

### Conformity-relevant properties of StabNet

- Conformity is priority in development and validation.
- Central user administration (*see Chapter 6.2.1.1, page 304*).
- Detailed access permissions (*see Chapter 6.2.1.2.2, page 307*).
- Password protection under StabNet or Windows (*see Chapter 6.2.2.2, page 314*).
- Digital signature on two levels (*see Chapter 2.3, page 15*).
- One signature each for methods and results.
- Documentation of all method and result modifications (*see Chapter 4.5.2.13, page 187*).
- Traceability thanks to detailed Audit Trail (*see Chapter 6.4.1.1, page 337*).

## 1.8 Versions

## Introduction

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

|                                      | StabNet 1.1<br>Full | StabNet 1.1<br>Multi |
|--------------------------------------|---------------------|----------------------|
| Product                              | 6.6068.112          | 6.6068.113           |
| Maximum number of instruments per PC | 4                   | 4                    |
| Conformity functions                 | •                   | •                    |
| User administration                  | •                   | •                    |
| Security settings                    | •                   | •                    |
| Traceability ("Audit Trail")         | •                   | •                    |
| Client/server support                |                     | •                    |
| Number of licenses                   | 1                   | 3                    |
| Additional licenses as an option     |                     | •                    |
| XML data export to LIMS              | •                   | •                    |
| Upgrade possible                     | •                   |                      |

## 1.9 Online help

## Introduction

## Calling up the help

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

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

## Symbols and conventions

The following symbols and formatting are used in this documentation:

|                                                                                     |                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.5.2 Device table                                                                  | Link to another help topic in which information is shown for the marked term.                                                                                               |
| <b>Method</b>                                                                       | <b>Dialog text</b><br>Designation for names of parameters, menu items, tabs and dialog windows in the software.                                                             |
| <b>100</b>                                                                          | Designation for parameter values in input fields.                                                                                                                           |
| <b>File ► New...</b>                                                                | Menu or menu item; Path needed to reach a certain point in the program.                                                                                                     |
| <b>[Next]</b>                                                                       | <b>Button</b>                                                                                                                                                               |
|    | <b>Formula editor</b><br>Formulae can be entered in fields with this symbol, and the formula editor opens when you click on the symbol ( <i>see Chapter 2.4, page 20</i> ). |
|    | <b>Instruction step</b><br>Carry out these steps in the sequence shown.                                                                                                     |
|   | <b>Caution</b><br>This symbol draws attention to possible damage to instruments or instrument parts.                                                                        |
|  | <b>Note</b><br>This symbol marks additional information and tips.                                                                                                           |

## 1.10 What is new in StabNet?

## Introduction

This chapter describes the changes that were made from StabNet 1.0 to StabNet 1.1.

### 1.10.1 New features

## New instrument firmware

| Instruments                         | Firmware version | Comment                                                                                                                                                                                           |
|-------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 892 Professional Rancimat           | 5.893.0014       | The new firmware can only be installed if version 5.893.0012 is already running on the instrument.<br><br>If the instrument still uses an older firmware version, please contact Metrohm Service. |
| 893 Professional Biodiesel Rancimat | 5.893.0014       |                                                                                                                                                                                                   |
| 895 Professional PVC Thermomat      | 5.893.0014       |                                                                                                                                                                                                   |

## Operating systems

With version 1.1 and higher, StabNet runs on the following operating systems:

- **32-bit version of**
  - Windows 8/8.1 Professional/Enterprise
  - Windows Server 2012 R2
- **64-bit version of**
  - Windows 8/8.1 Professional/Enterprise
  - Windows Server 2012 R2

## 2 General program functions

### 2.1 Program parts

#### 2.1.1 Program parts

General program functions

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

##### Workplace program part



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

##### Database program part



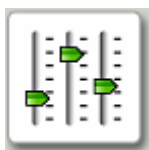
- Opening/Closing databases
- Managing databases
- Reprocessing
- Creating report templates

##### Method program part



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

##### Configuration program part



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



#### NOTE

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

### 2.1.2 Workplace - User interface

Program part: **Workplace**

### Workplace symbol



Clicking on the workplace symbol in the vertical bar on the left opens the program part **Workplace** while at the same time the workplace symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of workplaces currently opened (see *Chapter 3.2.2, page 69*).

## 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



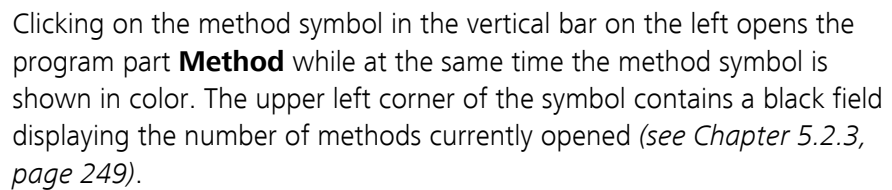
Clicking on the database symbol in the vertical bar on the left opens the program part **Database** while at the same time the database symbol is shown in color. The upper left corner of the symbol contains a black field displaying the number of databases currently opened (*see Chapter 4.2.2, page 106*).

## Elements

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

- ### 2.1.4 Method - User interface

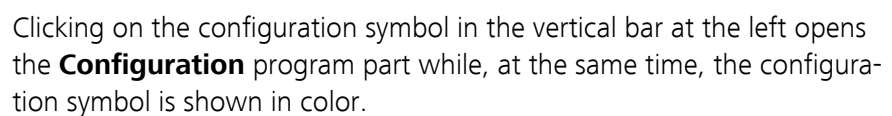
### Method symbol



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

- ### 2.1.5 Configuration - User interface

### Configuration symbol



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

- 11

## 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. In the case of client/server systems, this is on the server and applies globally for all clients (central user administration).

## 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 entered once cannot be deleted.
- **Passwords** must be **unique** per 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 according to 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 the status **inactive**. 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:

- Log in at program start
- Manual logout
- Automatic logout
- Change password

## Logging in

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

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

## User

Entry of the short name of the user.

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

## Password

Entry of the password.

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



## NOTE

Users who log in for the first time or users whose status has been reset from **disabled** or **removed** back to **enabled**, must log in with the **Start password** (see Chapter 6.2.1.3.1, page 311) assigned by the administrator. Afterwards, the window **Change password** will automatically be opened, in which a new password needs to be entered.

**[Change password]**

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

[Cancel]

The login is canceled, the program is terminated.

### 2.2.3 Logging out manually

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

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

### 2.2.4 Logging out automatically

Program part: **Configuration**

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

### 2.2.5 Changing the password

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



## NOTE

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

**[Change password]**

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



## NOTE

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

**Old password**

Entry of the previous password.

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

### New password

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

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

## Confirm password

Confirmation of the new password.

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

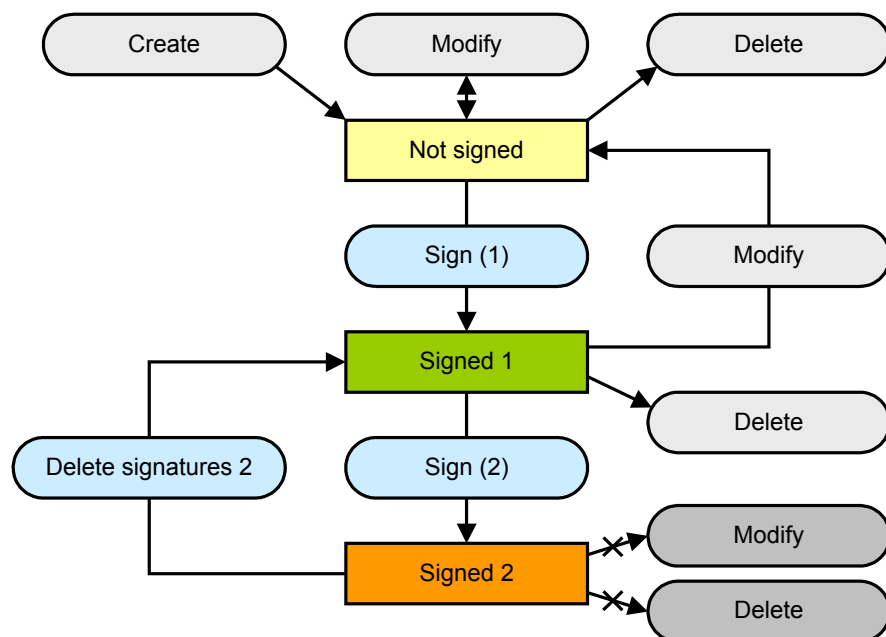
### 2.3.1 Rules for electronic signatures

### 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.



## Info

| Selection | Signature possible<br>(signature 2 exists) | Signature 1 not possible<br>Signature not possible<br>(accessed by other client) |
|-----------|--------------------------------------------|----------------------------------------------------------------------------------|
| 1         |                                            |                                                                                  |
| 2         |                                            |                                                                                  |
| 3         |                                            |                                                                                  |
| 4         |                                            |                                                                                  |
| 5         |                                            |                                                                                  |
| 6         |                                            |                                                                                  |
| 7         |                                            |                                                                                  |
| 8         |                                            |                                                                                  |
| 9         |                                            |                                                                                  |
| 10        |                                            |                                                                                  |
| 11        |                                            |                                                                                  |
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The selected method or determination cannot be signed as it is already marked to be signed on a different client.

|       |               |
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| Entry | 24 characters |
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|       |               |
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| Entry | 24 characters |
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| Selection | 'Selection from the default reasons' |
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|       |                 |
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| Entry | 1000 characters |
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Sign the method or determination. The window remains open.



## NOTE

Methods or determinations can be signed at level 1 only 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.



## NOTE

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<br>(signature 1 missing)   Signature not possible<br>(accessed by other client) |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 0         |                                                                                                                               |
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**Signature possible**

The selected method or determination can be signed.

**Signature 2 not possible (signature 1 missing)**

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

**Signature not possible (accessed by other client)**

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

## User

Entry of the user name (short name).

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

## Password

Entry of the password.

|       |               |
|-------|---------------|
| Entry | 24 characters |
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| Selection | 'Selection from the default reasons' |
|-----------|--------------------------------------|
| 1         | 1                                    |
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| 94        | 94                                   |
| 95        | 95                                   |
| 96        | 96                                   |
| 97        | 97                                   |
| 98        | 98                                   |
| 99        | 99                                   |
| 100       | 100                                  |

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

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

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

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

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

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

### Comment

Entry of a comment on the signature.

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

[Delete]

Delete signatures 2.



## NOTE

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

## 2.4 Formula editor

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.

The **Formula editor** dialog window contains the following elements:

- **Input field**  
Entry of the calculation formula (*see Chapter 2.4.1, page 20*).
- **Function buttons**  
Buttons for the rapid entry of operators and parentheses (*see Chapter 2.4.2, page 21*).
- **Variables**  
Selection of the variables available for the calculation formula (*see Chapter 2.4.3, page 23*).
- **Operators/Functions**  
Selection of the operators and functions available for the calculation formula (*see Chapter 2.4.4, page 26*).
- **Description**  
Description of the selected variables, operators or functions.

### 2.4.1 Input field

Dialog window: **Formula editor**

The calculation formula is entered in the input field of the formula editor. The following options are available for the entry:

## Entry via keyboard

- **Numbers**  
Numbers as well as mathematical functions can be entered directly via the keyboard.

- ### Entry using the function buttons

---

## Entry via selection

Dialog window: **Formula editor**

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

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.

**2.33** yields **2.3**



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



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

### 2.4.3.1 Variables - Overview

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.

The following types of variables are differentiated:

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



## NOTE

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                                                 |
|---------------|-------------------------------------------------------------|
| <b>METHOD</b> | Method for the sample determination ( <b>Text</b> ).        |
| <b>IDENT</b>  | Identification of the sample ( <b>Text, Number, Date</b> ). |
| <b>INFO1</b>  | Sample identification 1 ( <b>Text, Number, Date</b> ).      |
| <b>INFO2</b>  | Sample identification 2 ( <b>Text, Number, Date</b> ).      |
| <b>INFO3</b>  | Sample identification 3 ( <b>Text, Number, Date</b> ).      |

## 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               |
|-------------|---------------------------|
| <b>IND</b>  | Induction time            |
| <b>STAB</b> | Stability time            |
| <b>STD</b>  | Standard time             |
| <b>RS01</b> | Result 1 (user-defined).  |
| <b>RS02</b> | Result 2 (user-defined).  |
| <b>RS03</b> | Result 3 (user-defined).  |
| ...         |                           |
| <b>RS25</b> | Result 25 (user-defined). |

### 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 <b>(Number)</b> .                                             |
| STT           | Moment at which the determination was started <b>(Date)</b> .                                    |
| CONDSTART     | Conductivity in $\mu\text{S/cm}$ at the time of the start of the determination <b>(Number)</b> . |
| CONDEND       | Conductivity in $\mu\text{S/cm}$ at the time of the end of the determination <b>(Number)</b> .   |

#### 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 ( <b>Text</b> ). |
| FUN           | Full name of the logged-in user ( <b>Text</b> ).  |

#### 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                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Arithmetic:</b> <ul style="list-style-type: none"> <li>Addition (+)</li> <li>Subtraction (-)</li> <li>Multiplication (*)</li> <li>Division (/)</li> <li>Potentialiation (^)</li> </ul>                                                                  | <b>Arithmetic:</b> <ul style="list-style-type: none"> <li>Exponential function (Exp)</li> <li>Natural logarithm (Ln)</li> <li>Common logarithm (Log)</li> <li>Square root (Sqrt)</li> <li>Absolute value (Abs)</li> <li>Fraction (Frac)</li> <li>Integer (Int)</li> <li>Round integer (Round)</li> <li>Sign (Sign)</li> <li>Quantiles of the Student's t-distribution (Tinv)</li> </ul> |
| <b>Logic:</b> <ul style="list-style-type: none"> <li>AND</li> <li>OR</li> </ul>                                                                                                                                                                            | <b>Date/Time:</b> <ul style="list-style-type: none"> <li>Time()</li> <li>Time(Date)</li> <li>Time(Date+Time)</li> </ul>                                                                                                                                                                                                                                                                 |
| <b>Comparison:</b> <ul style="list-style-type: none"> <li>Equal to (=)</li> <li>Greater than (&gt;)</li> <li>Greater than or equal to (&gt;=)</li> <li>Less than (&lt;)</li> <li>Less than or equal to (&lt;=)</li> <li>Not equal to (&lt;&gt;)</li> </ul> | <b>Type conversion:</b> <ul style="list-style-type: none"> <li>NumberToText</li> <li>NumberToTime</li> <li>TextToNumber</li> <li>TextToTime</li> <li>TimeToNumber</li> <li>TimeToText</li> </ul>                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                            | <b>Text:</b> <ul style="list-style-type: none"> <li>TextPosition</li> <li>SubText</li> <li>Trim</li> </ul>                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                            | <b>Miscellaneous:</b> <ul style="list-style-type: none"> <li>Case</li> <li>Error</li> </ul>                                                                                                                                                                                                                                                                                             |

