



Operating Manual

HYDROcom6

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Your experiences and suggestions We are always interested in your suggestions and experiences that arise from use and that can be valuable for improving our products.

Proof of change The instructions correspond to the following data.

Version of the instructions	Version of the Software	Date of change	Change
3.0	starting with 6.3.1.55	01/2016	General update New layout

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About this Manual

This chapter contains basic information about this manual.

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Scope of application

PROFESSIONAL | ADVANCED | BASE

The present manual applies to the **Manufacturer's** software, of which it is a component. This software is sold in three editions, which are distinguished according to their functional scope:

BASE	Edition with the most important functions for downloading and presenting measurement data.
ADVANCED	Edition with expanded functional scope.
PROFESSIONAL	Edition with complete functional scope.

The top of each page of this manual indicates for which of the three editions the function in question is available (sometimes with limitations).

Proper use

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This software is used for downloading measurement data from electronic measurement devices or for direct recording in online mode. Downloaded or recorded data can be evaluated and presented in various ways, e.g. as tables, curves, and histograms.

Supported devices

The present version of the software is compatible with the following electronic measurement devices:

- MultiHandy 2020
- MultiHandy 2025
- MultiHandy 3020
- MultiHandy 3050
- MultiBox 306x (with firmware Version 2.3 or higher)
- MultiSystem 5000 (with firmware Version 2.9 or higher)
- MultiSystem 5050
- MultiSystem 5060 (with firmware Version 4.8m or higher)
- MultiSystem 5060 Plus
- MultiSystem 8050
- Compare
- Patrick particle counter via USB-CAN adapter

If you have questions or would like to use the software for another purpose, please contact the customer service of **Manufacturers**.

Goal of the manual

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This manual assists the user in his daily work with the software. It contains information about the software's windows, dialogs, commands, and buttons and explains particular flows and operations. For information that extends beyond the content of this manual, we will be happy to offer you customer-specific trainings. Please contact the **Manufacturer's** customer service or your local dealer or representative for further information.

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Previous knowledge

PROFESSIONAL | ADVANCED | BASE

This manual assumes that you are already familiar with the Windows operating system and its operating elements, e.g. Drop-down lists, buttons, etc. Typical Windows dialogs such as **Save as** and its operating elements will not be described in this manual.

Structure of notes

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Below, the notes used in the manual and their significance is explained.

Note

This note informs you about possibly dangerous situations that can occur in case of faulty operation/a malfunction. If these situations are not avoided, property damage to the devices or data loss can result.



This note provides tips for how you can make your work easier. In addition, with this note you receive additional information about the work process.

Abbreviations used

PROFESSIONAL ADVANCED BASE

The following abbreviations are used in this manual.

approx.	approximately
CSV	Comma separated values
e.g.	For example
If necessary	(not typically abbreviated in English)
LAN	Local Area Network
max.	maximum
min.	minimum
tab	Tabulator
USB	Universal Serial Bus
XML	Extensible Mark-up Language

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Symbols used

PROFESSIONAL ADVANCED BASE

The following symbols are used in this manual.

→	Beginning of a sequence of operations
1, 2, ...	Steps within a sequence of operations
■	End of a sequence of operations
⇒	Cross-reference to another page in this manual or another document.
(A)	Reference to the element marked with a letter in a figure.
Buttons	Blue boldface indicates switches, controllers, sliders, buttons, and software terms.
Ctrl + c	Red boldface indicates keys on the keyboard. If you should press keys at the same time, this is indicated with a plug sign (+).

Copyright

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This publication is intended only for end users of **HYDROcom 6**.

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Disclaimer

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We guarantee the error-free function of our product according to our advertisement, the production information we publish, and this manual. Other product properties are not promised. We assume no liability for cost-effectiveness and error-free function if the product is used for another purpose than the one described in section **Proper use**.

Compensation for damages is generally excluded, except if intention or gross negligence on the part of the manufacturer is proven or if promised product properties are not present. If this product is used in environments for which is it not suitable or that do not correspond to the technical standard, we are not responsible for the consequences.

We assume no liability for damage to equipment and systems around the product that is caused by an error in the product or in this manual. We are not responsible for the violation of patents and/or other rights of third parties outside of the Federal Republic of Germany.

We are not liable for damage that arises due to improper operation and failure to follow the instructions in this manual. We are not liable for lost profits and subsequent damage due to failure to follow safety and warning notes.

Our products correspond to the state of science and technology. The manufacturer constantly examines the products and the market in order to continue enhancing and improving its products.

In case of faults and/or technical problems, please contact the manufacturer's customer service. We assure you that suitable measures will be taken immediately. The manufacturer's warranty provisions apply; if you would like, we will be happy to provide you with these.

Installation and Configuration

This chapter explains the installation and configuration of the software.

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Installation

PROFESSIONAL | ADVANCED | BASE

Heed the system requirements before you install the software.

System requirements

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The installation and execution of the software is possible on many modern computer systems:

- Windows 32/64-bit operating systems, Windows XP SP3 or higher
For the processing of large measurement series, a 64-bit operating system is required.
- 1.0 GHz processor, 2.0 GHz recommended
- 1 GB RAM, 4 GB recommended
- .NET Framework Version 3.5 or higher (may be installed at the same time if necessary)

Installing the software

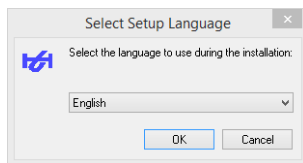
PROFESSIONAL | ADVANCED | BASE



During the installation of **HYDROcom 6** you will be supported by set-up wizards.

→ How to install **HYDROcom 6**

- 1 Disconnect all HYDROTECHNIK measurement devices from the computer.
- 2 Save and close all programs.
- 3 Execute the installation file.
If necessary, confirm the security queries.
- 4 Select the set-up language.
- 5 Follow the instructions of the set-up wizard.



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Configuration

PROFESSIONAL **ADVANCED** **BASE**

Before you work with the software, you should make a few program settings. You can change these settings at any time.

The program settings are on the **Extras** menu.

⇒ **Extras menu** on page 135

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Operating language

PROFESSIONAL **ADVANCED** **BASE**

During the installation, the default language of the operating system is automatically taken over as language for the software. If the default language of the operating system is not available as language for the software, English is used for the software.

Regardless of the default setting, you can change the language for the software on the **Language** dialog.

⇒ **Language dialog** on page 286

Request license

PROFESSIONAL **ADVANCED** **BASE**

You need a license for the software. The software is divided into three editions:

- **BASE**
- **ADVANCED**
- **PROFESSIONAL**

The edition specifies which functions of the software are available to you. The license determines which edition of the software is run.

You can upgrade the software at any time. This means you can purchase a license for a higher edition and thus enable the appropriate functions.

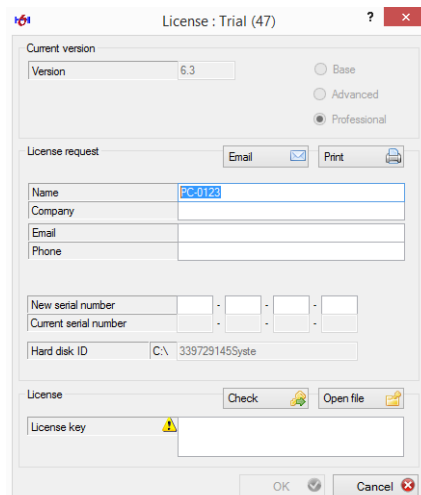
You can apply for a license with the **License** dialog or assign a license to the software.

⇒ **License dialog** on page 287

➔ **How to request a license**

- 1 Select **Menu > Extras > License**.

The **License** dialog opens.



The Windows computer name is pre-set in the **Name** field.

- 2 Fill out the following fields:

- **Name**
- **Company**
- **E-mail**
- **New serial number**

You received the serial number with your measurement device or with **HYDROcom 6**.

The hard disk ID is generated automatically and serves to identify the **HYDROcom 6** installation in question.

- 3 Click the **E-mail** or **Print** button.

An e-mail is generated in the default e-mail program or a printout is send to the default printer. The e-mail or printout contains all required information for requesting the license.

- 4 Send the e-mail or the printout to HYDROTECHNIK's customer service.

⇒ **Manufacturer** on page 2

- 5 Close the dialog with **Cancel**.



⇒ **Activating a license** on page 15

Activating a license

PROFESSIONAL | ADVANCED | BASE

You have requested a license from HYDROTECHNIK and received an XML license key file.

⇒ **Request license** on page 13

→ How to activate a license

- 1 Select [Menu > Extras > License](#).

The **License** dialog opens.



- 2 Select **From file**.

The Windows **Open** dialog appears.

- 3 Select the XML license key file that you received from HYDROTECHNIK.



- 4 Select **Test**.

A message confirms the successful test or issues an error if the test failed.

- 5 If the test fails, contact HYDROTECHNIK's customer service.

⇒ **Manufacturer** on page 2

- 6 Select **OK** to activate the license.



Setting up options

PROFESSIONAL **ADVANCED** **BASE**

Under *Menu > Extras > Options*, you specify program settings.

The **Options** dialog has five tabs:

- **General tab**
- **Printing + Tables tab**
- **Line diagram tab**
- **Format tab**
- **Performance tab**

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General tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > General

On the **General** tab, you can change the sequence of the colors that are available for the formatting of elements.

This sequence of colors is used, e.g. on the first, second, third channel, etc. in the line diagram or histogram.

⇒ **General tab** on page 291

Printing + Tables tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > Printing + Tables

On the **Printing + Tables** tab, you configure the print options. For example, you can place the company name that you have specified for the licensing on printouts.

In the **Table definition for text** area, you define parameters for the text output of tables.

⇒ **Printing + Tables tab** on page 292

⇒ **Company** on page 288

Line diagram tab

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Extras > Options > Line Diagram

In the **Labelling** area, you can configure the legends and other displays of file name and file data.

For spots on the line diagram, you can configure the format of the time display.

You can sort and scale the axes on this tab.