### 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 | ^            |
|            | *, /         |
|            | +, -         |
| 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                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>both operands of the same type:</b>                                                                                                                       |          |        |                                                                          |                                                                                                                                                                                        |
| Number                                                                                                                                                       | Number   | Number | <b>1.2 + 3 = 4.2</b>                                                     | –                                                                                                                                                                                      |
| Text                                                                                                                                                         | Text     | Text   | <b>"Metrohm" + "AG" = "Metrohm AG"</b>                                   | 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 | <b>Time(1998;04;06) + Time(1964;02;03) = 59300.875</b> (for UTC+1)       | Result: Number of days calculated from December 1899, dependent on the system time                                                                                                     |
| <b>Operands of a different type:</b> The operand which does not correspond to the result type is converted to the relevant result type before the operation. |          |        |                                                                          |                                                                                                                                                                                        |
| Number                                                                                                                                                       | Text     | Text   | <b>1.2 + "Metrohm" = "1.2Metrohm"</b>                                    | –                                                                                                                                                                                      |
| Text                                                                                                                                                         | Number   | Text   | <b>"Metrohm" + 1.2 = "Metrohm1.2"</b>                                    | –                                                                                                                                                                                      |
| Number                                                                                                                                                       | Time     | Number | <b>2.0 + Time(1999;11;7) = 36472.96</b> (for UTC+1)                      | Result: Number of days calculated from December 1899, dependent on the system time                                                                                                     |
| Time                                                                                                                                                         | Number   | Number | <b>Time(1999;10;7) + 2.0 = 36441.92</b> (for UTC+2)                      | Result: Number of days calculated from December 1899, dependent on the system time                                                                                                     |
| Text                                                                                                                                                         | Time     | Text   | <b>"Metrohm" + Time(1999;10;7) = "Metrohm1999-10-07 00:00:00 UTC+2"</b>  | Before the operation, the operand of the <b>Date/Time</b> type is converted to <b>Text</b> .                                                                                           |
| Time                                                                                                                                                         | Text     | Text   | <b>Time(1999;01;7) + "Metrohm" = "1999-01-07 00:00:00 UTC +1Metrohm"</b> | The same rules apply here as for the previous operation.                                                                                                                               |



## Examples

| Operand1                                                                                                                                                     | Operand2 | Result | Example                                                                                           | Remark                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>                                                                                                                            |          |        |                                                                                                   |                                                                                    |
| Number                                                                                                                                                       | Number   | Number | <b>1.2 * 3 = 3.6</b>                                                                              | –                                                                                  |
| Text                                                                                                                                                         | Text     | Text   | <b>"Metrohm" * "AG" = invalid</b>                                                                 | This operation is not allowed.                                                     |
| Time                                                                                                                                                         | Time     | Number | <b>Time(1998;05;06) * Time(1902;02;03) = 27478004.545</b><br>(for UTC+1 or +2 in the summer time) | Result: Number of days calculated from December 1899, dependent on the system time |
| <b>Operands of a different type:</b> The operand which does not correspond to the result type is converted to the relevant result type before the operation. |          |        |                                                                                                   |                                                                                    |
| Number                                                                                                                                                       | Text     | Text   | <b>2 * "Metrohm" = "MetrohmMetrohm"</b>                                                           | –                                                                                  |
| Text                                                                                                                                                         | Number   | Text   | <b>"Metrohm" * 2 = "MetrohmMetrohm"</b>                                                           | –                                                                                  |
| Number                                                                                                                                                       | Time     | Number | <b>2.0 * Time(1999;10;7) = 72879.833</b><br>(for UTC+2)                                           | Result: Number of days calculated from December 1899, dependent on the system time |
| Time                                                                                                                                                         | Number   | Number | <b>Time(1999;10;7) * 2.0 = 72879.833</b><br>(for UTC+2)                                           | Result: Number of days calculated from December 1899, dependent on the system time |
| Text                                                                                                                                                         | Time     | Text   | <b>"Metrohm" * Time(1999;10;7) = invalid</b>                                                      | This operation is not allowed.                                                     |
| Time                                                                                                                                                         | Text     | Text   | <b>Time(1999;10;7) * "Metrohm" = invalid</b>                                                      | 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                         |
|-----------------------------------|----------|--------|-----------------------------------|--------------------------------|
| <b>Operands of the same type:</b> |          |        |                                   |                                |
| Number                            | Number   | Number | <b>1.2 / 3 = 0.4</b>              | Operand2 must not be zero!     |
| Text                              | Text     | Text   | <b>"Metrohm" / "AG" = invalid</b> | This operation is not allowed. |

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

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

**Operand1 ^ Operand2**

## Examples

**Operands of the same type:**

| Operand1 | Operand2 | Result | Example                                                    | Remark                         |
|----------|----------|--------|------------------------------------------------------------|--------------------------------|
| Text     | Number   | Text   | <b>"Metrohm" ^ 1.2 = invalid</b>                           | This operation is not allowed. |
| Number   | Time     | Number | <b>1.2 ^ Time(1900;02;03) = 586.198</b><br>(for UTC+1)     | –                              |
| Time     | Number   | Number | <b>Time(1999;10;7) ^ 2.5 = 253479847878.04</b> (for UTC+2) | –                              |
| Text     | Time     | Text   | <b>"Metrohm" ^ Time(1999;10;7) = invalid</b>               | This operation is not allowed. |
| Time     | Text     | Text   | <b>Time(1999;10;7) ^ "Metrohm" = invalid</b>               | This operation is not allowed. |

### 2.4.4.3 Logical operators

#### 2.4.4.3.1 AND

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

## Syntax

**Operand1 AND 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        | 0      |
| 1        | 0        | 0      |
| 0        | 0        | 0      |

## Examples

| Oper-and1                            | Oper-and2 | Result | Example                                                           | Remark                                                                                                                                                                        |
|--------------------------------------|-----------|--------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |           |        |                                                                   |                                                                                                                                                                               |
| Number                               | Number    | Number | <b>5 AND 4 --&gt; 1</b><br><b>4 AND 0 --&gt; 0</b>                | Numbers greater than 0 are interpreted as <b>1</b> (true).                                                                                                                    |
| Text                                 | Text      | Number | <b>"Metrohm" AND "AG" --&gt; 1</b><br><b>"" AND "AG" --&gt; 0</b> | An empty character string ("") is interpreted as <b>0</b> (false), everything else as <b>1</b> (true). The first operation therefore corresponds to <b>1 AND 1 --&gt; 1</b> . |
| Time                                 | Time      | Number | <b>Time(1999;10;07) AND Time(1999;10;07) --&gt; 1</b>             | <b>Time()</b> : <i>Time(Date)</i>                                                                                                                                             |
| <b>Operands of a different type:</b> |           |        |                                                                   |                                                                                                                                                                               |

**2.4.4.3.2 OR**

## Syntax

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:

## Examples

■■■■■■■ 33

| Operand1                                                                                                                                                     | Operand2 | Result | Example                                                                                          | Remark                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number                                                                                                                                                       | Number   | Number | <b>5 OR 4 --&gt; 1</b><br><b>4 OR 0 --&gt; 1</b>                                                 | Numbers greater than 1 are automatically interpreted as 1 (true)                                                                                                                                                                                                                                                                                       |
| Text                                                                                                                                                         | Text     | Number | <b>"Metrohm" OR "AG" --&gt; 1</b><br><b>"" OR "Metrohm" --&gt; 1</b><br><b>"" OR "" --&gt; 0</b> | 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 | <b>Time(1999;10;07) OR Time(1964;02;03) --&gt; 1</b>                                             | <b>Time()</b> : see <i>Time(Date)</i>                                                                                                                                                                                                                                                                                                                  |
| <b>Operands of a different type:</b> The operand which does not correspond to the result type is converted to the relevant result type before the operation. |          |        |                                                                                                  |                                                                                                                                                                                                                                                                                                                                                        |
| Number                                                                                                                                                       | Text     | Number | <b>1.2 OR "1.2" --&gt; 1</b><br><b>0 OR "" --&gt; 1</b>                                          | Before the operation, the operand of the <b>Number</b> type is converted to the <b>Text</b> type, as a conversion from <b>Text</b> to <b>Number</b> 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 | <b>"Metrohm" OR 1.2 --&gt; 1</b>                                                                 | The same rules apply here as for the previous operation.                                                                                                                                                                                                                                                                                               |
| Number                                                                                                                                                       | Time     | Number | <b>2.0 OR Time(1999;10;7) --&gt; 1</b><br><b>0 OR Time(1964;02;03) --&gt; 1</b>                  | Before the operation, the operand of the <b>Date/Time</b> type is converted to <b>Number</b> and all dates since December 30, 1899 are interpreted as 1 (true).                                                                                                                                                                                        |
| Time                                                                                                                                                         | Number   | Number | <b>Time(1999;10;7) OR 2.5 --&gt; 1</b>                                                           | The same rules apply here as for the previous operation.                                                                                                                                                                                                                                                                                               |
| Text                                                                                                                                                         | Time     | Number | <b>"Metrohm" OR Time(1999;10;7) --&gt; 1</b>                                                     | Before the operation is carried out, the operand of the <b>Date/Time</b> type is converted to the <b>Text</b> type, and every non-empty character string is interpreted as 1 (true).                                                                                                                                                                   |
| Time                                                                                                                                                         | Text     | Number | <b>Time(1999;10;7) OR "Metrohm" --&gt; 1</b>                                                     | The same rules apply here as for the previous operation.                                                                                                                                                                                                                                                                                               |

#### 2.4.4.4 Relational operators

#### 2.4.4.4.1 Equal to

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

## Syntax

**Operand1 = Operand2**

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

### Examples

| Oper-<br>and1                        | Oper-<br>and2 | Result | Example                                                         | Remark                                                                                                                                                                                                                                                                                         |
|--------------------------------------|---------------|--------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                                                 |                                                                                                                                                                                                                                                                                                |
| Number                               | Number        | Number | <b>5 = 5 --&gt; 1</b><br><b>4 = 5 --&gt; 0</b>                  | –                                                                                                                                                                                                                                                                                              |
| Text                                 | Text          | Number | <b>"Metrohm" = "AG" --&gt; 0</b><br><b>"aG" = "AG" --&gt; 0</b> | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared (see Chapter 2.4.4.10, page 59). <b>Attention:</b> Uppercase and lowercase letters have different values!                                                                               |
| Time                                 | Time          | Number | <b>Time(1998;04;06) = Time(1964;02;03) --&gt; 0</b>             | (see Chapter 2.4.4.6.2, page 47)                                                                                                                                                                                                                                                               |
| <b>Operands of a different type:</b> |               |        |                                                                 |                                                                                                                                                                                                                                                                                                |
| Number                               | Text          | Number | <b>1.2 = "1.2" --&gt; 11.2 = "Metrohm" --&gt; 0</b>             | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> (see Chapter 2.4.4.10, page 59).                                                                                                            |
| Text                                 | Number        | Number | <b>"Metrohm" = 1.2 --&gt; 0</b>                                 | The same rules apply here as for the previous operation.                                                                                                                                                                                                                                       |
| Number                               | Time          | Number | <b>2.0 = Time(1999;10;07) --&gt; 0</b>                          | Before the relational operation, the operand of the <b>Date/Time</b> type is converted to <b>Number</b> . 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 (see Chapter 2.4.4.7.5, page 52). |
| Time                                 | Number        | Number | <b>Time(1999;10;7) = 2.0 --&gt; 0</b>                           | The same rules apply here as for the previous operation.                                                                                                                                                                                                                                       |
| Text                                 | Time          | Number | <b>"Metrohm" = Time(1999;10;07) --&gt; 0</b>                    | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999-10-07 00:00:00 UTC +2"</b> ), afterwards the texts are compared according to <b>ASCII value</b> (see Chapter 2.4.4.10, page 59).                                                |
| Time                                 | Text          | Number | <b>Time(1999;10;07) = "Metrohm" --&gt; 0</b>                    | 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-<br>and1                        | Oper-<br>and2 | Result | Example                                                                   | Remark                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------|--------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                                                           |                                                                                                                                                                                                                                                          |
| Number                               | Number        | Number | <b>5 &gt; 4 --&gt; 1</b><br><b>4 &gt; 5 --&gt; 0</b>                      | –                                                                                                                                                                                                                                                        |
| Text                                 | Text          | Number | <b>"Metrohm" &gt; "AG" --&gt; 1</b><br><b>"Aarau" &gt; "Zug" --&gt; 0</b> | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared ( <i>see Chapter 2.4.4.10, page 59</i> ). <b>Attention:</b> Uppercase and lowercase letters have different values!                                |
| Time                                 | Time          | Number | <b>Time(1998;04;06) &gt; Time(1964;02;03) --&gt; 1</b>                    | ( <i>see Chapter 2.4.4.6.2, page 47</i> )                                                                                                                                                                                                                |
| <b>Operands of a different type:</b> |               |        |                                                                           |                                                                                                                                                                                                                                                          |
| Number                               | Text          | Number | <b>1.2 &gt; "Metrohm" --&gt; 0</b><br><b>1.23 &gt; "1.2" --&gt; 1</b>     | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ).                                                             |
| Text                                 | Number        | Number | <b>"Metrohm" &gt; 1.2 --&gt; 1</b>                                        | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Number                               | Time          | Number | <b>2.0 &gt; Time(1999;10;07) --&gt; 0</b>                                 | Before the comparison, the operand is converted from <b>Date/Time</b> to a <b>Number</b> .                                                                                                                                                               |
| Time                                 | Number        | Number | <b>Time(1999;10;07) &gt; 2.0 --&gt; 1</b>                                 | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Text                                 | Time          | Number | <b>"Metrohm" &gt; Time(1999;10;07) --&gt; 1</b>                           | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999-10-07 00:00:00 UTC +2"</b> ), afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ). |
| Time                                 | Text          | Number | <b>Time(1999;10;7) &gt; "Metrohm" --&gt; 0</b>                            | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |

### 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-<br>and1                        | Oper-<br>and2 | Result | Example                                                                | Remark                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------|--------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                                                        |                                                                                                                                                                                                                                                          |
| Number                               | Number        | Number | <b>5 &gt;= 4 --&gt; 1</b><br><b>4 &gt;= 5 --&gt; 0</b>                 | –                                                                                                                                                                                                                                                        |
| Text                                 | Text          | Number | <b>"Metrohm" &gt;= "AG" --&gt; 1</b>                                   | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared ( <i>see Chapter 2.4.4.10, page 59</i> ). <b>Attention:</b> Uppercase and lowercase letters have different values!                                |
| Time                                 | Time          | Number | <b>Time(1998;04;06) &gt;= Time(1964;02;03) --&gt; 1</b>                | ( <i>see Chapter 2.4.4.6.2, page 47</i> )                                                                                                                                                                                                                |
| <b>Operands of a different type:</b> |               |        |                                                                        |                                                                                                                                                                                                                                                          |
| Number                               | Text          | Number | <b>1.2 &gt;= "1.2" --&gt; 1</b><br><b>1.2 &gt;= "Metrohm" --&gt; 0</b> | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ).                                                             |
| Text                                 | Number        | Number | <b>"Metrohm" &gt;= 1.2 --&gt; 1</b>                                    | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Number                               | Time          | Number | <b>2.0 &gt;= Time(1999;10;07) --&gt; 0</b>                             | Before the comparison, the operand is converted from <b>Date/Time</b> to a <b>Number</b> .                                                                                                                                                               |
| Time                                 | Number        | Number | <b>Time(1999;10;07) &gt;= 2.0 --&gt; 1</b>                             | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Text                                 | Time          | Number | <b>"Metrohm" &gt;= Time(1999;10;07) --&gt; 1</b>                       | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999-10-07 00:00:00 UTC +2"</b> ), afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ). |
| Time                                 | Text          | Number | <b>Time(1999;10;7) &gt;= "Metrohm" --&gt; 0</b>                        | 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-<br>and1                        | Oper-<br>and2 | Result | Example                                                 | Remark                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------|--------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                                         |                                                                                                                                                                                                                                                          |
| Number                               | Number        | Number | <b>5 &lt; 4 --&gt; 0</b><br><b>4 &lt; 5 --&gt; 1</b>    | –                                                                                                                                                                                                                                                        |
| Text                                 | Text          | Number | <b>"Metrohm" &lt; "AG" --&gt; 0</b>                     | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared ( <i>see Chapter 2.4.4.10, page 59</i> ). <b>Attention:</b> Uppercase and lowercase letters have different values!                                |
| Time                                 | Time          | Number | <b>Time(1998;04;06) &lt; Time(1964;02;03) --&gt; 0</b>  | ( <i>see Chapter 2.4.4.6.2, page 47</i> )                                                                                                                                                                                                                |
| <b>Operands of a different type:</b> |               |        |                                                         |                                                                                                                                                                                                                                                          |
| Number                               | Text          | Number | <b>1.2 &lt; "Metrohm" --&gt; 11.2 &lt; "1" --&gt; 0</b> | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ).                                                             |
| Text                                 | Number        | Number | <b>"Metrohm" &lt; 1.2 --&gt; 0</b>                      | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Number                               | Time          | Number | <b>2.0 &lt; Time(1999;10;07) --&gt; 1</b>               | Before the comparison, the operand is converted from <b>Date/Time</b> to a <b>Number</b> .                                                                                                                                                               |
| Time                                 | Number        | Number | <b>Time(1999;10;07) &lt; 2.0 --&gt; 0</b>               | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Text                                 | Time          | Number | <b>"Metrohm" &lt; Time(1999;10;07) --&gt; 0</b>         | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999-10-07 00:00:00 UTC +2"</b> ), afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ). |
| Time                                 | Text          | Number | <b>Time(1999;10;7) &lt; "Metrohm" --&gt; 1</b>          | 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-<br>and1                        | Oper-<br>and2 | Result | Example                                                              | Remark                                                                                                                                                                                                                                   |
|--------------------------------------|---------------|--------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                                                      |                                                                                                                                                                                                                                          |
| Number                               | Number        | Number | <b>5 &lt;= 4 --&gt; 0</b><br><b>4 &lt;= 5 --&gt; 1</b>               | –                                                                                                                                                                                                                                        |
| Text                                 | Text          | Number | <b>"Metrohm" &lt;= "AG" --&gt; 0</b>                                 | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared ( <i>see Chapter 2.4.4.10, page 59</i> ). <b>Attention:</b> Uppercase and lowercase letters have different values!                |
| Time                                 | Time          | Number | <b>Time(1998;04;06) &lt;= Time(1964;02;03) --&gt; 0</b>              | ( <i>see Chapter 2.4.4.6.2, page 47</i> )                                                                                                                                                                                                |
| <b>Operands of a different type:</b> |               |        |                                                                      |                                                                                                                                                                                                                                          |
| Number                               | Text          | Number | <b>2 &lt;= "1.2" --&gt; 0</b><br><b>1.2 &lt;= "Metrohm" --&gt; 1</b> | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ).                                             |
| Text                                 | Number        | Number | <b>"Metrohm" &lt;= 1.2 --&gt; 0</b>                                  | The same rules apply here as for the previous operation.                                                                                                                                                                                 |
| Number                               | Time          | Number | <b>2.0 &lt;= Time(1999;10;07) --&gt; 1</b>                           | Before the comparison, the operand is converted from <b>Date/Time</b> to a <b>Number</b> .                                                                                                                                               |
| Time                                 | Number        | Number | <b>Time(1999;10;07) &lt;= 2.0 --&gt; 0</b>                           | The same rules apply here as for the previous operation.                                                                                                                                                                                 |
| Text                                 | Time          | Number | <b>"Metrohm" &lt;= Time(1999;10;07) --&gt; 0</b>                     | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999.10.07"</b> ), afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ). |
| Time                                 | Text          | Number | <b>Time(1999;10;7) &lt;= "Metrohm" --&gt; 1</b>                      | 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-<br>and1                        | Oper-<br>and2 | Result | Example                                       | Remark                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------|--------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operands of the same type:</b>    |               |        |                                               |                                                                                                                                                                                                                                                          |
| Number                               | Number        | Number | 5 <> 4 --> 1<br>5 <> 5 --> 0                  | –                                                                                                                                                                                                                                                        |
| Text                                 | Text          | Number | "Metrohm" <> "AG" --> 1                       | When making a comparison between two texts, the <b>ASCII value</b> of the character string is compared ( <i>see Chapter 2.4.4.10, page 59</i> ). <b>Attention:</b> Uppercase and lowercase letters have different values!                                |
| Time                                 | Time          | Number | Time(1998;04;06) <><br>Time(1964;02;03) --> 1 | ( <i>see Chapter 2.4.4.10, page 59</i> )                                                                                                                                                                                                                 |
| <b>Operands of a different type:</b> |               |        |                                               |                                                                                                                                                                                                                                                          |
| Number                               | Text          | Number | 1.2 <> "1.2" --> 01.2 <><br>"Metrohm" --> 1   | Before the relational operation, the <b>Number</b> is converted to <b>Text</b> , afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</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) --><br>1              | Before the comparison, the operand is converted from <b>Date/Time</b> to a <b>Number</b> .                                                                                                                                                               |
| Time                                 | Number        | Number | Time(1999;10;07) <> 2.5 --><br>1              | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |
| Text                                 | Time          | Number | "Metrohm" <><br>Time(1999;10;07) --> 1        | Before the operation, the operand is converted from <b>Date/Time</b> to <b>Text</b> (in this example: <b>"1999-10-07 00:00:00 UTC +2"</b> ), afterwards the texts are compared according to <b>ASCII value</b> ( <i>see Chapter 2.4.4.10, page 59</i> ). |
| Time                                 | Text          | Number | Time(1999;10;7) <><br>"Metrohm" --> 1         | The same rules apply here as for the previous operation.                                                                                                                                                                                                 |



### 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

$$\text{Log}(10) = 1$$

**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  $y = {}^2\sqrt{\text{number}}$ .

## Parameters

**Number**  $\geq 0$

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**

## 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

$$\text{Abs}(-55.3) = 55.3$$

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

## Fraction

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

## Syntax

**y = Frac(number)**

Returns the fraction of the entered number.



## NOTE

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

## Parameters

## Number

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

## Examples

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

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

#### 2.4.4.5.7 Integer

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

## Syntax

**y = Int(number)**

Returns the integer of the entered number.

## Parameters

## Number

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

## Examples

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

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

#### 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.



## NOTE

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

## Parameters

## Number

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

## Examples

**Round(-55.5259) = -56**

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

## 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**

## Quantiles of the Student's t-distribution

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

## Syntax

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

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  $\mu$  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  $\mu$  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 =  $1.001 \pm 0.008$

#### 2.4.4.6 Date/time functions

#### 2.4.4.6.1 Time()

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

## Syntax

**y = Time()**

Returns the current date and the current time.

## Parameters

none

### Return value

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



## NOTE

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

#### 2.4.4.6.2 Time(Date)

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

## Syntax

**y = Time(year; month; day)**

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

## Parameters

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

**month 1 - 12**

**day**      **1 - 31**

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



## NOTE

Only the integral part is used for all parameters.

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

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

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

### Return value

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



## NOTE

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

## Examples

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

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

#### 2.4.4.6.3 Time(Date + Time)

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

## Syntax

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

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

## Parameters

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

**month 1 - 12**

**day 1 - 31**

**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**.



## NOTE

Only the integral part is used for all parameters.

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

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

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

### Return value

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



## NOTE

**UTC** = 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.



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

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

**y = TextToTime(Text;Format)**

## Parameters

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.

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       |
|------------|---------------|
| <b>y</b>   | Year          |
| <b>M</b>   | Month         |
| <b>d</b>   | Day           |
| <b>H</b>   | Hour 0 - 23   |
| <b>h</b>   | Hour AM/PM    |
| <b>m</b>   | Minute        |
| <b>s</b>   | Second        |
| <b>a</b>   | AM/PM marking |



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Open formula editor for entering calculation formulas (see Chapter 2.4, page 20).



#### NOTE

In order for results of formulas of the **Date** type to be output correctly, for text windows they must be converted to **Text** using the function **TimeToText** (see Chapter 2.4.4.7.6, page 53).



Font size in pt.



Select font color.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.

### 2.5.3 Hyperlink

Dialog window: **Hyperlink**

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

#### Displayed text

Designation of the hyperlink that is displayed.





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:

|                         |                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>New...</b>           | Create new template. The <b>Edit e-mail template</b> window opens in which a new template can be defined ( <i>see Chapter 2.6.3, page 64</i> ).     |
| <b>Properties...</b>    | Edit the selected template. The <b>Edit e-mail template</b> window opens in which the template can be edited ( <i>see Chapter 2.6.3, page 64</i> ). |
| <b>Copy</b>             | Copy the selected template and save it under the name <b>Copy of 'Template name'</b> .                                                              |
| <b>Delete</b>           | Delete the selected template.                                                                                                                       |
| <b>Send test E-mail</b> | Send test e-mail with the selected e-mail template.                                                                                                 |

### 2.6.3 Editing e-mail templates

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

## E-mail template

Name of the e-mail template.

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

**Recipient**

### E-mail address

E-mail address of the recipient.

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

**Sender**

### E-mail address

E-mail address of the sender.

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

Address of the SMTP mail server.

Port number of the SMTP mail server.

Address of the POP mail server.

Port number of the POP mail server.

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

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







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

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

- *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*

### 3.2.1 Opening a new workplace

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

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

---

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.

- ### 3.3.2 Toolbar

|                                                                                   |                                                                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|  | Shows the application note of the loaded method for <b>Block A</b> or <b>Block B</b> (see Chapter 3.3.14, page 81). |
|  | Change the stop criteria during a determination (see Chapter 3.3.13, page 80).                                      |
|  | Starts the temperature correction determination (see Chapter 3.4, page 81).                                         |
|  | Starts the cell constant determination (see Chapter 3.5, page 86).                                                  |

### 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



## NOTE

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**

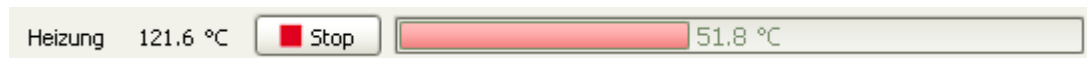
The heater of the two blocks A and B can be switched on and off individually for each block. The heater stays on until the **target temperature** (= **sample temperature** + **temperature correction**) defined in the loaded method has been reached; this temperature is displayed to the left of the Start/Stop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



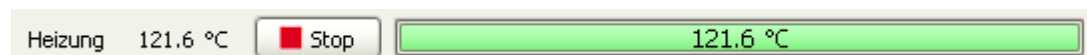
 Start

### During the heating phase



■ Stop

### After the temperature has been reached



■ Stop

### 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:



 Start



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**.



## NOTE

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

## 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  Start.



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.



### 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.

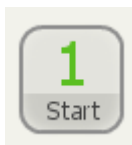
Editable only if no determination is running, otherwise inactive.