⇒ **Line diagram tab** on page 294

Format tab

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Tools > Options > Format

On the **Format** tab, you configure particular formatting settings that are valid globally throughout the software.

⇒ **Formatting tab** on page 298

Performance tab

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Tools > Options > Performance

On the **Performance** tab, you configure settings that may help the software run better.

⇒ **Performance tab** on page 299

Specifying directories

PROFESSIONAL | ADVANCED | BASE

You can change the directory in which format definitions and presentations are saved by default.

Format definitions affect line diagrams, histograms, classifications, and tables.

⇒ **Diagram configuration dialog** on page 154

⇒ **Histogram (bars) dialog** on page 196

⇒ **Classification definition dialog** on page 206

⇒ **Table configuration dialog** on page 216

You can change the directories using [Menu > Tools > Directories](#).

⇒ **Extras menu > Folders** on page 136

Keeping a log file

PROFESSIONAL | ADVANCED | BASE

By keeping a log file, it is much easier to troubleshoot in case problems or faults occur. The most important actions and events are logged in a log file.

Activate the check box [Menu > Tools > Keep log file](#).

The log file is created in the *My Documents* directory.

Configuring the connection to the measurement device

PROFESSIONAL | ADVANCED | BASE

Configure the connection to the measurement device on the **Connection Settings** dialog.

⇒ **Connection properties dialog** on page 234

For a connection via a COM interface or RS 232, it may be necessary to change the assignment of the COM interface on your computer. It may then be necessary to configure the RS 232 connection to the measurement device manually.

⇒ **RS 232 connection type** on page 19

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RS 232 connection type

PROFESSIONAL | ADVANCED | BASE



Normally, the assignment of the COM interface and the baud rate of the measurement device are detected automatically. On the **Connection Settings** dialog, click the button depicted.

⇒ **RS 232 connection** on page 237

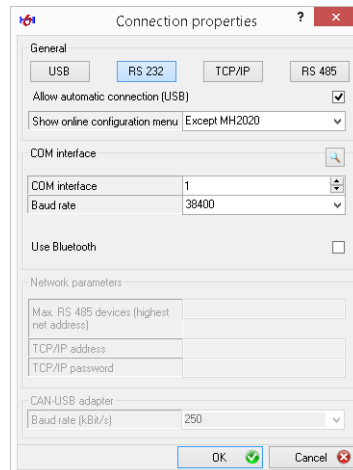
If the automatic detection fails, an error message appears.

Configuring a RS 232 connection manually

PROFESSIONAL | ADVANCED | BASE

→ How to configure the RS 232 connection manually

- 1 Select *Menu > Measurement Device > Options > RS 232*.



- 2 In the **COM Port** field, select the number of the COM interface that you have previously changed on your computer for the measurement device.
- 3 If necessary, use the **Baud rate** drop-down list to select the connection speed that you have previously changed on your computer for the measurement device.
- 4 Close the **Connection Settings** dialog with **OK**.

■

Introduction to Operation

This chapter describes the basic operation of the software.

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Control with the mouse and keyboard

PROFESSIONAL ADVANCED BASE

Operate the software with the mouse and keyboard. Use the usual mouse motions and shortcuts. Specific shortcuts will be indicated next to the menu entries.

Additional mouse functions

The shape of the mouse pointer can change; when this happens, it offers specific functions.



A horizontal line (example: Difference spot) is detected and can be moved.



A vertical line (example: Spot) is detected and can be moved.



An element (example: Value window of a spot) is detected and can be moved.



An element (example: Frame, arrow point) is detected and can be moved.

Drag & Drop with **Ctrl** key:

Some drag & drop actions only work when you are pressing down the **Ctrl** key. Example: Moving of a layout area in the viewer.

Line diagram/moving channels

You can move all channels on a line diagram. Use the middle mouse button.


On the **Move Channels** dialog, you have several opportunities to move channels.

⇒ **Move channel dialog** on page 191

Moving arrow element with the mouse

You cannot move entire arrow elements in the layout area. You can move the ends of the arrow element individually.

→ How to move an arrow element with the mouse

- 1 Move the mouse to the first end of the arrow element until the mouse changes its shape .

The **Arrow start** and **Arrow end** are displayed on the status bar.

- 2 Hold the left mouse button down and move the end of the arrow element. Here the end is indicated with a colored oval.



- 3 Release the mouse button in the desired location. The shape of the mouse changes. The colored oval remains until you click somewhere else.
- 4 Repeat steps 1 to 3 for the other end of the arrow element.



You can also move arrow elements by entering arrow properties on the entry dialog.

⇒ **Arrow properties dialog** on page 230

Additional shortcuts

Specific shortcuts for the software.

Alt + ← Alt + ↑ Alt + ↓ Alt + →	Moves the lines on a line diagram in the appropriate direction.
Alt + Page Up↑ Alt + Page Down↓	Zooms into a line diagram. Zooms out of a line diagram.

About zooming

PROFESSIONAL | ADVANCED | BASE

By zooming, you can display areas of the line diagram enlarged.

You can zoom in three ways:

- Scroll wheel
- **Alt** key + drag with the mouse
- Keys **Alt** + **Page Up**↑, **Alt** + **Page Down**↓

Zooming with the scroll wheel

After you have marked the line diagram, you can zoom in and out with the scroll wheel.

You can move the zoomed area by holding down the scroll wheel. For this, the scroll wheel on your mouse must also have a third mouse button.

Zooming with Alt key + dragging the mouse

If you hold the **Alt** key and the left mouse button down, you can draw a rectangle. The line diagram is zoomed up to this rectangle.

Moving zoomed detail

After you have zoomed in on a line diagram, you can move the zoomed detail by holding down the middle mouse button.

Zoom out to original size

There are two ways to return to the original size of the line diagram:

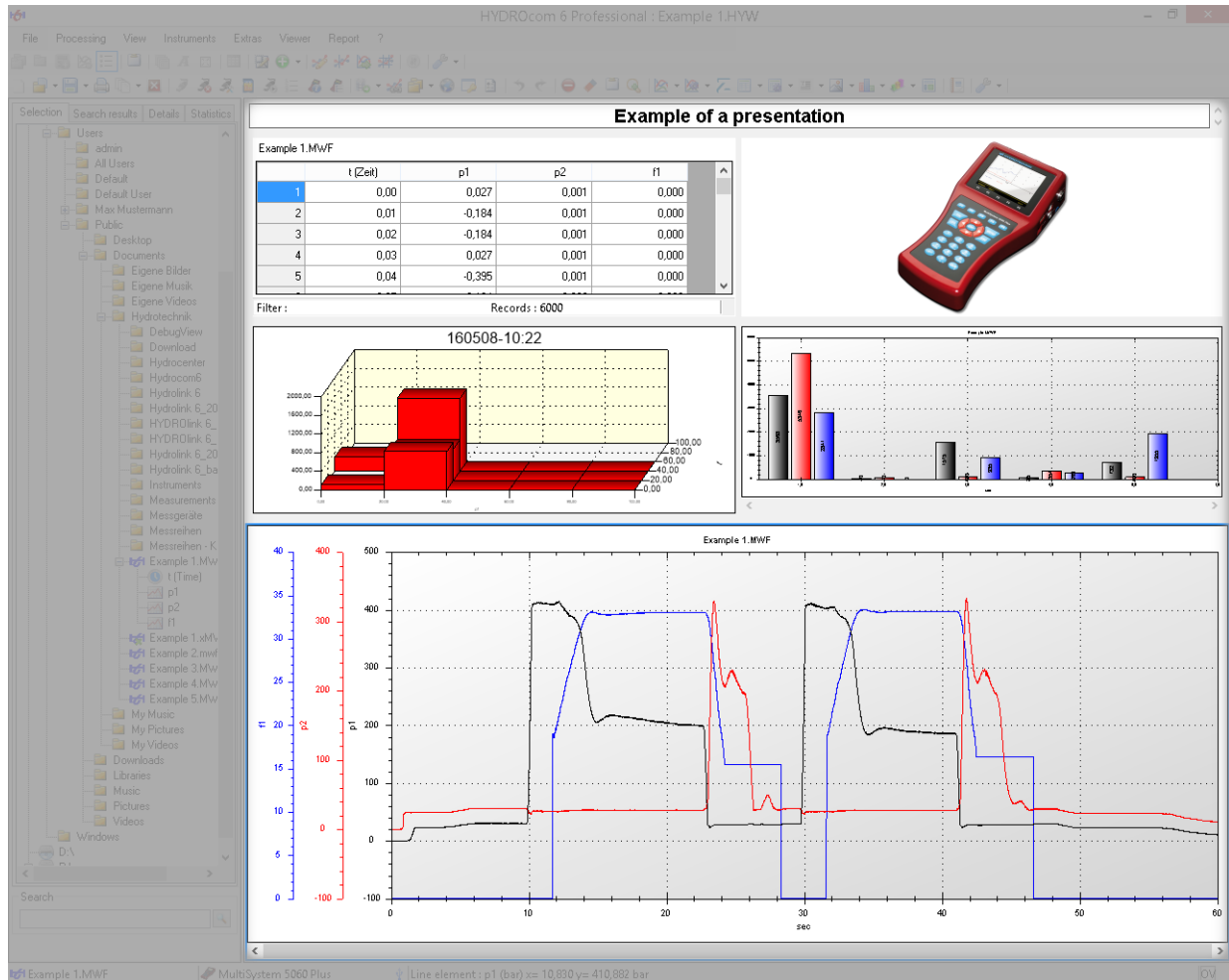
- Scroll wheel
- **Undo** button



About the viewer, layouts, and presentations

PROFESSIONAL **ADVANCED** **BASE**

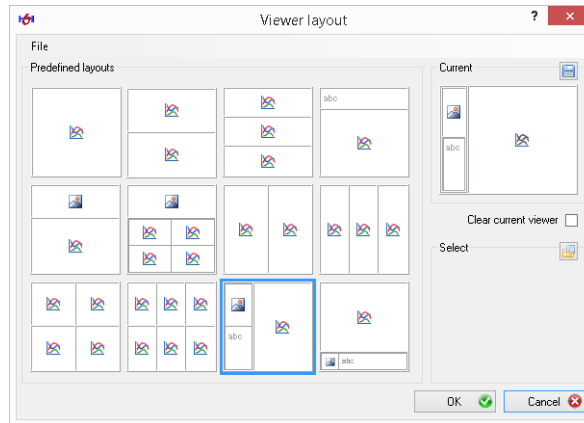
Viewer In the viewer, you combine all elements that you would like to use to display the measurement results. For this, you can create several layout areas and arrange them as you wish.