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

### 3.3.9 Carrying out a determination

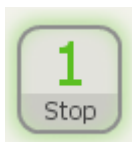
Main window: **Workplace** ► **Block A/Block B**

## 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.

### Carrying out a single determination

### Carrying out a double determination

### Carrying out a quadruple determination

### 3.3.10 Live curve

## Live curve display

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.

Additional information which can be defined only in the **Method** program part (but not in the workplace!) (see Chapter 5.7.3, page 289) is displayed only in the **Curve** subwindow in the **Database** program part (see Chapter 4.8.7, page 242).



## NOTE

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

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

## Changing the conductivity display

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.

If the **Conductivity sensor assignment** is not activated, the default value of the cell constant **1.1 /cm** is always used to calculate the conductivity.

## Context-sensitive menu

Clicking on the live curve with the right mouse button will cause a context-sensitive menu to appear with the following menu items:

|                 |                                                                                      |
|-----------------|--------------------------------------------------------------------------------------|
| <b>Show all</b> | Shows the entire curve. This menu item is always enabled.                            |
| <b>Zoom...</b>  | Opens the dialog for entering a zoom range ( <i>see Chapter 4.8.5.2, page 240</i> ). |
| <b>Unzoom</b>   | Undoes the last zoom action (as often as required).                                  |
| <b>Copy</b>     | Copies the live curve displayed to the clipboard.                                    |

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

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

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

The field `Ident` is always used in a method (see [Chapter 5.7.2.2, page 286](#)).

|           |                 |
|-----------|-----------------|
| Entry     | 100 characters  |
| Selection | 'Text template' |

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

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 286*).

|           |                 |
|-----------|-----------------|
| Entry     | 100 characters  |
| Selection | 'Text template' |

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

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 286*).

|           |                 |
|-----------|-----------------|
| Entry     | 100 characters  |
| Selection | 'Text template' |

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

The info field is displayed only if it has been activated in the method (see *Chapter 5.7.2.2, page 286*).

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



























## 4 Database

### 4.1 Database - General

#### 4.1.1 Database - Definition

Program part: **Database**

##### Definition

The term **Database** is used in **StabNet** to refer to the program part in which the determinations saved in the databases can be displayed, managed, evaluated, reprocessed and printed out. The **determination databases** are also referred to as databases; they can, in contrast to the **configuration database**, be generated by the user and contain the determination data. Included among such determination data are the method data used for the determination, the measured data generated during the determination and the results calculated from it.

In the default settings, the empty **StabNet** database is created at the time of installation. This database can, however, be either renamed or deleted by the user.

##### Organization

In **local server systems (StabNet 1.1 Full)**, the databases are stored on the drives managed by the computer and are only available to those users registered on that computer who have the appropriate access permission.

In **client/server systems (StabNet 1.1 Multi)** the databases are stored on drives managed centrally by the server and are globally available throughout the entire client/server system, i.e., all users with the appropriate access rights can use these databases.

#### 4.1.2 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 106*).



|                                                                                                    |                                                                                                                                 |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Report...</b>                                                                                   | PDF file output of the report ( <i>see Chapter 4.5.2.2, page 169</i> ).                                                         |
|  <b>Logout...</b> | Logs out user ( <i>see Chapter 2.2.3, page 13</i> ).                                                                            |
| <b>Exit</b>                                                                                        | Exits the program.                                                                                                              |
| <b>1 'File name'</b>                                                                               | Opens the selected database ( <i>see Chapter 4.2.1, page 104</i> ). The last five databases opened are displayed for selection. |

### 4.1.3.3 Database - Edit menu

Program part: **Database**

|                                                                                               |                                                                                       |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  <b>Copy</b> | Copies the selected lines in the determination overview to the clipboard.             |
| <b>Select all</b>                                                                             | Selects all lines in the current set of determinations in the determination overview. |

### 4.1.3.4 Database - View menu

Program part: **Database**

|                                                                                                               |                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|  <b>Update</b>               | Updates the determination overview.                                                                                             |
|  <b>Change layout...</b>   | Modifies the layout of the loaded database view ( <i>see Chapter 4.1.7.2, page 102</i> ).                                       |
|  <b>Load view...</b>       | Loads a saved database view ( <i>see Chapter 4.1.7.3, page 103</i> ).                                                           |
|  <b>Save view...</b>       | Saves the loaded database view ( <i>see Chapter 4.1.7.4, page 103</i> ).                                                        |
|  <b>Split vertically</b>   | Splits the database window vertically and displays two databases side by side ( <i>see Chapter 4.2.4, page 107</i> ).           |
|  <b>Split horizontally</b> | Splits the database window horizontally and displays two databases, one above the other ( <i>see Chapter 4.2.5, page 107</i> ). |
|  <b>Unsplit</b>            | Undoes the splitting of the database window ( <i>see Chapter 4.2.3, page 107</i> ).                                             |
|  <b>Properties ►</b>       |                                                                                                                                 |
| <b>Column display...</b>                                                                                      | Sets the column display for the <b>Determination overview</b> subwindow ( <i>see Chapter 4.5.1.3, page 164</i> ).               |
|  <b>Toolbar</b>            | Activate/deactivate the toolbar display.                                                                                        |



|                                                                                                             |                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Export...</b>                                                                                            | Exports the selected determinations ( <i>see Chapter 4.5.2.9, page 185</i> ).                                                               |
| <b>Import...</b>                                                                                            | Imports the selected determinations ( <i>see Chapter 4.5.2.10, page 186</i> ).                                                              |
|  <b>Show method...</b>     | Shows the method used for the focused determination ( <i>see Chapter 4.5.2.12, page 187</i> ).                                              |
|  <b>Show history</b>       | Shows all versions of the focused determination in the determination table ( <i>see Chapter 4.5.2.13, page 187</i> ).                       |
|  <b>Make current</b>       | Makes the old version selected in the history view the current version once again ( <i>see "Making an old version current", page 187</i> ). |
|  <b>Detail overview...</b> | Shows the detail overview of results for the selected determinations ( <i>see Chapter 4.5.2.15.2, page 189</i> ).                           |
|  <b>Overlay curves...</b>  | Overlays the curves of the selected determinations ( <i>see Chapter 4.5.2.16, page 198</i> ).                                               |
|  <b>Reprocess...</b>       | Reprocesses the selected determinations.                                                                                                    |
| <b>Extrapolation...</b>                                                                                     | Performs extrapolation with selected determinations ( <i>see Chapter 4.5.2.18, page 216</i> ).                                              |
|  <b>Delete</b>           | Deletes selected determinations ( <i>see Chapter 4.5.2.11, page 186</i> ).                                                                  |

#### 4.1.3.6 Database - Tools menu

Program part: **Database**

|                                                                                                    |                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report templates ►</b>                                                                          |                                                                                                                                                                          |
| <b>New ►</b>                                                                                       |                                                                                                                                                                          |
| <b>Form report...</b>                                                                              | Opens the <b>Report template</b> window with an empty form report ( <i>see Chapter 4.4.1.3, page 118</i> ). This menu item is disabled as long as the database is empty. |
| <b>Tabular report...</b>                                                                           | Opens the <b>Report template</b> window with an empty tabular report ( <i>see Chapter 4.4.1.3, page 118</i> ).                                                           |
|  <b>Open...</b> | Opens a report template for editing ( <i>see Chapter 4.4.1.3, page 118</i> ). This menu item is disabled as long as the database is empty.                               |
| <b>Manager...</b>                                                                                  | Manages report templates ( <i>see Chapter 4.4.1.1, page 116</i> ).                                                                                                       |
| <b>Templates ►</b>                                                                                 |                                                                                                                                                                          |



|                                                                                     |                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|    | Enter a comment on the selected determination ( <i>see Chapter 4.5.2.3, page 169</i> ).                                                     |
|    | Opens the <b>Search</b> window for searching for determinations ( <i>see Chapter 4.5.2.4, page 170</i> ).                                   |
|    | Applies the most recently used quick or special filter ( <i>see Chapter 4.5.2.5.2, page 173</i> ).                                          |
|    | Quick filtering of the database with the content of the selected table cell ( <i>see Chapter 4.5.2.5.3, page 173</i> ).                     |
|    | Opens the <b>Special filter</b> window for the definition of user-specific filters ( <i>see Chapter 4.5.2.5.4, page 174</i> ).              |
|    | Removes the current filter ( <i>see Chapter 4.5.2.5.5, page 175</i> ).                                                                      |
|    | Signs the selected determinations at level 1 ( <i>see Chapter 2.3.3, page 16</i> ).                                                         |
|    | Signs the selected determinations at level 2 ( <i>see Chapter 2.3.4, page 18</i> ).                                                         |
|   | Shows the method used for the focused determination ( <i>see Chapter 4.5.2.12, page 187</i> ).                                              |
|  | Shows all versions of the focused determination in the determination table ( <i>see Chapter 4.5.2.13, page 187</i> ).                       |
|  | Makes the old version selected in the history view the current version once again ( <i>see "Making an old version current", page 187</i> ). |
|  | Shows the detail overview of results for the selected determinations ( <i>see Chapter 4.5.2.15.2, page 189</i> ).                           |
|  | Overlays the curves of the selected determinations ( <i>see Chapter 4.5.2.16, page 198</i> ).                                               |
|  | Reprocess the selected determinations ( <i>see Chapter 4.5.2.17.1, page 203</i> ).                                                          |
|  | Deletes the selected determinations ( <i>see Chapter 4.5.2.11, page 186</i> ).                                                              |
|  | Opens a report template for editing ( <i>see Chapter 4.4.1.3, page 118</i> ).                                                               |
|  | Opens StabNet Help.                                                                                                                         |











## Name

Name of the database.

## Number of records

Shows the number of data sets in the database.

## Size

Shows the size of the database in KB.

## Readable

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

## Editable

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

### Comment

Shows comments about the database.

## Opening a database

## Database name

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

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

[Open]

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



### NOTE

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



### 4.2.3 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 windows is enabled, then the  symbol 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 workplaces are displayed next to one another in the main window with the  symbol or the **View ► Split vertically** menu item.

### 4.2.5 Displaying databases one above the other

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

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

### 4.2.6 Closing a database

Menu items: **Database ► File ► Close/Close all**

#### Closing a single database

The  symbol or the **File ► Close** menu item can be used to close the focused database.

#### Closing all databases

All the opened databases are closed with the **File ► Close all** menu item.

## 4.3 Managing databases

### 4.3.1 Managing databases

Dialog window: **Database ► File ► Database manager... ► Database manager**

The  symbol or the **File ► Database manager...** menu item is used to open the **Database manager** window in which a user with corresponding access rights can manage databases.

#### 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**, **Last backup**, **Next backup** and **Comment** columns) in either ascending or descending order by clicking on the column title.







#### 4.3.5.3 Database properties - Access rights

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

Database access permissions for user groups.

### User group

Shows the user groups defined in the user administration.

## Read

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

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

## Edit

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

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



## NOTE

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

#### 4.3.5.4 Database properties - Backup

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

### Definition of backup monitoring and automatic backups.

## Backup monitoring

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

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

## Last backup

Display of date and time of the last database backup.



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

### Maximum size

Maximum permitted database size in MB.

### Monitoring number of records

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

Activates/deactivates the monitoring of the number of data sets for the selected database. If this check box is activated, then the **Number of records** field in the database table will be highlighted in **red** when the limit value has been exceeded. At the same time, a corresponding message also appears when the database is opened.

## Monitoring size

Maximum permitted number of data sets for database.

### 4.3.6 Backing up database manually

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

**[Backup]** is used to open the **Backup database** dialog window:

## Backup target

## Backup directory

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



## NOTE

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

### 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         | <b>50 characters</b> |
| Default value | <b>Backup-##</b>     |



## NOTE

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

**[Start]**

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

### 4.3.7 Restoring the database

Dialog window: **Database** ► **File** ► **Database manager...** ► **Database manager** ► **[Restore]** ► **Restore databases**

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

## Backup directory

Selection of a directory that is predefined in the **Program administration** and in which the backed-up databases are located.

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

### Backup name

Selection of a backup file.

| Selection | Selection of backup files |
|-----------|---------------------------|
|-----------|---------------------------|

### Backup date

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

## Database name

Shows the name of the database. This information is not available if the backup file is located on a network drive.

## Number of records

Shows the number of data sets in the database. This information is not available if the backup file is located on a network drive.

## Size

Shows the size of the database in KB.

**Save as**

Name under which the database is to be restored.

|               |                        |
|---------------|------------------------|
| Entry         | <b>50 characters</b>   |
| Default value | <b>New database ##</b> |

**[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.



## NOTE

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



#### 4.4.1.1.2 Renaming report templates

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

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

## Rename report template 'Name' to

Entry of the new name for the report template.

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



## NOTE

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

#### 4.4.1.1.3 Copying report templates

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

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

#### 4.4.1.1.4 Deleting report templates

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

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

#### 4.4.1.1.5 Exporting report templates

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

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

#### 4.4.1.1.6 Importing report templates

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

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

report templates to be imported must be selected. The 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 (that 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 for each determination, at least one page will always be produced.

## New tabular report

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

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

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

|                 |                                                       |
|-----------------|-------------------------------------------------------|
| <b>Name</b>     | Name of the report template.                          |
| <b>Saved</b>    | Date and time when the report template was saved.     |
| <b>Saved by</b> | Short name of the user who saved the report template. |



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

#### 4.4.1.4.1.3.2 Report template - File menu

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

|                                                                                                 |                                                                                                  |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  <b>Save</b> | Saves the opened report template ( <i>see Chapter 4.4.1.4.2.11, page 133</i> ).                  |
| <b>Save as...</b>                                                                               | Saves the opened report template under a new name ( <i>see Chapter 4.4.1.4.2.11, page 133</i> ). |
| <b>Page setup...</b>                                                                            | Sets up the page settings for the report template ( <i>see Chapter 4.4.1.4.2.2, page 125</i> ).  |

|                                                                                                       |                                                                                                                      |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|  <b>Page preview</b> | Page preview of the report template with the data of the selected determination (see Chapter 4.4.1.4.2.8, page 131). |
| <b>Close</b>                                                                                          | Closes the <b>Report template - 'Name'</b> program window.                                                           |

#### 4.4.1.4.1.3.3 Report template - Edit menu

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

|                                                                                                    |                                                                                                                            |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|  <b>Undo:</b>     | Undoes the last action.                                                                                                    |
|  <b>Redo:</b>     | Redoes the undone action.                                                                                                  |
|  <b>Cut</b>       | Cuts the highlighted items and copies them to the clipboard (see "Cutting, copying, pasting, deleting modules", page 130). |
|  <b>Copy</b>      | Copies the selected items to the clipboard (see "Cutting, copying, pasting, deleting modules", page 130).                  |
|  <b>Paste</b>     | Pastes highlighted items from the clipboard (see "Cutting, copying, pasting, deleting modules", page 130).                 |
|  <b>Delete</b>  | Deletes the highlighted items (see "Cutting, copying, pasting, deleting modules", page 130).                               |
|  <b>Comment</b> | Enters a comment on the report template (see Chapter 4.4.1.4.2.9, page 132).                                               |

#### 4.4.1.4.1.3.4 Report template - View menu

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

|                      |                                                                                     |
|----------------------|-------------------------------------------------------------------------------------|
| <b>Update</b>        | Updates the view.                                                                   |
| <b>First page</b>    | Shows the first page of the report template (see Chapter 4.4.1.4.2.4, page 128).    |
| <b>Previous page</b> | Shows the previous page of the report template (see Chapter 4.4.1.4.2.4, page 128). |
| <b>Next page</b>     | Shows the next page of the report template (see Chapter 4.4.1.4.2.4, page 128).     |
| <b>Last page</b>     | Shows the last page of the report template (see Chapter 4.4.1.4.2.4, page 128).     |

#### 4.4.1.4.1.3.5 Report template - Insert menu

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

|                    |                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------|
| <b>Page before</b> | Inserts a new page before the page shown ( <i>see "Inserting page before", page 128</i> ). |
| <b>Page after</b>  | Inserts a new page after the page shown ( <i>see "Inserting page after", page 128</i> ).   |

#### 4.4.1.4.1.3.6 Report template - Tools menu

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

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| <b>Options...</b> | Set options for the report template ( <i>see Chapter 4.4.1.4.2.10, page 132</i> ). |
|-------------------|------------------------------------------------------------------------------------|

#### 4.4.1.4.1.3.7 Report template - Help menu

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

 **StabNet Help** Opens StabNet Help.

#### 4.4.1.4.1.4 Report template - General toolbar

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

|                                                                                     |                                                                                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|  | Saves the opened report template ( <i>see Chapter 4.4.1.4.2.11, page 133</i> ).                                               |
|  | Page preview of the report template with the data of the selected determination ( <i>see Chapter 4.4.1.4.2.8, page 131</i> ). |
|  | PDF file output of the report template with the data of the selected determination.                                           |
|  | Undoes the last action.                                                                                                       |
|  | Redoes the undone action.                                                                                                     |
|  | Cuts the highlighted items and copies them to the clipboard ( <i>see Chapter 4.4.1.4.2.6, page 129</i> ).                     |
|  | Copies the selected items to the clipboard ( <i>see "Cutting, copying, pasting, deleting modules", page 130</i> ).            |

|                                                                                   |                                                                                                            |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|  | Pastes highlighted items from the clipboard (see "Cutting, copying, pasting, deleting modules", page 130). |
|  | Deletes the highlighted items (see "Cutting, copying, pasting, deleting modules", page 130).               |
|  | Selection of the zoom level (see Chapter 4.4.1.4.2.7, page 131).                                           |
|  | Activates/deactivates the grid display (see Chapter 4.4.1.4.2.10, page 132).                               |
|  | Activates/deactivates snapping to grid (see Chapter 4.4.1.4.2.10, page 132).                               |

#### 4.4.1.4.1.5 Report template - Module-specific toolbar

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

Depending on the module selected in the report template, other symbols and input fields with which the properties of these modules can be directly edited are shown below the general toolbar (see Chapter 4.4.1.4.1.6, page 123).

#### 4.4.1.4.1.6 Report template - Module bar

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

|                                                                                     |                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Select</b></p> <p>If this option is activated, then modules in the report template can be selected, reduced/enlarged and moved (see Chapter 4.4.1.4.2.6, page 129).</p>                  |
|  | <p><b>Text</b></p> <p>If this option is activated, then <b>text fields</b> can be inserted in the report template (see Chapter 4.4.1.4.3.1, page 134).</p>                                     |
|  | <p><b>Data</b></p> <p>If this option is activated, then <b>data fields</b> can be inserted in the report template (see Chapter 4.4.1.4.3.2, page 136).</p>                                     |
|  | <p><b>Date</b></p> <p>If this option is activated, then <b>date fields</b> can be inserted in the report template in which the actual date is entered (see Chapter 4.4.1.4.3.3, page 138).</p> |



|                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><br><br><br>       | <h3>Time</h3> <p>If this option is activated, then <b>time fields</b> can be inserted in the report template in which the actual time is entered (<i>see Chapter 4.4.1.4.3.4, page 139</i>).</p> <h3>Page number</h3> <p>If this option is activated, then fields can be inserted in the report template in which the <b>page number</b> is entered (<i>see Chapter 4.4.1.4.3.5, page 141</i>).</p> <h3>Number of pages</h3> <p>If this option is activated, then fields can be inserted in the report template in which the <b>number of pages</b> is entered (<i>see Chapter 4.4.1.4.3.6, page 143</i>).</p> |
|                                                                                                                                                                                          | <h3>Fixed report</h3> <p>If this option is activated, then <b>fixed reports</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.7, page 145</i>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                          | <h3>Group</h3> <p>If this option is activated, then <b>group fields</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.8, page 146</i>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <br><br><br><br> | <h3>Image</h3> <p>If this option is activated, then <b>images</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.9, page 147</i>).</p> <h3>Line</h3> <p>If this option is activated, then <b>lines</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.10, page 148</i>).</p> <h3>Rectangle</h3> <p>If this option is activated, then <b>rectangles</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.11, page 149</i>).</p>                                                                                                                             |
|                                                                                                                                                                                        | <h3>Curve</h3> <p>If this option is activated, then <b>curves</b> can be inserted in the report template (<i>see Chapter 4.4.1.4.3.12, page 150</i>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

#### 4.4.1.4.2.1 Report template - Function overview

Width

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

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 210.0 mm       |

Height

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

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 297.0 mm       |

Orientation

Selection of the page layout.

|               |                      |
|---------------|----------------------|
| Selection     | Portrait   Landscape |
| Default value | Portrait             |

Page margins

Top

Upper page margin.

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 15.0 mm        |

Bottom

Lower page margin.

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 15.0 mm        |

Left

Left-hand page margin.

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 20.0 mm        |

Right

Right-hand page margin.

|               |                |
|---------------|----------------|
| Input range   | 0.0 - 499.0 mm |
| Default value | 20.0 mm        |





















Right-justified.



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



Fills the field with dots.

Text

Text input for the text field.

4.4.1.4.3.2 Report template - Data field

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

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

Insert



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

Properties

X pos.

X-position within the permitted range.

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

Y pos.

Y-position within the permitted range.

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

Width

Width of data field.

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

Height

Height of data field.

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



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



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



Fills the field with dots.

### Prefix

Text placed before the contents of the data field.

|       |                      |
|-------|----------------------|
| Entry | <b>50 characters</b> |
|-------|----------------------|

### 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.

Insert



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

Properties

X pos.

X-position within the permitted range.

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

Y pos.

Y-position within the permitted range.

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

Width

Width of date field.

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

Height

Height of date field.

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



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

#### Prefix

Text placed before the contents of the date field.

|       |                      |
|-------|----------------------|
| Entry | <b>50 characters</b> |
|-------|----------------------|

#### Suffix

Text placed after the contents of the date field.

|       |                      |
|-------|----------------------|
| Entry | <b>50 characters</b> |
|-------|----------------------|

#### Preview

Shows the formatted date.

#### 4.4.1.4.3.4 Report template - Time field

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

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





Left-justified.



Centered.



Right-justified.



Fills the field with dots.

### Prefix

Text placed before the contents of the time field.

|       |                      |
|-------|----------------------|
| Entry | <b>50 characters</b> |
|-------|----------------------|

### Suffix

Text placed after the contents of the time field.

|       |                      |
|-------|----------------------|
| Entry | <b>50 characters</b> |
|-------|----------------------|

### Preview

Shows the formatted time.

#### 4.4.1.4.3.5 Report template - Page number

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

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

### Insert



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

### Properties

#### X pos.

X-position within the permitted range.

|             |                                      |
|-------------|--------------------------------------|
| Input range | <b>0.0000 - (max. page width) mm</b> |
|-------------|--------------------------------------|

Y pos.

Y-position within the permitted range.

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

Width

Width of the page number field.

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

Height

Height of the page number field.

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



Selection of the available Windows fonts.



Font size in pt.



Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

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

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

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

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

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

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



Arial

Selection of the available Windows fonts.

9

Font size in pt.

Color selection.



Bold.



Italic.



Underlined.



Left-justified.



Centered.



Right-justified.



Fills the field with dots.

## Prefix

Text placed before the contents of the field.

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

## Suffix

Text placed after the contents of the field.

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

## Preview

Shows the formatted number of pages.

## Report template - Fixed report

Dialog window: **Report template - 'Name' ▶ Properties - Fixed report**

Fixed reports are used for outputting predefined part-reports of the determination in the report.



## NOTE

Fixed reports cannot be inserted in tabular report templates.

## Insert



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

## Properties

**X pos.**

Shows the predefined X position for the fixed report.

**Y pos.**

Shows the Y-position within the permitted range.

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

### Width

Shows the predefined width of the fixed report.

## Height

Height of the fixed report.

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

## Fixed report

Selection of a predefined fixed report.

|               |                                                                                                                                                                                                                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Selection     | <b>Evaluation properties   Messages   Measuring parameters   Method properties   Method parameters   Sample data   Results list   Statistical data (short)   Statistical data (full)   Signature list determination   Signature list method   Configuration used   Monitoring report</b> |
| Default value | <b>Evaluation properties</b>                                                                                                                                                                                                                                                             |

#### 4.4.1.4.3.8 Report template - Group field

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

A group field is for the purpose of grouping together a variety of fields in the report template. All of the fields gathered together in a group field can be moved together as a group. The group field prevents a page break inside the group field.

The group field always extends across the entire width of a page; only the upper edge (Y value) and the height of the field can be configured.



## NOTE

Group fields cannot be inserted in tabular report templates.



## NOTE

Fixed reports, which do not permit page break controls, cannot be inserted into a group field.



**Insert**

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

## Properties

**X pos.**

Shows the predefined X position for the field.

**Y pos.**

Y-position within the permitted range.

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

### Width

Shows the predefined width of the field.

## Height

Height of the field

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

## 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.

## Insert



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

## Properties

**X pos.**

X-position within the permitted range.

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

**Y pos.**

Y-position within the permitted range.

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

## Width

Width of the text field.

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

## Height

Height of the text field.

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

## Graphics file

Shows path and name of the selected graphics file (the field cannot be edited directly).  opens a window for selecting the graphics file. The path and name of the graphics file are then entered.

## Size

Definition of how the graph is to be displayed.

|               |                                                   |
|---------------|---------------------------------------------------|
| Selection     | <b>original   proportional   non-proportional</b> |
| Default value | <b>original</b>                                   |

**original**

Original size.

**proportional**

Proportional enlargement or reduction in size.

**non-proportional**

Non-proportional enlargement or reduction in size.

#### 4.4.1.4.3.10

## Report template - Line

Dialog window: **Report template - 'Name' ▶ Properties - Line**

Any line can be inserted in the report template.

## Insert



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

## Properties

**X pos.**

X-position within the permitted range.

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

**Y pos.**

Y-position within the permitted range.

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

## Length

Length of the line.

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

## Angle

Angle of the line.

|             |                          |
|-------------|--------------------------|
| Input range | <b>0.000 - 360.000 °</b> |
|-------------|--------------------------|

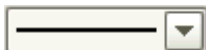
## Thickness

Thickness of the line.

|               |                      |
|---------------|----------------------|
| Input range   | <b>0.1 - 10.0 mm</b> |
| Default value | <b>0.5 mm</b>        |



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.

## Insert



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

## Properties

**X pos.**

X-position within the permitted range.

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

**Y pos.**

Y-position within the permitted range.

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

## Width

Width of the rectangle.

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

## Height

Height of the rectangle.

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

## Thickness

Thickness of the line for the rectangle.

|               |                      |
|---------------|----------------------|
| Input range   | <b>0.1 - 10.0 mm</b> |
| Default value | <b>0.5 mm</b>        |



Selection of the line color.



Selection of the type of line for the rectangle.



Activates/deactivates the fill color.



Selection of the fill color.

4.4.1.4.3.12

Report template - Curve field

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

Insert



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

Properties

X pos.

Shows the predefined X-position for the curve field.

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

Y pos.

Y-position within the permitted range.

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

Width

Shows the predefined width of the curve field.

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

Height

Height of the curve field.

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

Curve view

Definition of the curve display.

|               |                              |
|---------------|------------------------------|
| Selection     | from database   user-defined |
| Default value | from database                |

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

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

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.

#### 4.4.2.1 Managing control chart templates

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

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.

Shows the name of the template.

Shows the comments about the template.

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

|                      |                                                                                                                                                                                                   |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>New...</b>        | Creates a new template. The <b>Properties - Control chart template</b> dialog window opens in which the properties for the new template can be defined ( <i>see Chapter 4.4.2.2, page 152</i> ).  |
| <b>Properties...</b> | Opens the <b>Properties - Control chart template - 'Name'</b> dialog window in which the properties of the template selected in the table can be edited ( <i>see Chapter 4.4.2.2, page 152</i> ). |



Comment on control chart.