⇒ **Viewer** on page 151

⇒ **Viewer menu** on page 138

Layouts There are predefined layouts available for the arrangement of the areas in the viewer. The individual areas of the layout are called layout areas. The layout areas can include line diagrams, tables, histograms, text, and images.



⇒ **Viewer layout dialog** on page 300

Presentations The entire content that you generate and arrange in the viewer is called a presentation.

In order to create a presentation, you can do the following:

- Add layout areas to the viewer.
- Arrange layout areas using the predefined layout.
- Create your own layouts.
- Edit the contents of the layout areas.

You can save presentations as HYW files and open them again later

⇒ **Creating presentations** on page 34

⇒ **Standardising presentations** on page 85

Operation

This chapter describes the operation of the software.

EN

Instruments

PROFESSIONAL | ADVANCED | BASE

This section teaches you how to connect instruments to the computer and read the measurement data into the software. You can operate instruments in online mode and save the measurement data directly on the computer.

Pay attention to the list of the supported devices.

⇒ **Supported devices** on page 6

Connecting an instrument

PROFESSIONAL | ADVANCED | BASE

You have configured the connection to the instrument before you connect the instrument.

⇒ **Configuring the connection to the measurement device** on page 19

→ How to connect an instrument

- 1 Make sure that the appropriate interface and settings are set for your instrument.

⇒ **Connection properties dialog** on page 234

- 2 Connect the instrument to your computer.

- 3 Switch the instrument on.

- 4 Select *Menu > Instruments > Connect (Interface)*.

It may be that you have configured the automatic connection via USB. In this case, omit step 4 for a USB instrument.

The connected instrument is displayed on the status bar.



You can connect several instruments to the software simultaneously, but only operate one at a time.

On the **Device list** dialog, you select the desired instrument.

⇒ **Device list dialog** on page 282

Reading out instrument memory

PROFESSIONAL | ADVANCED | BASE

The measurement series recorded are in the instrument memory. So that you can use measurement series in your presentation, you must save these on the computer.

There are two ways to read instrument memory out:

- **Reading out the memory of regular instruments**
- **Reading out Patrick particle counter instrument memory**

Reading out the memory of regular instruments

PROFESSIONAL | ADVANCED | BASE

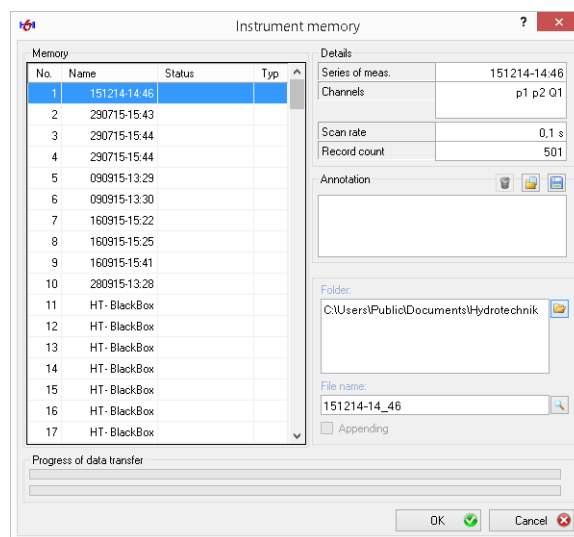
You have connected the instrument.

⇒ **Connecting an instrument** on page 27

➔ How to read out the memory of regular instruments

- 1 Select *Menu > Instruments > Read out instrument memory*.

The Instrument memory dialog opens.



- 2 Select the desired data set in the **Memory** area.

It is possible to mark several items at once.

- 3 Optionally you can also do the following:

- Enter a note
- Change the target directory
- Change the file name or select an existing file
- Attach the data set to an existing file

⇒ **Instrument memory dialog** on page 240

- 4 Confirm the dialog with **OK**.

The **Device Memory** dialog closes.

The progress of the reading out is indicated on the status bar.

■

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Error while reading out

If measurement series cannot be transmitted or if there is an error during the transmission, status information is displayed to the right on the list next to the measurement series. If an error occurs, the window is displayed maximised and an error code is displayed in the status column.

If you place the mouse pointer over the error code, a window with an English description of the error occurs. If a measurement series was transmitted completely and without errors, a tick mark is displayed.

EN

Reading out Patrick particle counter instrument memory

PROFESSIONAL **ADVANCED** **BASE**

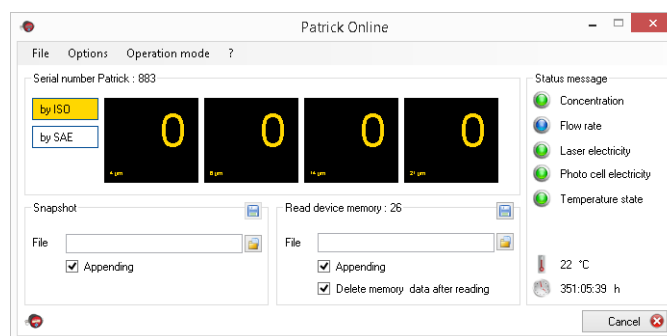
You have connected the Patrick particle counter.

⇒ **Connecting an instrument** on page 27

→ **How to read out the instrument memory of the Patrick particle counter**

- 1 Select *Menu > Instruments > Online Mode*.

The **Patrick Online** window opens.



- 2 In the Device Memory area, you can optionally do the following:

- Select the target directory or an existing directory
- Attach the data set to an existing file
- Delete the data from the particle counter after reading it out

⇒ **Read device memory area** on page 276



- 3 Click the Save button

The instrument memory is read out.



Operating the instrument in online mode

PROFESSIONAL | ADVANCED | BASE

If the software is connected to an instrument, you can display measurement values online in the software. You can record and process the measurement series further in the software.

EN

About multi-channels in online mode

PROFESSIONAL | ADVANCED | BASE

In online mode, you can assign a special display instrument to a multi-channel that includes switch states.

If multi-channel is detected on the instrument, it is automatically assigned the display style **On/Off**, this cannot be changed. A multi-channel cannot be displayed in the line diagram for the online mode.

On the **On/Off Display** dialog, you can use the **Little Endian** check box to change the sequence in which the multi-channels are displayed.

⇒ **On/Off display dialog** on page 262

⇒ **About multi-channels** on page 103

Preparing a measurement series

PROFESSIONAL | ADVANCED | BASE

You have connected the instrument.

⇒ **Connecting an instrument** on page 27

➔ How to prepare a measurement series

- 1 Select **Menu > Instruments > Online Mode**.

If the software is connected to an instrument (e.g. MultiSystem or Multi-Handy), the **Configure Online Mode** dialog appears. If the software is connected to the Patrick particle counter, the **Patrick Online** window appears.

- 2 Configure the online mode.

⇒ **Online window** on page 265

⇒ **Patrick Online window** on page 271

- 3 Select **OK**.

The **Online** window appears.

⇒ **Online window** on page 265



Recording a measurement series

PROFESSIONAL | ADVANCED | BASE

You have connected the instrument and prepared the measurement series.

⇒ **Configuring the connection to the measurement device** on page 19

⇒ **Preparing a measurement series** on page 30

→ How to record a measurement series



- 1 Click the **Start** button.

Measurement begins. If you have configured a line diagram or a display instrument for the Online window, the line diagram and display instrument display the course of the measurement and the current measurement value.



- 2 To end the measurement series, click the **Stop** button.



- 3 If you want to save the measurement series, click the **Save** button.

⇒ **Online window** on page 265



About endless measurements

PROFESSIONAL | ADVANCED | BASE

If the **End online mode manually** check box is activated, the measurement series will run endlessly.

⇒ **End online mode manually** on page 245

During online mode, all measurement data is written in the background. It is saved in a file with the file name *ONLYyyyymmdd_hhmmss.mwf* in the default directory. This prevents the collected measurement data from being lost if the computer or the instrument fails before the end of the measurement.

If the **Select file first** check box is activated, you can specify the file name and storage location at the beginning of the online mode.

⇒ **Select file first** on page 245

An endless measurement affects the display of the line diagram in online mode since only a limited number of data are available for the graphic display. With a sampling rate of 1 ms, only the last 30 s, for sampling rates > 10 ms only the last 300 s are displayed.

List of possible sampling rates in online mode

PROFESSIONAL | ADVANCED | BASE

The following table shows minimum sampling rates per device that are possible in online mode.

Instrument	Max. no. online channels	Interface	Min. sam-pling rate	Limitations
MultiHandy 2020	2	USB to RS 232	10 ms	10 ms with one channel 20 ms with two channels
MultiHandy 2025	3	USB	10 ms	–
MultiHandy 3010	3	RS 232	10 ms	–
MultiHandy 3020/3025	3	USB	10 ms	–
MultiHandy 3050	4	RS 232	10 ms	10 ms with one channel 20 ms with two to four channels
		USB	10 ms	10 ms with one or two channels 20 ms with three or four channels
MultiBox 306x	4	USB	1 ms	–
MultiSystem 5000 / V2	6	RS 232 / USB	50 ms	–
MultiSystem 5050	6	RS 232	10 ms	10 ms with one channel 20 ms with two to four channels 40 ms with five or six channels
		USB	10 ms	10 ms with one or two channels 20 ms with three to six channels
MultiSystem 5060	24 (if 14 CAN chan-nels were defined)	TCP/IP	100 ms	–
MultiSystem 5060 Plus		RS 232	10 ms	10 ms with one channel 20 ms with two to four channels 40 ms with five or six channels
		USB	1 ms	All channels, limited to max. 2 million val-ues
			1 ms	Endless number of values: 1 ms with one to three channels 2 ms with four to six channels 3 ms with seven to nine channels

Table: Possible sampling rates

Instrument	Max. no. online channels	Interface	Min. sampling rate	Limitations
MultiSystem 8050	40 (if 14 CAN channels were defined)	TCP/IP	100 ms	–
		RS 232	10 ms	10 ms with one channel 20 ms with two to four channels 40 ms with five or six channels
		USB	1 ms	All channels, limited to max. 6 million values
			1 ms	Endless number of values: 1 ms with one to three channels 2 ms with four to six channels 3 ms with seven to nine channels

Table: Possible sampling rates

About the Patrick particle counter in online mode

PROFESSIONAL

You have connected the particle counter.