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

#### 4.4.2.2.2 Editing the result properties

#### 4.4.2.2.2.1 Result properties - General

Dialog window: Database ► Tools ► Templates ► Control chart templates... ► Control chart templates ► [Edit] ► Properties... ► Properties - Control chart template - 'Name' ► [Edit] ► Properties... ► Control chart - result properties

## Result

Display of the result variable whose control chart is being edited.  opens the **Select result** dialog window in which all results of the determination which is in focus in the determination overview are available.

**Label**

Freely definable designation for the control chart of the result; the tab of the control chart in the **Detailed overview - Control chart** window is labeled with this.

|               |                          |
|---------------|--------------------------|
| Entry         | <b>1 - 50 characters</b> |
| Default value | <b>'empty'</b>           |

## Tabs

The result properties for a control chart template can be set on the following tabs:

- *Graphics parameters*  
Parameters for the graphical display of the control chart.
- *Limit values*  
Definition of warning and intervention limits for the control chart.
- *Statistics*  
Display of statistics data for the control chart.

#### 4.4.2.2.2 Control chart template - Graphics parameters

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

Parameters for the graphical display of the control chart.

### y Axis

## Scaling

Selection of the type of scaling.

|               |                                  |
|---------------|----------------------------------|
| Selection     | <b>Automatic</b>   <b>Manual</b> |
| Default value | <b>Automatic</b>                 |

## Automatic

Automatic scaling of the y axis.

# Manual

Manual scaling of the y axis with the values of **Minimum** and **Maximum**.

### Minimum

Minimum value for manual scaling.

|               |                                               |
|---------------|-----------------------------------------------|
| Input range   | <b>-1·10<sup>99</sup> - 1·10<sup>99</sup></b> |
| Default value | <b>0</b>                                      |

### Maximum

Maximum value for manual scaling.

|               |                                               |
|---------------|-----------------------------------------------|
| Input range   | <b>-1·10<sup>99</sup> - 1·10<sup>99</sup></b> |
| Default value | <b>1000</b>                                   |

## Background

## Background color

Background color for the control chart. Clicking on the  symbol opens the **Select color** dialog window for the selection of the background color (see Chapter 2.5.4, page 62).

|               |                          |
|---------------|--------------------------|
| Selection     | <b>any color   white</b> |
| Default value | <b>white</b>             |

## Measured values

### Link measured values

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

If this option is activated then the measured value points will be joined together with a black line.

#### 4.4.2.2.2.3

## Control chart template - Limit values

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

Definition of warning and intervention limits to be shown on the control chart.

## Warning limits

Warning limits are displayed in **orange** on the control chart.

Lower warning limit.

|               |                                                   |
|---------------|---------------------------------------------------|
| Input range   | <b>-1.0·10<sup>99</sup> - 1.0·10<sup>99</sup></b> |
| Default value | <b>0</b>                                          |

Upper warning limit.

|               |                                                   |
|---------------|---------------------------------------------------|
| Input range   | <b>-1.0·10<sup>99</sup> - 1.0·10<sup>99</sup></b> |
| Default value | <b>1</b>                                          |

Intervention limits are displayed in **red** on the control chart.

## Lower intervention limit.

|               |                                                   |
|---------------|---------------------------------------------------|
| Input range   | <b>-1.0·10<sup>99</sup> - 1.0·10<sup>99</sup></b> |
| Default value | <b>0</b>                                          |

Upper intervention limit.

|               |                                                   |
|---------------|---------------------------------------------------|
| Input range   | <b>-1.0·10<sup>99</sup> - 1.0·10<sup>99</sup></b> |
| Default value | <b>1</b>                                          |

There is *no* monitoring of the intervention limit and the warning limit as to whether the lower value is smaller than the upper one or, conversely, whether the upper value is greater than the lower one.

Dialog window: Database ► Tools ► Templates ► Control chart templates... ► Control chart templates ► [Edit] ► Properties... ► Properties - Control chart template - 'Name' ► [Edit] ► Properties... ► Control chart - result properties ► Statistics

Definition of the display of statistics data on the control chart.

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

If this check box is activated, then the statistics data for **Mean value**, **Standard deviation**, **Number of measuring points** and **Minimum and maximum values** will be shown underneath the graph display.

### Draw in mean value

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

If this check box is activated, then the **Mean value** will be shown on the control chart as a continuous line in the color of the measured values.

### Draw in standard deviation

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

If this check box is activated, then the two values **Mean value + Absolute standard deviation** and **Mean value - Absolute standard deviation** will be shown on the control chart as dotted lines in the color of the measured value.

### 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, although 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:

|                      |                                                                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>New...</b>        | Creates a new template. The <b>Export template 'Name'</b> window opens in which a new template can be defined ( <i>see Chapter 4.4.3.2, page 157</i> ).   |
| <b>Properties...</b> | Edits the selected template. The <b>Export template 'Name'</b> window opens in which the template can be edited ( <i>see Chapter 4.4.3.2, page 157</i> ). |



**\*.txt (Measuring point list)**

Data exchange format for the measuring point list with unformatted text that can be imported into corresponding PC programs. The text file contains a document header with date/time of the determination and the determination ID. This is followed by the measuring point lists of the individual commands are listed one after the other. The command name is listed first for each measuring point list, followed by a header with the designations and the units of the measured values of the command. This is followed by the list of the measuring points, each measuring point is listed in a separate line and consists of a time indication and all measured values generated by the command.

## [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 159*).



## NOTE

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 160) or **Options for measuring point list** (see Chapter 4.4.3.2.4, page 161) dialog window in which the separators can be defined.



## NOTE

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     | <b>Determination ID   Sample data   Request on each export   Fixed file name (append data)</b> |
| Default value | <b>Determination ID</b>                                                                        |

**Determination ID**

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

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 additionally be appended to the date.

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.

If this option is selected, then the name of the export file will be formed from the name entered here and the suffix for the format. If the file is already present in the directory, then the data will be appended to this file.



The **Fixed file name (append data)** can only be selected for the **\*.csv (Comma Separated)** file type.

#### 4.4.3.2.2

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

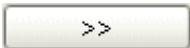
**[Select fields]** in the properties window for export templates opens the **Select fields** dialog window in which the fields for data export can be selected for the **\*.csv** file type.

Display of all the fields that can be exported.

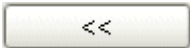
Display of all the fields that will be exported.

Non-editable name of the field to be exported.

Field name editable by the user for the exported field. The **Default name** is entered as default. If the field name is deleted, then the **Default name** will appear again.



Adds the selected field.



Removes the selected field.



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



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

4.4.3.2.3      **Export template - Options for CSV format**

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

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

**Field separator**

Selection of the field separator.

|               |                    |
|---------------|--------------------|
| Selection     | <b>;   ,   TAB</b> |
| Default value | <b>;</b>           |

**Record separator**

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

|               |                        |
|---------------|------------------------|
| Selection     | <b>CR/LF   CR   LF</b> |
| Default value | <b>CR/LF</b>           |

**Header**

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

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

























#### 4.5.2.5.1 Filtering determinations - Overview

#### 4.5.2.5.4 Determinations - Special filter

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

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

## Filter

Selection of the filter to be loaded for editing.

|               |                            |
|---------------|----------------------------|
| Selection     | 'Filter name'   New filter |
| Default value | New filter                 |

**'Filter name'**

The saved filter is loaded.

### New filter

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

**[Save filter]**

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

[Delete filter]

The currently loaded special filter is deleted.

### Table view

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

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

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

## Functions

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

|                  |                                                                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Edit line</b> | Opens the <b>Edit filter criterion</b> dialog window in which the filter condition of the line selected in the table can be edited ( <i>see Chapter 4.5.2.5.7, page 176</i> ). |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]



|               |                                         |
|---------------|-----------------------------------------|
| Selection     | =   <>   <   <=   >   >=   <b>Today</b> |
| Default value | =                                       |

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.

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

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

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

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.

|       |                                                                                                                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Entry | <b>256 characters</b><br>Definition of a text expression as comparative value.<br>* can be used as a wildcard for any character string<br>if the <b>Use asterisk (*) as wildcard</b> option is<br>enabled. |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|       |                                                                               |
|-------|-------------------------------------------------------------------------------|
| Entry | <b>all possible date values</b><br>Definition of a date as comparative value. |
|-------|-------------------------------------------------------------------------------|

|               |                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| Input range   | <b>-9999 - 9999</b>                                                                                                              |
| Default value | <b>0</b>                                                                                                                         |
|               | Definition of a numerical value as a range in days in which, starting from the current date, the filtering is to be carried out. |

for fields of the type = number

|       |                                                                                               |
|-------|-----------------------------------------------------------------------------------------------|
| Entry | <b>all possible numerical values</b><br>Definition of a numerical value as comparative value. |
|-------|-----------------------------------------------------------------------------------------------|

## Match case

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

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

### Use asterisk (\*) as wildcard

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

If this option is activated, then the asterisk **\*** is used as a wildcard for any character strings when filtering fields of the **Text** type.

#### 4.5.2.6 Determinations - Batch

#### 4.5.2.6.1 Batch - Overview

Subwindow: **Database ▶ Determination overview**

A **Batch** is a selection of determinations that can be combined to suit and that can be saved under a single name and also selected again under this name. A batch can include a maximum of 500 determinations.

The following possibilities exist for loading and managing batches in the determination table:

- *Select batch*
- *Create batch*
- *Delete batch*
- *Attach determinations to batch*
- *Remove determinations from batch*

#### 4.5.2.6.2 Creating a batch

**Dialog window: Database ► Determinations ► Batch ► New batch... ► New batch**

The **Determinations ► Batch ► New batch...** menu item opens the **New batch** dialog window for creating a new batch.

**Batch name**

Name of the batch.

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

## Deleting a batch

**Dialog window: Database ► Determinations ► Batch ► Delete batch... ► Delete batch**

The **Determinations ► Batch ► Delete batch...** menu item opens the **Delete batch** dialog window for deleting a batch.

**Batch name**

Selection of the batch that is to be deleted.

| Selection | 'Batch name' |
|-----------|--------------|
|-----------|--------------|

## Attaching determinations to a batch

**Dialog window: Database ► Determinations ► Batch ► Append to batch... ► Append to batch**

The **Determinations ► Batch ► Append to batch...** menu item opens the **Append to batch** dialog window for adding determinations to an existing batch.

**Batch name**

Selection of the batch to which the selected determinations are to be attached.

| Selection | 'Batch name' |
|-----------|--------------|
|-----------|--------------|

## Selection

Selection of the determinations that are to be added to the batch.

Selection **Selected determinations** | **All filtered determinations**

### Selected determinations

The data sets selected in the determination overview are added to the batch.

### All filtered determinations

All of the data sets filtered in the determination overview are added to the batch.

## Removing determinations from a batch

**Dialog window: Database ► Determinations ► Batch ► Delete batch...**

The **Determinations ► Batch ► Delete batch...** menu item is used to delete the determinations selected in the determination table from the loaded batch.

#### 4.5.2.7 Signing determinations

#### 4.5.2.7.1 Rules for electronic signatures

Program parts: **Method / Database**

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

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

#### 4.5.2.7.2 Signature Level 1

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

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

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



## Info

| Selection | Signature possible<br>(signature 2 exists) | Signature 1 not possible<br>Signature not possible<br>(accessed by other client) |
|-----------|--------------------------------------------|----------------------------------------------------------------------------------|
| 1         |                                            |                                                                                  |
| 2         |                                            |                                                                                  |
| 3         |                                            |                                                                                  |
| 4         |                                            |                                                                                  |
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| 100       |                                            |                                                                                  |

The selected method or determination can be signed.

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

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

Entry of the user name (short name).

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

Entry of the password.

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

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

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

Entry of a comment on the signature.

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

Sign the method or determination. The window remains open.



## NOTE

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

#### 4.5.2.7.3 Signature Level 2

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

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

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



## NOTE

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<br>(signature 1 missing)   Signature not possible<br>(accessed by other client) |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 0         |                                                                                                                               |
| 1         |                                                                                                                               |
| 2         |                                                                                                                               |
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| 99        |                                                                                                                               |

**Signature possible**

The selected method or determination can be signed.

**Signature 2 not possible (signature 1 missing)**

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

**Signature not possible (accessed by other client)**

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

**User**

Entry of the user name (short name).

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

## Password

Entry of the password.

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

## Reason

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

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

### Comment

Entry of a comment on the signature.

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

**[Sign]**

Sign the method or determination. The window remains open.



## NOTE

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

#### 4.5.2.7.4 Displaying determination signatures

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

**Signature**

Shows at which level the determination has been signed (**Level 1** or **Level 2**).

**Signature date**

Date and time at which the determination was signed.

**User**

Short name of the user who signed the determination.

## Full name

Full name of the user who signed the determination.

## Reason

Reason for signature.

### Signature comment

Comment on the signature.

#### 4.5.2.7.5 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.



## NOTE

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

#### 4.5.2.8 Sending determinations to

Dialog window: **Database ► Determinations ► Send to... ► Send determinations by e-mail**

The **Send determinations by e-mail** dialog window opens with the **Determinations ► Send to...** menu item.

Selection of how the file name is to be formed for sending.

|               |                         |                    |                  |
|---------------|-------------------------|--------------------|------------------|
| Selection     | <b>Determination ID</b> | <b>Sample data</b> | <b>File name</b> |
| Default value | <b>Determination ID</b> |                    |                  |

## Determination ID

The name of the export file is formed out of an unambiguous determination ID, the computer name, the date stamp "-YYYYMMDD-HHMMSS" and the suffix for the format.

## Sample data

Selection of the sample data. The name of the export file is formed out of this ID, 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.

**File name**

Name under which the export file of a determination is to be saved as an attachment to the e-mail message. If more than one determination is selected, then a sequential number will be added to this name for each determination.

## Sample data

Only editable for **File name** = **Sample data**, otherwise inactive.

|               |                                                              |
|---------------|--------------------------------------------------------------|
| Selection     | <b>Ident</b>   <b>Info 1</b>   <b>Info 2</b>   <b>Info 3</b> |
| Default value | <b>Ident</b>                                                 |

After confirmation of the file name with **[OK]**, the default Windows e-mail client opens with an empty message and the export files of the selected determinations are automatically added as an attachment in the **\*.rdet** format.