⇒ **Configuring the connection to the measurement device** on page 19

Use the Patrick particle counter as described in its operation manual.

⇒ **Patrick operation manual**

The volumetric flow should be as constant as possible and always in the range between 50 ml/min and 400 ml/min. This is the case if the bar chart flow (ml/min) is in the green range. If impermissible flow rates are measured, you must regulate the volumetric flow.

⇒ **Flow control** on page 272

⇒ **Patrick Online window** on page 271

Creating presentations

PROFESSIONAL | ADVANCED | BASE

Create and edit your presentation in the viewer. To do this, create your own layouts by adding and arranging layout areas or use predefined layouts.

⇒ **About the viewer, layouts, and presentations** on page 24

In order to create a presentation in order to arrange layout areas and output the presentation, you have the following possibilities:

- **Adding and editing layout areas**
- **Layout area – inserting data**
- **Layout area – editing data**
- **Handling presentations**

The software offers you the following elements for presentations:

- **Line diagram**
- **Histogram**
- **Classification**
- **Table**
- **Picture**

Adding and editing layout areas

PROFESSIONAL | ADVANCED | BASE

The layout of the presentation is constructed flexibly from the layout areas and can be changed at any time.

In order to add layout areas, you have the following possibilities:

- **Selecting predefined layout**
- **Adding layout areas**
- **Exchanging the places of layout areas**
- **Layout areas – changing type**
- **Layout areas – changing the size**
- **Deleting layout areas or content**

Selecting predefined layout

PROFESSIONAL | ADVANCED

On the **Viewer Layout** dialog, you can select a predefined layout.

⇒ **Viewer layout dialog** on page 300

You can use the predefined layout as it is. Or you can adapt this layout individually.

Adding layout areas

PROFESSIONAL | ADVANCED

New layout areas are always inserted relative to an existing layout area; that is, to the right, left, above, or below. Here the layout area next to which the new layout area is inserted is made smaller.

There are no blank layout areas. You always insert layout areas with a concrete content type, such as line diagram or table. The content itself - that is, the data in question - is added only later on.

You can insert a new layout area by selecting the drop-down list next to the appropriate button:



- **Line diagram**



- **Table**



- **Text**



- **Picture**



- **Histogram**



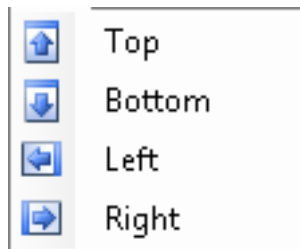
- **Classification**

→ How to add a layout area

- 1 Select the layout area next to which you would like to insert a new layout area.
- 2 Select the drop-down list with the desired button.



If you do not select the drop-down list but rather the button itself, the content of the marked layout area is deleted and the content type is changed to the content type of the selected button.



- 3 Select the desired position of the new layout area relative to the marked layout area from the drop-down list.

The layout area is added.



Depending on the software edition, you can create different numbers of layout areas:

BASE	1 layout area
ADVANCED	6 layout areas
BASE	24 layout areas

Exchanging the places of layout areas

PROFESSIONAL **ADVANCED**

You have selected a predefined layout or added layout areas.

⇒ **Selecting predefined layout** on page 35

⇒ **Adding layout areas** on page 35

→ How to exchange the places of layout areas

- 1 Mark a layout area.
- 2 Press and hold the **Ctrl** key.
- 3 Drag the layout area to the desired position using drag & drop.

The places of the two layout areas are exchanged.

Drag & drop and the exchanging of places are not depicted with animation.



Layout areas – changing type

PROFESSIONAL | **ADVANCED** | **BASE**

There are no blank layout areas. A layout area always has content of a particular type, such as line diagram, table, or text.

You can change the content type of a layout area by selecting the desired content type on the toolbar:



- **Line diagram**



- **Table**



- **Text**



- **Picture**



- **Histogram**



- **Classification**

To do this, click the button in question and not the drop-down list.

Layout areas – changing the size

PROFESSIONAL | **ADVANCED**

You can change the size of a layout area simply by dragging it.



To do this, mark the desired layout area and move the mouse over the marked edge of the layout area. The mouse cursor then appears as depicted here.

Layout areas whose edges lie on a line with the affected edge of the marked layout area are also changed.

Deleting layout areas or content

PROFESSIONAL | **ADVANCED** | **BASE**

You can delete entire layout areas or just the content of a layout area. If you delete only the content of a layout area, the content type of the layout area is retained.



The **Delete Viewer Element** button deletes the entire layout area (not for **BASE**).



The **Delete Content** button only deletes the content of a layout area.

EN

Layout area – inserting data

Depending on the type of the layout area, you insert measurement data, pictures, or texts:

- **Creating a line diagram**
- **Creating a histogram**
- **Creating a classification**
- **Creating a table**
- **Inserting a picture**
- **Inserting text**

Creating a line diagram

PROFESSIONAL | ADVANCED | BASE

→ How to create a line diagram

- 1 Create a layout area of the type line diagram.

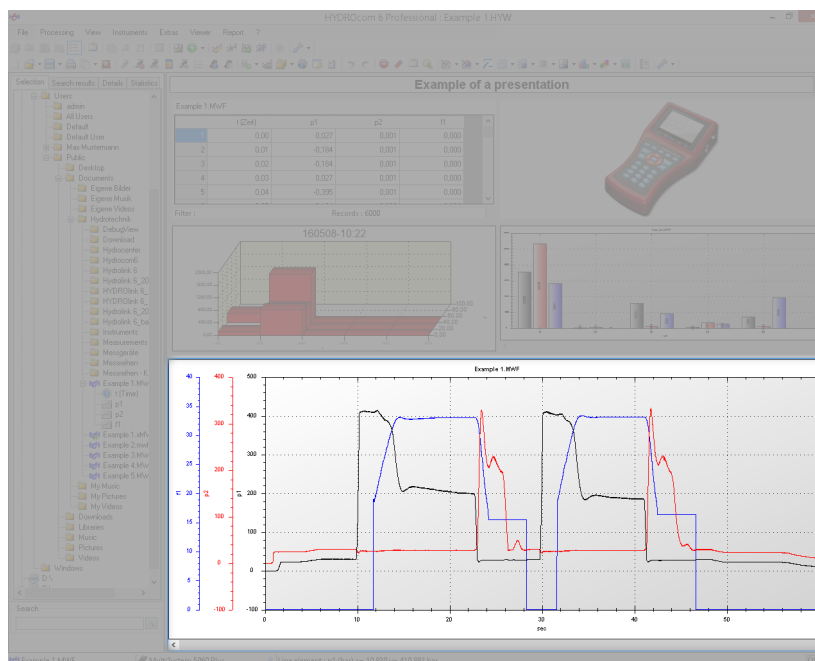
⇒ **Adding layout areas** on page 35

- 2 Use drag & drop to drag measurement data from the Explorer into the layout area.

You can display a complete measurement file or individual channels as a line diagram.

- 3 Edit the line diagram.

⇒ **Line diagram** on page 51



The line diagram is calculated with the default configuration file.

If you drag additional data from the Explorer into the line diagram, the data will also be displayed or the current data from the line diagram will be deleted. This behaviour depends on the function **Overwrite**.

⇒ **Overwrite** on page 137

Function $f_{(x)}$ If you create a line diagram, the time (t) is used for the X-axis. If you want to use a channel for the X-axis, create a line diagram as function $f_{(x)}$.

You can insert channels from different measurement series as curves if the following prerequisites are fulfilled:

- All measurement series include the channel to which the X-axis refers.
- The overwrite function is not active.

⇒ **Overwrite** on page 137

➔ **How to create a line diagram of the type $f_{(x)}$**

- 1 Create a layout area of the type line diagram.

⇒ **Adding layout areas** on page 35

- 2 Use drag & drop to drag the first channel of a measurement series from the Explorer into the layout area.

- 3 Use drag & drop to drag additional channels to which the X-axis should refer onto the X-axis of the line diagram.

- 4 Use drag & drop to drag additional channels from the Explorer into the layout area.

- 5 Edit the line diagram.

⇒ **Line diagram** on page 51

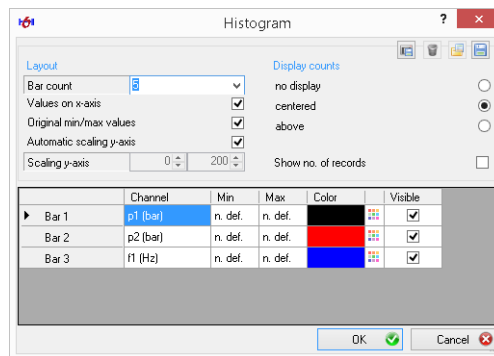


Creating a histogram

PROFESSIONAL | ADVANCED

→ How to create a histogram

- 1 Create a layout area of the type histogram.
⇒ **Adding layout areas** on page 35
- 2 Use drag & drop to drag a measurement value file from the Explorer into the layout area.
- 3 If no default properties are specified, the **Histogram** dialog opens.



⇒ **Histogram (bars) dialog** on page 196

- If necessary, change the settings.
- Click **OK** to create the histogram.

- 4 Edit the histogram.
⇒ **Histogram** on page 68

■

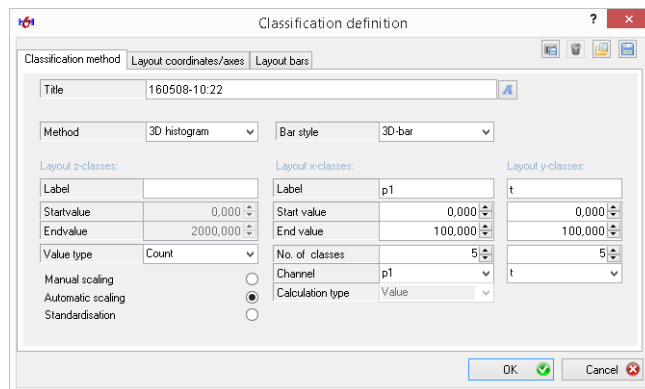
EN

Creating a classification

PROFESSIONAL

→ How to create a classification

- 1 Create a layout area of the type classification.
⇒ **Adding layout areas** on page 35
- 2 Use drag & drop to drag a channel of a measurement file from the Explorer to the layout area.
- 3 If no default properties are specified, the **Classification** dialog opens.



⇒ **Classification definition dialog** on page 206

- If necessary, change the settings.
- Click **OK** to create the histogram.

- 4 Edit the classification.
⇒ **Classification** on page 71

■

Creating a table

PROFESSIONAL | ADVANCED

You have the following possibilities:

- **Creating a table with measurement values**
- **Creating a compact table with measurement values**
- **Creating a table with statistical data**
- **Creating a table with spot values**

⇒ **Table** on page 73

EN

Creating a table with measurement values

PROFESSIONAL | ADVANCED

→ How to create a table with measurement values

- 1 Create a layout area of the type table.
⇒ **Adding layout areas** on page 35
- 2 Use drag & drop to drag a measurement value file from the Explorer into the layout area.
- 3 Use drag & drop to drag measurement data from the Explorer into the layout area.

You can display a complete measurement value file or individual channels as a table.

- 4 Edit the table.
⇒ **Table** on page 73



Example 1 MvxF

	t [s]	p1	p2	p3
1	0.00	0.027	0.001	0.000
2	0.01	-0.184	0.001	0.000
3	0.02	-0.184	0.001	0.000
4	0.03	0.027	0.001	0.000
5	0.04	-0.395	0.001	0.000
6	0.05	-0.184	-0.209	0.000
7	0.06	-0.184	0.001	0.000
8	0.07	-0.395	0.001	0.000
9	0.08	-0.184	-0.209	0.000
10	0.09	0.027	0.001	0.000
11	0.10	-0.184	0.001	0.000
12	0.11	-0.184	0.001	0.000
13	0.12	-0.184	0.001	0.000
14	0.13	0.027	0.001	0.000
15	0.14	-0.184	-0.209	0.000
16	0.15	0.027	0.001	0.000
17	0.16	-0.395	0.001	0.000

Filter: Data size: 6000

If you drag additional data from the Explorer into the table, the data is also displayed or the current data is deleted from the table. This behaviour depends on the function **Overwrite**.

Creating a compact table with measurement values

PROFESSIONAL | ADVANCED

→ How to create a compact table with measurement values

- 1 Create a table with measurement values.

⇒ **Creating a table with measurement values** on page 43

- 2 Select *Menu > Edit > Compact Table*.

- 3 Edit the table.

⇒ **Table** on page 73



Example 1 MtuC

	t Zeit Sekunde	p1 bar	p2 bar	f1 Hz
500	5.99	29.976	31.384	0.000
1200	11.99	411.304	25.254	19.397
1800	17.99	210.516	27.358	32.982
2400	23.99	27.867	221.382	19.071
3000	29.99	253.753	21.887	0.000
3600	35.99	194.276	26.937	33.086
4200	41.99	27.856	232.930	24.125
4800	47.99	26.711	26.831	0.000
5400	53.99	23.438	23.360	0.000
6000	59.99	10.572	10.733	0.000

Filter: KompaktTabelle Datensätze: 10

You can assign a configuration file to the compact table or configure it manually. Select *Menu > Edit > Filter Options*. The Table configuration dialog opens.

Creating a table with statistical data

PROFESSIONAL | ADVANCED

→ How to create a table with statistical data

- 1 Mark the desired measurement value file in the Explorer.
- 2 Create a layout area of the type table.
⇒ **Adding layout areas** on page 35
- 3 Select *Menu > Edit > Statistics*.



	s1	p1	p2	p3	M1	n1
Minimum	83.362	3.218	0.000	1.844	-21.453	0.000
Maximum	260.989	173.673	172.793	175.140	47.374	0.000
Arithmetisches Mittel	193.764	103.118	56.405	59.188	3.801	0.000
Quadratisches Mittel	170.494	114.084	72.475	76.115	8.051	0.000
Standardabweichung	55.528	48.803	45.510	47.957	7.097	0.000

Filter: Example 1.MWF Datensätze: 5

Creating a table with spot values

PROFESSIONAL | ADVANCED

→ How to create a table with spot values

- 1 Create a presentation with at least one line diagram.
⇒ **Creating a line diagram** on page 39
- 2 Insert at least one spot line, a difference spot, or difference measurement lines.
- 3 Create a layout area of the type table.
⇒ **Adding layout areas** on page 35
- 4 Select *Menu > Edit > Spot*.



Spotabelle					
Example 1 ffcv	p	p1	p2	n	
Spot 1	15.000	205,876	27.779	32.903	
Difference 2	10.000	100.000	83.323	6.667	
Spot 3	50.000	23.227	23.570	0.000	
Example 2 mml	da	dp1	dp2	dp3	dp4
Differenzspot 1	100.0	2,895	-3,526	0,310	0,214
Spot 2	1500.000	128.146	62.336	25.645	5.477

Changes to the spot values are displayed directly in the table. The spot values are displayed in the color of the spot line and the column headers in the colors of the channels.

Inserting a picture

PROFESSIONAL | ADVANCED

→ How to insert a picture

- 1 Create a layout area of the type picture.

⇒ **Adding layout areas** on page 35

- 2 Mark the layout area.

- 3 Select *Menu > Edit > Format > Selection*.

The Windows **Open** dialog appears.

- 4 Select a picture file.

The software supports the picture formats *.bmp, *.jpg, *.gif, *.jpeg, *.png and *.wmf.



⇒ **Picture** on page 76

Inserting text

PROFESSIONAL | ADVANCED

You have the following possibilities:

- **Inserting text directly**
- **Saving text as building block**
- **Inserting a text building block**
- **Inserting text from the Explorer**
- **Formatting text**

Inserting text directly

PROFESSIONAL | ADVANCED

→ How to insert text directly

- 1 Create a layout area of the type text.

⇒ **Adding layout areas** on page 35

- 2 Enter any text.



Saving text as building block

PROFESSIONAL | ADVANCED

You have created a layout area of the type text.

⇒ **Adding layout areas** on page 35

You have entered and possibly edited text in one of the following ways:

- **Inserting text directly** on page 47
- **Inserting a text building block** on page 48
- **Inserting text from the Explorer** on page 49

➔ How to save text as building block

- 1 Mark the layout area of the type text.
- 2 Select *Menu > Edit > Format > New*.
The Windows **Save as** dialog appears.
- 3 Save the building block as HYD file.



Inserting a text building block

PROFESSIONAL | ADVANCED

You have created a layout area of the type text.

⇒ **Adding layout areas** on page 35

You have previously saved the text as building block.

⇒ **Saving text as building block** on page 48

➔ How to insert a text building block

- 1 Select *Menu > Edit > Format > Selection*.
The Windows **Open** dialog appears.
- 2 Select a HYD file.



Inserting text from the Explorer

PROFESSIONAL | ADVANCED

You can insert text from the **Details** and **Statistics** tab of the Explorer easily into a text layout area.

⇒ **Details tab** on page 149

⇒ **Statistics tab** on page 150

You have created a layout area of the type text.

⇒ **Adding layout areas** on page 35

You have the following possibilities:

- **How to insert the entire register content from the Explorer**
- **How to insert individual texts from the Explorer**

➔ How to insert the entire register content from the Explorer

- 1 Mark the measurement value file in the Explorer.
- 2 Change to the **Details** or **Statistics** tab.
- 3 Mark the layout area of the type text.
- 4 Select **Menu > Edit > Insert > Details**.

Or select **Menu > Edit > Insert > Statistics**.



➔ How to insert individual texts from the Explorer

- 1 Select one or several lines on the **Details** or **Statistics** tab in the Explorer.
- 2 Use drag & drop to drag the marked lines into the layout area of the type text.



Formatting text

PROFESSIONAL | ADVANCED

You have inserted text.

- ⇒ **Inserting text directly**
- ⇒ **Inserting a text building block**
- ⇒ **Inserting text from the Explorer**

→ How to format text

- 1 Mark the layout area of the type text.
- 2 Select *Menu > Edit > Font*.
The Windows **Font** dialog appears.
- 3 Select the desired formatting.
- 4 In order to specify the alignment of the text, select one of the following menu options:
 - *Menu > Edit > Align Left*
 - *Menu > Edit > Align Middle*
 - *Menu > Edit > Align Right*



Layout area – editing data

PROFESSIONAL | ADVANCED | BASE

After you have added the layout areas and inserted data, you can edit the display of the data.

You have the following possibilities:

- ⇒ **Line diagram** on page 51
- ⇒ **Histogram** on page 68
- ⇒ **Classification** on page 71
- ⇒ **Table** on page 73
- ⇒ **Picture** on page 76
- ⇒ **Inserting and editing elements** on page 77

Line diagram

PROFESSIONAL | ADVANCED | BASE

Line diagrams display the measurement data graphically. The measurement data can refer to the time (function $f(t)$) or to any other variable of the measurement data (function $f(x)$).

Insert line diagrams into layout areas.

⇒ **Creating a line diagram** on page 39

You can edit line diagrams or use them for further analysis.