#### 4.5.2.9 Exporting determinations

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

Click on the **Determinations ► Export...** menu item to open the **Export determinations** dialog window for exporting the selected determinations.

## Selection

Selection of determinations for the export.

|               |                                                              |
|---------------|--------------------------------------------------------------|
| Selection     | <b>All selected data records   All filtered data records</b> |
| Default value | <b>All selected data records</b>                             |

### All selected data records

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

### All filtered data records

All the determinations from the determination table as a whole that correspond to the set filter are exported.

## Export template

Selection of the export template for the data export.

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

#### 4.5.2.10 Importing determinations

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

The **Determinations ► Import...** menu item opens the **Import determinations** dialog window in which the determinations to be imported must be selected. These determinations are then imported into the open database.



## NOTE

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

#### 4.5.2.11 Deleting determinations

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

The selected determinations are deleted after the confirmation request with the  symbol or the **Determinations ► Delete** menu item.



## NOTE

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



## NOTE

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

#### 4.5.2.12 Determinations - Showing method

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

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

## Saving the method

[Save as...]

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

#### 4.5.2.13 Determinations - Displaying history

Menu item: **Database ▶ Determinations ▶ Show history**Menu item: **Database ► Determinations ► Make current**

### Activating/deactivating history view

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

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

## Making an old version current

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

#### 4.5.2.14 Determinations - Report output

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

## Selection

|               |                                                              |
|---------------|--------------------------------------------------------------|
| Selection     | <b>Selected determinations   All filtered determinations</b> |
| Default value | <b>Selected determinations</b>                               |

### Selected determinations

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

### All filtered determinations

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

## Report type

|               |                                                             |
|---------------|-------------------------------------------------------------|
| Selection     | <b>Original report template(s)</b>   <b>Report template</b> |
| Default value | <b>Original report template(s)</b>                          |

**Original report template(s)**

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

## Report template

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

### Output target

## Printer

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

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

|               |                                         |
|---------------|-----------------------------------------|
| Selection     | <b>Default printer   'Printer name'</b> |
| Default value | <b>Default printer</b>                  |

PDF file

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

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



#### 4.5.2.15.1 Opening detail overview

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

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

### Selected determinations

### All filtered determinations

### All filtered determinations

After the determinations have been selected (*see Chapter 4.5.2.15.1, page 189*), the **Detail overview - Results** dialog window opens in which the results and control charts for the selected determinations are displayed.

- *Results*
- *Control chart*

#### 4.5.2.15.3 Detail overview - Results

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

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

## Graph display

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

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

The result values are presented with the following symbols:



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



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



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

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

|                 |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------|
| <b>Show all</b> | Shows the entire graph. This menu item is always enabled.                               |
| <b>Zoom...</b>  | Opens the dialog for entry of a zoom range ( <i>see Chapter 4.5.2.15.5, page 196</i> ). |
| <b>Unzoom</b>   | Undoes the last zoom action.                                                            |
| <b>Copy</b>     | Copies the graph.                                                                       |

## Axes

**y axis**

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

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

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

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

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

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

Mean value of the results.

Smallest value of the results.

Largest value of the results.

Absolute standard deviation of the results.

## Relative standard deviation of the results.

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

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

**Date**

Date the determination was recorded.

## Number

Number of the determination (sorted chronologically).

**Ident**

Identification for the sample data of the determination.

## Method

Name of the method used for the determination.

## Induction time

Value of the induction time.

### Stability time

Value of the stability time.

## Standard time

Value of the standard time.

## Statistics

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

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

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

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

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

|     |                                                                                 |
|-----|---------------------------------------------------------------------------------|
| On  | Activates the <b>Statistics</b> check box for the highlighted determinations.   |
| Off | Deactivates the <b>Statistics</b> check box for the highlighted determinations. |

Inverts the selection of the highlighted determinations.

**[Print (PDF)]**

#### 4.5.2.15.4 Detail overview - Control chart

| Selection | 'Saved templates' |
|-----------|-------------------|
|-----------|-------------------|





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



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

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

|          |                                                                                         |
|----------|-----------------------------------------------------------------------------------------|
| Show all | Shows the entire graph. This menu item is always enabled.                               |
| Zoom...  | Opens the dialog for entry of a zoom range ( <i>see Chapter 4.5.2.15.5, page 196</i> ). |
| Unzoom   | Undoes the last zoom action.                                                            |
| Copy     | Copies the graph.                                                                       |

**Axes**

**y axis**

The configuration of the y axis takes place in the properties of the control chart (*see Chapter 4.4.2.2, page 152*).

**x axis**

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

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

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

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

**Table**

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

**Date**

Date the determination was recorded.

**Number**

Number of the determination (sorted chronologically).

**Ident**

Identification for the sample data of the determination.

Name of the method used for the determination.

Value of the induction time.

Value of the stability time.

Value of the standard time.

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

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

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

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

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

|                  |                                                                                 |
|------------------|---------------------------------------------------------------------------------|
| On               | Activates the <b>Statistics</b> check box for the highlighted determinations.   |
| Off              | Deactivates the <b>Statistics</b> check box for the highlighted determinations. |
| Invert selection | Inverts the selection of the highlighted determinations.                        |



## NOTE

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

## Functions

**[Print (PDF)]**

Opens the **Print control chart (PDF)** dialog window (see Chapter 4.5.2.15.7, page 197), in which the contents of the control chart can be output as a PDF file in the required format.

#### 4.5.2.15.5 Detail overview - Zooming

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

Specifies the displayed area; this is always spanned over the whole size of the graphics window.

**x axis**

Visible range in X direction.

**from**

Starting point in X direction.

|             |                      |
|-------------|----------------------|
| Input range | $-10^{12} - 10^{12}$ |
|-------------|----------------------|

**to**

Endpoint in X direction.

|             |                      |
|-------------|----------------------|
| Input range | $-10^{12} - 10^{12}$ |
|-------------|----------------------|

### Y Axis

Visible range in Y direction.

**from**

Starting point in Y direction.

|             |                      |
|-------------|----------------------|
| Input range | $-10^{12} - 10^{12}$ |
|-------------|----------------------|

**to**

Endpoint in Y direction.

|             |                      |
|-------------|----------------------|
| Input range | $-10^{12} - 10^{12}$ |
|-------------|----------------------|

#### 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     | <b>All result types</b>   'Selected results' |
| Default value | <b>All result types</b>                      |

Produces a result overview for all result types.

### 'Selected results'

Produces a result overview for the selected results only.

## Orientation

|               |                             |
|---------------|-----------------------------|
| Selection     | <b>Portrait   Landscape</b> |
| Default value | <b>Portrait</b>             |

## 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 the 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     | <b>Portrait   Landscape</b> |
| Default value | <b>Portrait</b>             |

## Portrait

Produces the control chart in portrait format.

## Landscape

Produces the control chart in landscape format.

### Comment

Possibility of entering comments on the control chart which will be produced together with the control chart.

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

[OK]

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



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

|                      |                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------|
| <b>Show all</b>      | Shows the entire graph.                                                                   |
| <b>Zoom...</b>       | Opens the dialog for entry of a zoom range ( <i>see Chapter 4.8.5.2, page 240</i> ).      |
| <b>Unzoom</b>        | Undoes the last zoom action.                                                              |
| <b>Copy</b>          | Copies the graph.                                                                         |
| <b>Properties...</b> | Defines the properties for the curve display ( <i>see Chapter 4.5.2.16.3, page 201</i> ). |

### Axes

The **x axis** is automatically scaled in such a way that the longest curve is displayed in its entirety.

The **Y axis** is automatically scaled in the unit of the first selected determination and adjusted to the largest curve.

## Table

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

## Date \_\_\_\_\_

Date the determination was recorded.

## Number

Number of the determination (sorted chronologically).

## Ident

Identification for the sample data of the determination.

## Method

Name of the method used for the determination.

## Sample temperature [°C]

Value of the sample temperatur used for the determination.

## Induction time [h]

Value of the induction time determined.

## Stability time [h]

Value of the stability time determined.

### Legend

Color of the line in which the curve is displayed.























#### 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**
- Whole numbers 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, the number is incremented. **Sample 1->Sample 2**

Fields that cannot be incremented:

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

#### 4.5.2.17.4.4 Filling up lines

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

The selected cell entries of the first line are thereby transferred during filling into the cells of the selected section lying below, with the cell entries lying below being overwritten during this process. To accomplish this, the cursor is pulled across the cells that are to be filled, starting from the first, modified cell.

Only sample data fields can be filled:

- **Ident**
- **Info 1**
- **Info 2**
- **Info 3**











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

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

$b$  Axis intercept of the linear regression

$$(4) \quad B = m$$

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

#### Calculation of the temperature coefficient $Q_{10}$

In accordance with equation (2) for  $T_1$  and  $T_2$ , results in

$$\ln(t_1) = B \cdot T_1 + \ln A$$

$$\ln(t_2) = B \cdot T_2 + \ln A$$

$$(6) \quad \ln(t_2) - \ln(t_1) = B \cdot T_2 + \ln A - B \cdot T_1 - \ln A$$

$$(7) \quad \ln \frac{t_2}{t_1} = B(T_2 - T_1)$$

$$(8) \quad \frac{t_2}{t_1} = e^{B(T_2 - T_1)}$$



| Variable symbol | Variable name                        | Unit | Description                                                              |
|-----------------|--------------------------------------|------|--------------------------------------------------------------------------|
| $t_e$           | Induction time at target temperature | h    | Induction or stability time at target temperature $T_e$ to be calculated |

#### 4.5.2.18.1.3 Calculation in accordance with Arrhenius

Subwindow: **Database ► Extrapolation**

According to Arrhenius, the dependency of the reaction speed on the temperature is described with the following formula:

$$(1) \quad t = A \cdot e^{(B \cdot \frac{1}{T})}$$

| Variable symbol | Variable name               | Unit | Description                                                                                       |
|-----------------|-----------------------------|------|---------------------------------------------------------------------------------------------------|
| $t$             | Induction or stability time | h    | Time until the break point or the defined conductivity change in the conductivity vs. time curve. |
| $A$             | Coefficient                 |      |                                                                                                   |
| $B$             | Arrhenius coefficient       |      |                                                                                                   |
| $T$             | Temperature                 | K    | Temperature for which the induction or stability time is calculated.                              |

#### Linear equation for the calculation of the coefficients A and B from the linear regression

Equation (1) logarithmized

$$(2) \quad \ln(t) = B \cdot \frac{1}{T} + \ln A$$

General linear equation

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

$y$  corresponds to  $\ln(t)$

$x$  corresponds to  $\frac{1}{T}$

$m$  Slope of the linear regression



















































### 5.1.3 Method - Menu bar

#### 5.1.3.1 Method - Menu File

Program part: **Method**

|                                                                                                             |                                                                                               |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|  <b>New...</b>             | Create a new method ( <i>see Chapter 5.2.1, page 247</i> ).                                   |
|  <b>Open...</b>            | Open an existing method ( <i>see Chapter 5.2.2, page 247</i> ).                               |
|  <b>Save</b>               | Save the selected method ( <i>see Chapter 5.2.6, page 250</i> ).                              |
| <b>Save as...</b>                                                                                           | Save the selected method under a new name ( <i>see Chapter 5.2.6, page 250</i> ).             |
| <b>Close all</b>                                                                                            | Close all opened methods ( <i>see Chapter 5.2.9, page 254</i> ).                              |
|  <b>Close</b>              | Close the selected method ( <i>see Chapter 5.2.9, page 254</i> ).                             |
|  <b>Method check</b>       | Check the selected method for plausibility ( <i>see Chapter 5.2.5, page 250</i> ).            |
|  <b>Method manager...</b>  | Open the method manager ( <i>see Chapter 5.3.1, page 254</i> ).                               |
|  <b>Method groups...</b> | Open the method groups manager ( <i>see Chapter 5.4.1, page 265</i> ).                        |
|  <b>Print (PDF)...</b>   | PDF file output of the method report ( <i>see Chapter 5.2.8, page 253</i> ).                  |
|  <b>Logout...</b>        | Log out the user. The <b>Login</b> dialog window opens ( <i>see Chapter 2.2.3, page 13</i> ). |
| <b>Exit</b>                                                                                                 | Exit the program.                                                                             |

#### 5.1.3.2 Method - Menu View

Program part: **Method**

|                |                                          |
|----------------|------------------------------------------|
| <b>Toolbar</b> | Activate/deactivate the toolbar display. |
|----------------|------------------------------------------|

#### 5.1.3.3 Help menu

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

|                                                                                                         |                                                             |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
|  <b>StabNet Help</b> | Open StabNet Help.                                          |
| <b>About</b>                                                                                            | Display information about the program and the installation. |







































**Full name**

Full name of the user who saved the method.

**Modification reason**

Reason entered when saving the modified method.

**Modification comment**

Comment entered when saving the modified method.

**[Show method]**

Open the **Method 'Method name' - Version #** dialog window, in which the method for the selected method version is displayed.

**[Make current]**

Make the selected method version to the current method version. This creates a new method whose version number is increased by **+1** compared with the last version to have been saved.

## 5.4 Method groups

### 5.4.1 Managing method groups

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

Using the  symbol or the **File ► Method groups...** menu item, the **Method groups** dialog window is opened, where a user with corresponding access rights can manage method groups. The information on the existing method groups is shown in a table. The table cannot be edited and is not automatically updated. By clicking on the column title the table can be sorted according to the selected column in either ascending or descending order.

**Name**

Name of the method group.

**Number**

Shows the number of methods in the method group.

**Saved**

Date and time when the method group was saved.

**User**

Short name of the user who saved the method group.

**Full name**

Full name of the user who saved the method group.







|               |                                         |
|---------------|-----------------------------------------|
| Selection     | <b>none   2 positions   4 positions</b> |
| Default value | <b>none</b>                             |

**none**

All positions can be started and stopped individually. The determinations can be started directly at the instrument by pressing the start buttons. Stopping is not possible at the instrument.