⇒ **Formatting a line diagram** on page 52

⇒ **Editing a line diagram** on page 55

⇒ **Analyzing a line diagram** on page 57

⇒ **Inserting and editing elements** on page 77

Limitations Depending on the software edition, you can display different numbers of channels on a line diagram:

BASE	12 channels
ADVANCED	12 channels
PROFESSIONAL	24 channels

Mouse functions You have the following possibilities with the mouse on the line diagram:

- **Right-click** opens the context menu. The context menu includes all functions of the **Edit** menu.
⇒ **Processing menu for line diagram** on page 113
- The **Status bar** displays information about the element to which the mouse is pointing. For line elements, the status bar displays the current x and y-values.
- **Double-click** on an element opens the appropriate editing dialog.
- While holding down the **middle mouse button** (scroll wheel) you move the section of the line diagram.
- With the **Scroll wheel** to zoom the line diagram.

Save, print, copy You can save, print, and copy the line diagram. Use the context menu or the **Edit** menu.

You can save line diagrams as graphics, PDFs, or measurement value files (*.MWF or *.xMWF).

⇒ **Processing menu for line diagram** on page 113

Formatting a line diagram

PROFESSIONAL | ADVANCED | BASE

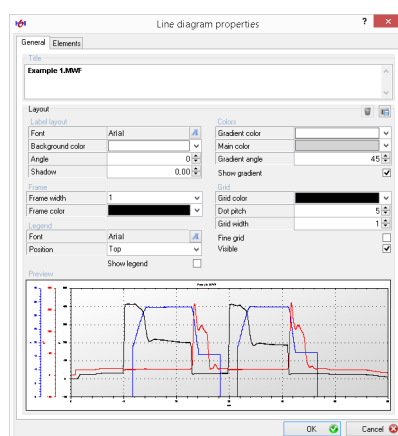
You can change the display of the line diagram:

- ⇒ How to format the line diagram
- ⇒ How to scale the line diagram
- ⇒ How to add elements to a line diagram

→ How to format the line diagram

- 1 Double-click in an empty area of the line diagram.

The **Line diagram properties** dialog opens.

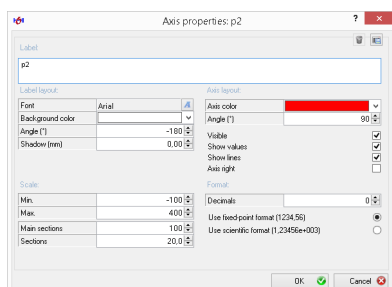


⇒ **Line diagram properties dialog** on page 161

- 2 Edit the general display of the line diagram on the **General** tab:
 - **Title** area
 - **Label** area
 - **Frame** area
 - **Legend** area
 - **Color gradient** area
 - **Grid** area
- 3 Click **OK** to apply your change.

- 4 Double-click an axis to edit its display.

The **Axis properties** dialog opens.



⇒ **Axis properties dialog** on page 169

- 5 Edit the display of the axes:

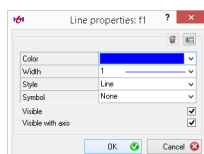
- **Label** area
- **Labels** area
- **Scale** area
- **Axis layout** area
- **Format** area

- 6 Click **OK** to apply your change.

Repeat steps 4 to 6 for all axes.

- 7 Double-click a line to edit its display.

The **Line properties** dialog opens.



⇒ **Line Properties dialog** on page 173

- 8 Edit the display of the line:

- **Color**
- **Width**
- **Style**
- **Symbol**

- 9 Click **OK** to apply your change.

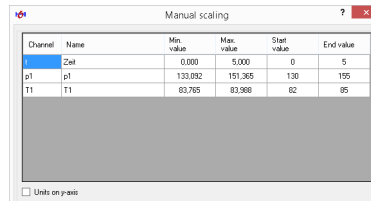
Repeat steps 7 to 9 for all lines.



➔ How to scale the line diagram

- 1 Mark the line diagram and select **Menu > Edit > Scale Manually**.

The **Manual Scaling** dialog opens.



⇒ **Manual scaling dialog** on page 175

- 2 Specify the values for the **Start value** and **End value** for the axes.
- 3 Click **OK** to apply your change.



➔ How to add elements to a line diagram

You can insert different elements into a line diagram:

- ⇒ **Inserting and editing text elements** on page 77
- ⇒ **Inserting and editing picture elements** on page 78
- ⇒ **Inserting and editing arrow elements** on page 79
- ⇒ **Inserting and editing frame elements** on page 80



Editing a line diagram

PROFESSIONAL | ADVANCED | BASE

You can edit the line diagram:

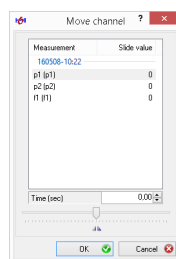
⇒ **How to move curves**

⇒ **How to smooth curves**

→ **How to move curves**

- 1 Mark the line diagram and select *Menu > Edit > Move*.

The **Move Channel** dialog opens.



⇒ **Move channel dialog** on page 191

- 2 Select one or several channels from the list.
- 3 Select the value of the move.
 - Specify a value in the Time field (sec) or change the value with the arrow keys.
 - Use the slider.

Moving the curves is displayed directly on the line diagram.

- 4 Click **OK** to apply your change.

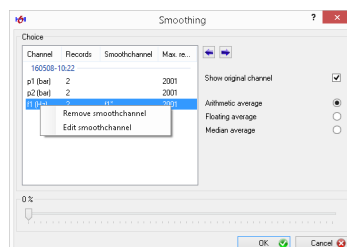


→ How to smooth curves

PROFESSIONAL | ADVANCED

- 1 Mark the line diagram and select **Menu > Edit > Smoothing**.

The **Smoothing** dialog opens.



⇒ **Smoothing dialog** on page 181

- 2 Select one or several channels from the list.
- 3 Select the type of averaging.

⇒ **Arithmetic average** on page 182

⇒ **Floating average** on page 183

⇒ **Median average** on page 183

- 4 Change the number of data sets with the arrow keys or the slider.

The smoothing of the curves is displayed directly in the line diagram.

- 5 Click **OK** to apply your change.



For smoothed channels, an asterisk is added to the channel name (*). Example: p1*

You can delete smoothed channels on the **Line diagram properties** dialog, **Elements** tab.

⇒ **Line diagram properties dialog, Elements tab** on page 167

Analyzing a line diagram

PROFESSIONAL | ADVANCED

Use envelopes, spot lines, and difference measurements to analyze a line diagram.

Envelope

PROFESSIONAL

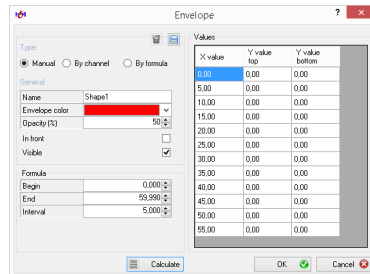
Use envelopes to display a particular variance graphically on the line diagram. You can move envelopes on line diagrams with the mouse.

- ⇒ **How to create an envelope manually**
- ⇒ **How to create an envelope via a channel**
- ⇒ **How to create an envelope with a formula**
- ⇒ **How to edit or delete an envelope**

➔ How to create an envelope manually

- 1 Mark the line diagram and select **Menu > Edit > Envelope > New**.

The **Envelope** dialog opens.



⇒ **Envelope dialog** on page 176

- 2 Select the type **Manual**.
- 3 Edit the general data:
 - **Name**
 - **Color**
 - **Opacity**
 - **In the foreground**
 - **Visible**
- 4 Edit the data in the **Formula** range:
 - **Start**: Start time of the envelope
 - **End**: End time of the envelope
 - **Interval**: Distance of the limitation points
- 5 Click the **Calculate** button.

In the **Values** area, the table is created with the X and Y values of the envelope.

- 6 Click on the table to edit the Y values. Use the **TAB** key to edit the next field.
- 7 Use the context menu to add lines to or remove them from the table.
A new line is calculated from the average value of the adjacent lines.
- 8 If necessary, save the envelope as configuration file.
- 9 Click **OK** to apply the envelope.

Add	Ctrl+Ins
Delete	Ctrl+Del



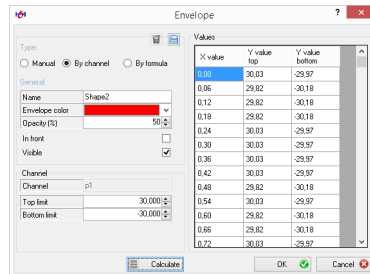
■

EN

➔ How to create an envelope via a channel

- 1 Mark the line diagram and select **Menu > Edit > Envelope > New**.

The **Envelope** dialog opens.



⇒ Envelope dialog on page 176

- 2 Select the type **Channel**.
- 3 Edit the general data:
 - **Name**
 - **Color**
 - **Opacity**
 - **In the foreground**
 - **Visible**
- 4 Edit the data in the **Channel** area:
 - **Channel**: The first channel is used. The value cannot be changed.
 - **Upper Limit**: Distance of the upper limit of the envelope to the values of the channel.
 - **Lower Limit**: Distance of the lower limit of the envelope to the values of the channel.
- 5 Click the **Calculate** button.
In the **Values** area, the table is created with the X and Y values of the envelope.
- 6 If you want to edit the Y values, click in the table. Use the **TAB** key to edit the next field.
- 7 Use the context menu to add lines to or remove them from the table.
A new line is calculated from the average values of the two adjacent lines.
- 8 If necessary, save the envelope as configuration file.
- 9 Click **OK** to apply the envelope.

Add	Ctrl+Ins
Delete	Ctrl+Del

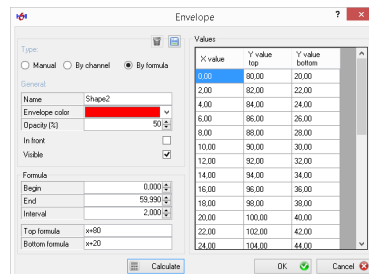


■

➔ How to create an envelope with a formula

- 1 Mark the line diagram and select **Menu > Edit > Envelope > New**.