**2 positions**

The 2 positions can be started and stopped one after the other. The two 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.

**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   | <b>0 - 1,000 min</b> (Increment: <b>1</b> ) |
| Default value | <b>0 min</b>                                |

**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   | <b>1 - 400 µS/cm</b> (Increment: <b>1</b> ) |
| Default value | <b>20 µS/cm</b>                             |

**Stop criteria****Time**

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

Time until the automatic stop of the determination.

|               |                                                  |
|---------------|--------------------------------------------------|
| Input range   | <b>0.1 - 99,999.9 h</b> (Increment: <b>0.1</b> ) |
| Default value | <b>24.0 h</b>                                    |



**on**

If the conductivity sensor assignment is enabled, the cell constant for the assigned sensor is saved in the instrument from the configuration for the measuring position being used when starting a determination. Thus, this cell constant is the basis for calculating the conductivity until the start of the next determination. The conductivity sensor being used is reserved during the determination, i.e. it cannot be used for another determination or cell constant determination. Manual input of the cell constant is not possible during the determination.

**off**

If the conductivity sensor assignment is disabled, a cell constant of 1.1/cm is saved in the instrument for the measuring position being used when starting a determination. This value is the basis for calculating the conductivity until the start of the next determination.

### 5.5.2 Table of temperature correction values

If a temperature sensor is not available for the temperature correction determination, the following approximations can be entered:

*Table 2 Temperature correction values for 892 Professional Rancimat and 893 Professional Biodiesel Rancimat. Condition: 6 g silicone oil, gas = air*

| Setpoint temperature (°C) | Temperature correction value (°C) for gas flow = 10 L/h | Temperature correction value (°C) for gas flow = 20 L/h |
|---------------------------|---------------------------------------------------------|---------------------------------------------------------|
| 80                        | 0.7                                                     | 1.1                                                     |
| 90                        | 0.8                                                     | 1.3                                                     |
| 100                       | 0.8                                                     | 1.4                                                     |
| 110                       | 0.9                                                     | 1.5                                                     |
| 120                       | 1.0                                                     | 1.6                                                     |
| 130                       | 1.1                                                     | 1.7                                                     |
| 140                       | 1.1                                                     | 1.8                                                     |
| 150                       | 1.2                                                     | 1.9                                                     |
| 160                       | 1.2                                                     | 2.0                                                     |





































y1 Axis



NOTE

The settings for the y1 axis are used for displaying the live curve in the **Workplace** program part and for displaying the curve for the saved determination in the **Database** program part.

Axis label

Freely definable axis label.

|               |                                 |
|---------------|---------------------------------|
| Selection     | <b>auto   User-defined text</b> |
| Default value | <b>auto</b>                     |

**auto**

The unit is used as a label with **auto**.

**User-defined text**

User-defined text can be entered.

Default view

Defining the standard display for the y1 axis.

|               |                         |
|---------------|-------------------------|
| Selection     | <b>Show all   Range</b> |
| Default value | <b>Show all</b>         |

**Show all**

The entire y1 axis from **0 - the recording time** is displayed.

**Range**

Only the specified y1 axis area between **from** and **to** is displayed.

from

Initial value for scaling the y1 axis.

|               |                |
|---------------|----------------|
| Input range   | <b>0 - 999</b> |
| Default value | <b>0</b>       |

to

End value for scaling the y1 axis.

|               |                |
|---------------|----------------|
| Input range   | <b>0 - 999</b> |
| Default value | <b>400</b>     |









Selection of the color to be used for graphically displaying the tangents.

|               |                                         |
|---------------|-----------------------------------------|
| Selection     | <b>dark gray   12 additional colors</b> |
| Default value | <b>dark gray</b>                        |

Line thickness

|               |                      |
|---------------|----------------------|
| Input range   | <b>1 - 10 pixels</b> |
| Default value | <b>1 pixels</b>      |

Graph

Background



**NOTE**

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

Clicking on the  symbol opens the **Select color** dialog window (see Chapter 2.5.4, page 62).

Axes



**NOTE**

The settings for the axes are used for displaying the live curve in the **Workplace** program part and for displaying the curve for the saved determination in the **Database** program part.

Selection of the color to be used for displaying the axes.

|               |                                     |
|---------------|-------------------------------------|
| Selection     | <b>black   12 additional colors</b> |
| Default value | <b>black</b>                        |

Line thickness

|               |                      |
|---------------|----------------------|
| Input range   | <b>1 - 10 pixels</b> |
| Default value | <b>1 pixels</b>      |









|                                                                                   |                                                                                                                                                      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Manage security settings with options for login, password protection, Audit Trail and electronic signature ( <i>see Chapter 6.2.2.1, page 313</i> ). |
|  | Open the Audit Trail ( <i>see Chapter 6.4, page 337</i> ).                                                                                           |
|  | Log out user ( <i>see Chapter 2.2.3, page 13</i> ).                                                                                                  |
|  | Modify layout of loaded configuration view ( <i>see Chapter 4.1.7.2, page 102</i> ).                                                                 |
|  | Load a saved configuration view ( <i>see Chapter 4.1.7.3, page 103</i> ).                                                                            |
|  | Save current configuration view ( <i>see Chapter 4.1.7.4, page 103</i> ).                                                                            |
|  | Open StabNet Help.                                                                                                                                   |

### 6.1.5 Configuration - Subwindows

Program part: **Configuration**

#### Selection

The following subwindows can be displayed in the main window:

- *Devices*  
Display of the automatically recognized devices.
- *Sensors*  
Display of the data for all defined sensors.
- *Temperature coefficients*  
Display of the Q10 factors and Arrhenius coefficients of different samples.

#### Presentation

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

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

### 6.1.6 Configuration - Functions

Program part: **Configuration**

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

#### Views

- *Change the layout of the configuration view*



## 6.1.7 Views

### 6.1.7.1 Views - General

Program part: **Configuration/Database /**

#### Definition

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

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

#### Functions

The following functions are possible for views:

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

#### Save automatically

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

#### Load automatically

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

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

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



















































**NOTE**

Starting with Windows Vista, Microsoft has introduced the UAC (User Account Control), which permits running tasks either as non-administrator or as administrator (without changes of user, switching off or similar). This function can, however, cause difficulties with client/server installations of **StabNet** on computers with Windows Vista or Windows 7. Therefore, to add additional licenses, proceed as follows:

- **For new installations**

To enter additional licenses, you must start the program as an administrator (right-click on the program icon and select **Run as administrator** there). If you then add the license code for additional licenses in the usual way, then the **license.mlic** file in the **C:\Program Files\Metrohm\Program name\bin** directory will contain both license codes.

- **For existing installations**

First of all, the **license.mlic** file in the **C:\Users\User\AppData\Local\VirtualStore\Program Files\Metrohm\Program name\bin** directory must be deleted. This file must not be present in the **VirtualStore** of any user – you must check to make sure this is the case, and any such files which may be found must be deleted. Afterwards, you must start the program as an administrator (right-click on the program icon and select **Run as administrator** there). If you then add the license code for additional licenses in the usual way, then the **license.mlic** file in the **C:\Program Files\Metrohm\Program name\bin** directory will contain both license codes.

Additional information on this topic can be found in the installation manual, which is saved in the **C:\Program Files\Metrohm\StabNet\doc** directory.























|                                                                                                            |                                                                               |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|  <b>Special filter...</b> | Define and apply a special filter ( <i>see Chapter 6.4.3.1.4, page 344</i> ). |
|  <b>Remove filter</b>     | Remove the current filter ( <i>see Chapter 6.4.3.1.5, page 348</i> ).         |

#### 6.4.1.3.5 Audit Trail - Tools menu

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

|                                |                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Monitoring</b>              | Define Audit Trail table monitoring ( <i>see Chapter 6.4.3.6, page 351</i> ).                            |
| <b>Installation Log</b>        | Open the folder with the log files of the installation.                                                  |
| <b>Verify export / archive</b> | Check the checksum of an exported or archived Audit Trail file ( <i>see Chapter 6.4.3.7, page 351</i> ). |

#### 6.4.1.3.6 Audit Trail - Help menu

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

|                                                                                                       |                                                             |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
|  <b>StabNet Help</b> | Open StabNet Help.                                          |
| <b>About</b>                                                                                          | Display information about the program and the installation. |

#### 6.4.1.4 Audit Trail - Toolbar

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

|                                                                                     |                                                                                          |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  | Output Audit Trail data sets as PDF file ( <i>see Chapter 6.4.1.3.2, page 338</i> ).     |
|  | Apply the last quick or special filter again ( <i>see Chapter 6.4.3.1.2, page 343</i> ). |
|  | Apply the quick filter ( <i>see Chapter 6.4.3.1.3, page 344</i> ).                       |
|  | Define and apply a special filter ( <i>see Chapter 6.4.3.1.4, page 344</i> ).            |
|  | Removes the current filter ( <i>see Chapter 6.4.3.1.5, page 348</i> ).                   |
|  | Update Audit Trail table ( <i>see Chapter 6.4.2.4, page 343</i> ).                       |
|  | Opening program help.                                                                    |



















































































|           |                                                                                                                                                                                                         |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4</b>  | <b>Measuring vessel cover gray</b><br>This measuring position is not available for starting a determination (device not connected to computer or no method loaded).                                     |
| <b>5</b>  | <b>Conductivity display</b><br>Conductivity cannot be displayed (no sensor connected or no valid measuring signal).                                                                                     |
| <b>6</b>  | <b>Gas flow display block B</b><br>Shows the gas flow measured on block B (gray background: gas flow switched off; white background: gas flow switched on).                                             |
| <b>7</b>  | <b>Temperature display block B</b><br>Shows the temperature measured on block B (gray background: heater switched off; red background: temperature not reached; green background: temperature reached). |
| <b>8</b>  | <b>Temperature display block A</b><br>Shows the temperature measured on block A (gray background: heater switched off; red background: temperature not reached; green background: temperature reached). |
| <b>9</b>  | <b>Gas flow display block A</b><br>Shows the gas flow measured on block A (gray background: gas flow switched off; white background: gas flow switched on).                                             |
| <b>10</b> | <b>Conductivity display</b><br>Shows the conductivity measurement.                                                                                                                                      |

## 7.2 893 Professional Biodiesel Rancimat

### 7.2.1 Device properties

The parameters for the 893 Professional Biodiesel Rancimat are defined on the following tabs:

- *General*  
General device information such as device name, device type, serial number, etc.
- *Gas flow*  
Information about the pump as well as filter and molecular sieve monitoring.
- *Temperature correction*  
Results of the temperature correction determined in the workplace.
- *GLP*  
Information on GLP tests and GLP monitoring.























### 7.3.1.4 Dialog window Load new program version

Dialog window: **Configuration** ▶ **Devices** ▶ **[Edit]** ▶ **Properties...** ▶ **Properties - 'Device type' - 'Device name'** ▶ **[General ▶ Update]** ▶ **Load new program version**

If it is discovered that the device to be connected has an old program version not supported by StabNet, then it must be updated. Select the device from the device table. Open the Properties window with **Edit ▶ Properties...** On the **General** tab, click on **[Update]** to open the **Load new program version** dialog window.

#### Old version

Shows the old device program version.

#### New version

Shows the new device program version.

#### [Load]

Loads the new program version. A progress bar is shown during loading.

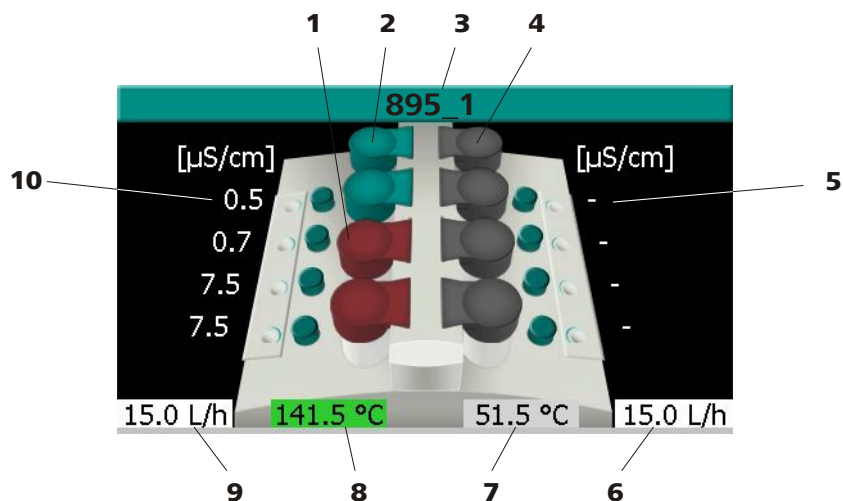


#### NOTE

Make sure that the device is not manipulated or switched off during the loading process and follow the instructions shown.

### 7.3.2 Device display

The following information is shown on the device display: measured conductivity value, heating block temperature, gas flow.









































































































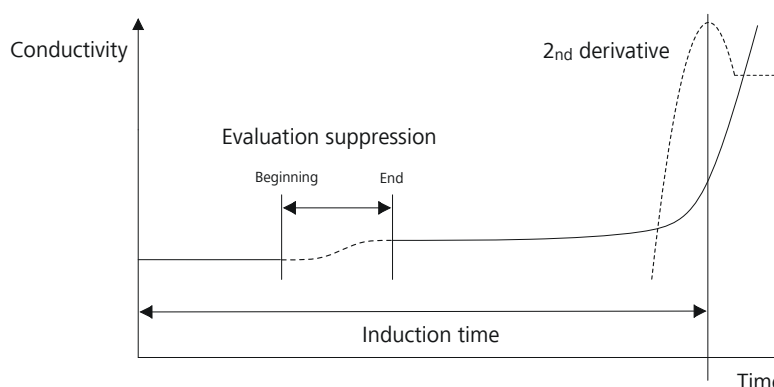




## Induction time

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.

## Q<sub>10</sub> 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:

Parameters



with a calibrated, external temperature sensor. Sensors of this type are optionally available from Metrohm under the number 6.5616.000.



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