The **Envelope** dialog opens.



⇒ **Envelope dialog** on page 176

- 2 Select the type **Formula**.
- 3 Edit the general data:
 - **Name**
 - **Color**
 - **Opacity**
 - **In the foreground**
 - **Visible**
- 4 Edit the data in the **Formula** range:
 - **Start**: Start time of the envelope
 - **End**: End time of the envelope
 - **Interval**: Distance of the limitation points
 - **Upper Limit**: Formula for the upper limitation of the envelope. As variable, only **x** (x as variable for the X-axis) is permissible.
 - **Lower Limit**: Formula for the lower limitation of the envelope. As variable, only **x** (x as variable for the X-axis) is permissible.
- 5 Click the **Calculate** button.
In the **Values** area, the table is created with the X and Y values of the envelope.
- 6 If you want to edit the Y values, click in the table. Use the **TAB** key to edit the next field.
- 7 Use the context menu to add lines to or remove them from the table.
A new line is calculated from the average values of the two adjacent lines.
- 8 If necessary, save the envelope as configuration file.
- 9 Click **OK** to apply the envelope.

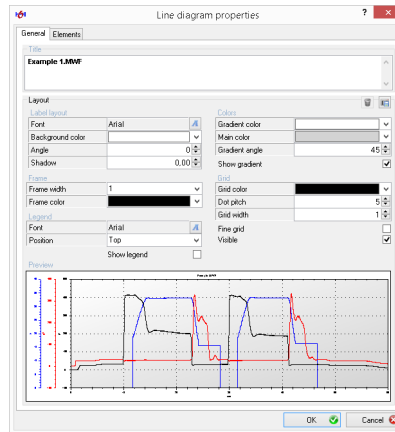
Add	Ctrl+Ins
Delete	Ctrl+Del



→ How to edit or delete an envelope

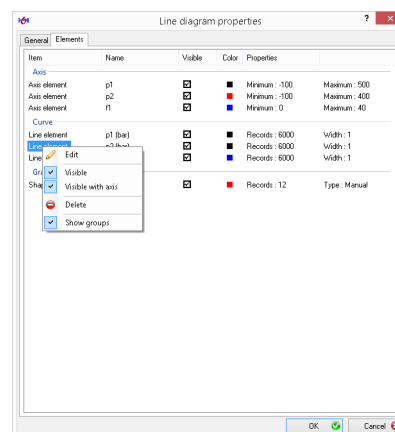
- 1 Double-click in an empty area of the line diagram.

The **Line Diagram Properties** dialog opens.



⇒ **Line diagram properties dialog** on page 161

- 2 Select the **Elements** tab.

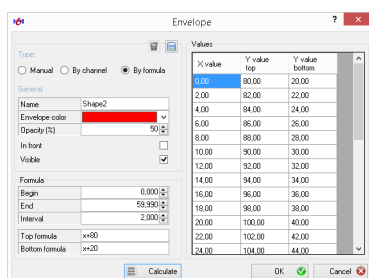


⇒ **Elements tab** on page 167

- 3 Select the desired envelope and open the context menu.
- 4 If you want to delete the envelope, select **Delete**.

- 5 If you want to edit the envelope, select **Edit**.

The **Envelope** dialog opens.



⇒ **Envelope dialog** on page 176

- 6 Edit the properties of the envelope.
7 Click **OK** to apply your change.



Spot line

PROFESSIONAL ADVANCED

Use a spot line to mark a measurement point and display the associated measurement values.

You can move the spot line and value window with the mouse.

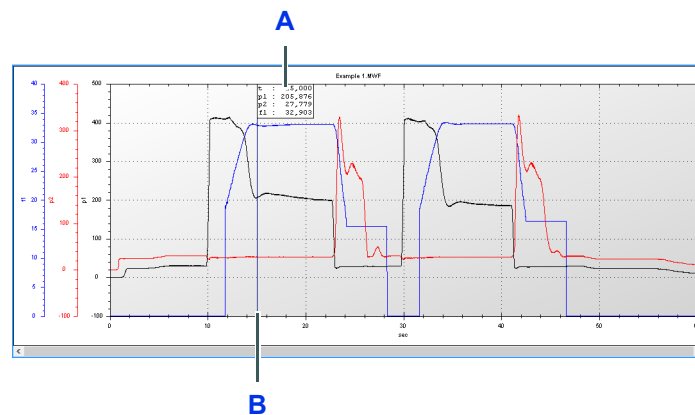
You can insert several spot lines into a line diagram. You can display the spot values in a table.

⇒ **How to create a table with spot values** on page 46

→ How to create a spot line

- 1 Mark the line diagram and select **Menu > Edit > Spot**.

A spot line with value window is inserted into the line diagram.

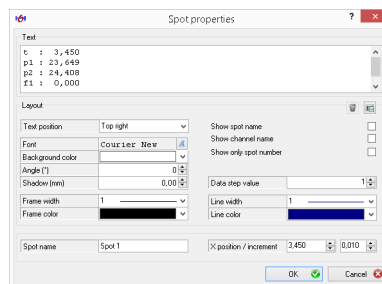


A Value window

B Spot line

- 2 Double-click on the spot line or value window in order to edit the spot line.

The **Spot Properties** dialog opens.



⇒ **Spot properties dialog** on page 185

- 3 Edit the properties.

All changes are displayed directly in the line diagram.

- 4 Click **OK** to apply your change.



Difference spot

PROFESSIONAL

A difference spot consists of two spot lines and a value window. The value window displays the Delta values from the two spot lines.

You can move the spot lines and the value window with the mouse.

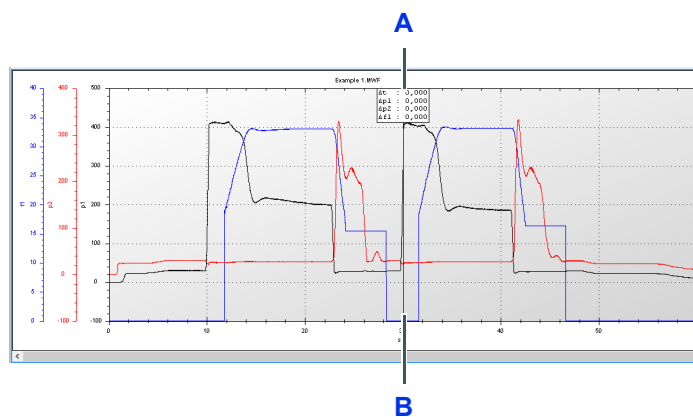
You can insert several difference spots into a line diagram. You can display the spot values in a table.

⇒ **How to create a table with spot values** on page 46

→ How to create a difference spot

- 1 Mark the line diagram and select **Menu > Edit > Difference Spot**.

A difference spot with value window is inserted into the line diagram. Both spot lines are still on the same measurement point and are therefore one atop the other.

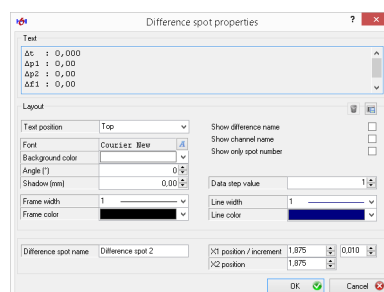


A Value window

B Spot lines

- 2 Double-click on a spot line or the value window in order to edit the difference spot.

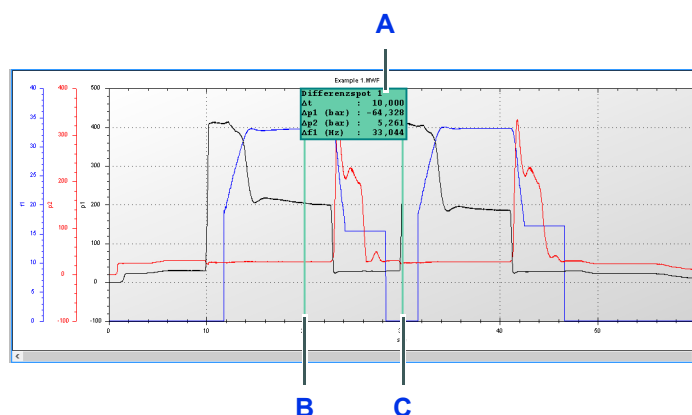
The **Difference Spot Properties** dialog opens.



⇒ **Difference spot properties dialog** on page 188

3 Edit the properties.

All changes are displayed directly in the line diagram.



A Value window

B Spot line 1

C Spot line 2

4 Click **OK** to apply your change.



Difference measurement

PROFESSIONAL

For the analysis of the data, you can display a horizontal and vertical measurement line pair. From the measurement line pairs, the difference between two curve positions is displayed for each channel in value windows.

You can move the difference measurement lines and the value window with the mouse.

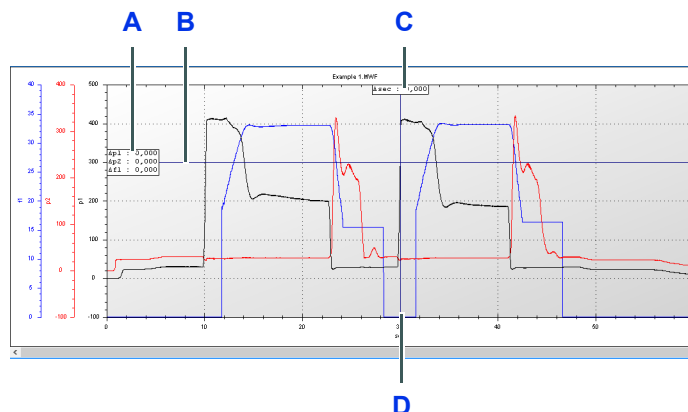
You can insert several difference measurements into a line diagram. The spot values of the difference measurement can be displayed in a table.

⇒ **How to create a table with spot values** on page 46

→ How to create a difference measurement

- 1 Mark the line diagram and select **Menu > Edit > Difference Measurement**.

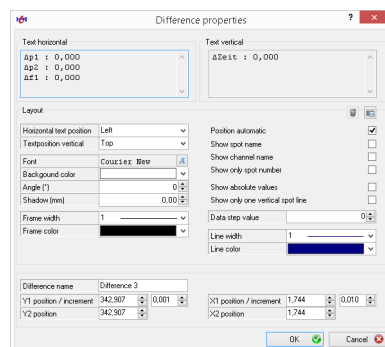
Measurement line pairs and value windows are inserted into the line diagram. The spot lines of the measurement line pairs are positioned one over the other.



- A** Value window of the horizontal measurement line pair
- B** Horizontal measurement line pair
- C** Value window of the vertical measurement line pair
- D** Vertical measurement line pair

- 2 Double-click on a measurement line pair or a value window in order to edit the difference measurement.

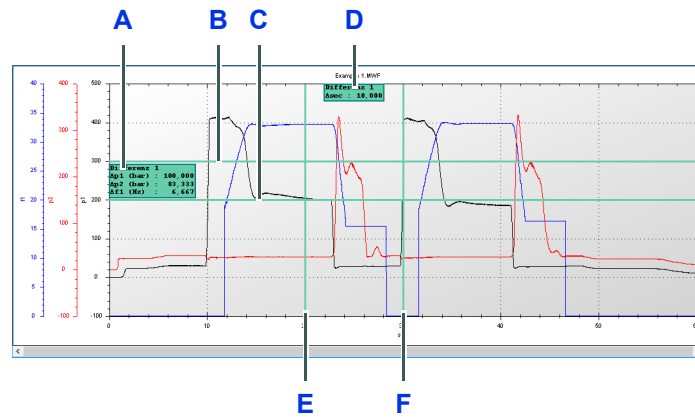
The **Difference Properties** dialog opens.



⇒ **Difference properties dialog** on page 192

3 Edit the properties.

All changes are displayed directly in the line diagram.



- | | |
|---|---|
| A Value window of the horizontal measurement line pair | D Value window of the vertical measurement line pair |
| B First horizontal difference measurement line | E First vertical difference measurement line |
| C Second horizontal difference measurement line | F Second vertical difference measurement line |

4 Click **OK** to apply your change.



Histogram

PROFESSIONAL | ADVANCED

Histograms display the distribution of measurement values graphically.

Insert histograms into layout areas.

⇒ **Creating a histogram** on page 41

You can edit histograms or use them for further analysis.

⇒ **Inserting and editing elements** on page 77

Limitations Depending on the software edition, you can display different numbers of bar in a histogram:

ADVANCED	4 bars
PROFESSIONAL	8 bars

Mouse functions In histograms, you have the following possibilities with the mouse:

- **Right-click** opens the context menu. The context menu includes all functions of the **Edit** menu.
⇒ **Processing menu for histograms** on page 117
- **Double-click** in the histogram opens the **Histogram** (background and elements) dialog.
⇒ **Histogram dialog (background and elements)** on page 198
- **Double-click** on a bar opens the **Histogram** (bars) dialog.
⇒ **Histogram (bars) dialog** on page 196
- If you hold down the **middle mouse button** (scroll wheel) you move the section of the histogram.
- With the **Scroll wheel** you zoom the histogram.

Save, print, copy You can save, print, and copy histograms. Use the context menu or the **Edit** menu.

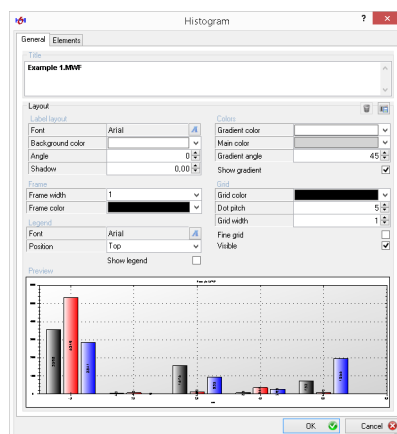
⇒ **Processing menu for histograms** on page 117

Formatting a histogram You can change the display of the histogram.

→ How to format the histogram

- 1 Double-click in an empty area of the histogram.

The **Histogram** (background and elements) dialog opens.



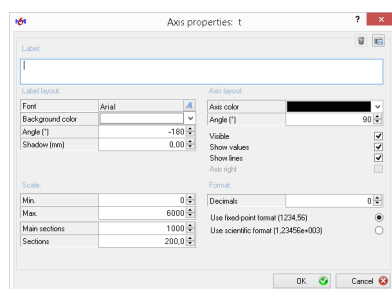
⇒ **Histogram dialog (background and elements)** on page 198

- 2 Edit the general display of the histogram on the **General** tab:

- **Title** area
- **Label** area
- **Frame** area
- **Legend** area
- **Color gradient** area
- **Grid** area

- 3 Click **OK** to apply your change.
- 4 Double-click the Y-axis to edit its display.

The **Axis Properties** dialog opens.



⇒ **Axis properties dialog** on page 169

5 Edit the display of the axes:

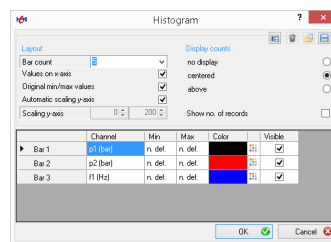
- **Label** area
- **Labels** area
- **Scale** area
- **Axis layout** area
- **Format** area

6 Click **OK** to apply your change.

Repeat steps 4 to 6 for all axes.

7 Double-click a bar in order to edit the display of the bars.

The **Histogram** (bars) dialog opens.



⇒ **Histogram (bars) dialog** on page 196

8 Edit the display of the bars.

9 Click **OK** to apply your change.



Classification

PROFESSIONAL

Classifications are three-dimensional histograms. Classifications form classes and show the frequency of the measurement values per class. However, in contrast to the histogram, the classes are divided into time classes.

Classifications can only display one channel.

Insert classifications into layout areas.

⇒ **Creating a classification** on page 42

You can edit classifications or use them for further analysis.

Types of classifications

You can generate the following types of classifications:

- **3D histogram**
Frequency distribution in an x/y matrix.
- **Average value calculation**
Frequency distribution of the distances from the average value in an x/y matrix.
(spread average value process)
- **Markov**
Display of a series of relative extreme in an x/y matrix.

Mouse functions

In classifications, you have the following possibilities with the mouse:

- **Right-click** opens the context menu. The context menu includes all functions of the **Edit** menu.
⇒ **Processing menu for classifications** on page 119
- **Double-click** in the classification opens the **Classification** dialog.
⇒ **Classification definition dialog** on page 206

Save, print, copy You can save, print, and copy classifications. Use the context menu or the **Edit** menu.

You can save classifications as graphic, PDF or MWC files. MWC files contain only the number of measurement points in particular value ranges. MWC files are significantly smaller than MWF files.

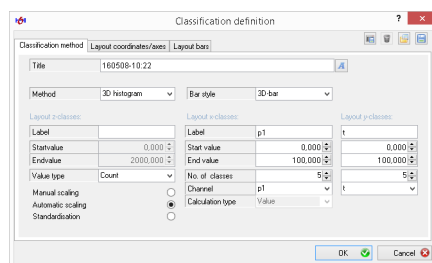
⇒ **Processing menu for classifications** on page 119

Formatting classification You can change the display of the classification.

→ How to format the classification

- 1 Double-click in an empty area of the classification.

The **Classification** dialog opens.



⇒ **Classification definition dialog** on page 206

- 2 Edit the general display of the classification on the following tabs:

- **Classification Settings** tab
- **Layout Coordinate System / Axes** tab
- **Layout Bars** tab

- 3 Click **OK** to apply your change.



Table

PROFESSIONAL | ADVANCED

Tables can display the following data in tabular fashion:

- Measurement values as table or compact table
- Statistical data
- Spot values

Insert tables into layout areas.

⇒ **Creating a table** on page 42

You can edit tables or use them for further analysis.

Types of tables

You can generate the following types of tables:

- **Tables with measurement values**
Displays all measurement values in tabular form.
- **Compact table with measurement values**
Displays measurement values summarised and in compact fashion.
- **Table with statistical data**
Displays the statistical data with a measurement value in tabular form.
- **Table with spot values**
Displays spot values, difference spot values, or the spot values of a difference measurement in tabular form.

Limitations

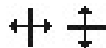
Depending on the software edition, you can display different numbers of channels in a table:

ADVANCED	13 channels (12 channels + time)
PROFESSIONAL	25 channels (24 channels + time)

Mouse functions

In tables, you have the following possibilities with the mouse:

- **Right-click** opens the context menu. The context menu includes all functions of the **Edit** menu.
⇒ **Processing menu for tables** on page 121
- You can change the **Column width** or **Row height** manually by placing the mouse on a column or row border.
- A **double-click** on a column or row border changes the column width or line height automatically.
- Use the **Scroll wheel** to scroll in the table.



Save, print, copy

You can save, print, and copy tables. Use the context menu or the **Edit** menu.

⇒ **Processing menu for tables** on page 121

Filtering a table

PROFESSIONAL | ADVANCED

By filtering, you can edit a table, e.g. display only a particular range or smooth the values.

You have created a table.

⇒ **Creating a table** on page 42

→ How to filter a table

- 1 Mark the layout area of the type table.
- 2 Assign a configuration file to the table.
⇒ **Assigning a configuration file** on page 98.
- 3 Select *Menu > Edit > Filter Options*.
The Windows **Open** dialog appears.
- 4 Select an existing configuration file (*.tbf).
The **Table Definition** dialog is displayed.
⇒ **Table configuration dialog** on page 216
- 5 In order to display only a particular range of the table, do the following:
 - Select the *Filter > Section* check box.
 - Select the **Time Unit**.
 - Select start (**from**) and end (**to**) for the desired range.
- 6 To smooth the values of the table through arithmetic average formation, do the following:
 - Select the *Filter > Smooth* check box.
 - For *Measurement Values for Average Value* set the number of table values that should be used for the average value formation. This reduces the number of values in the table.
- 7 Click **OK** to apply your change.



Table - changing decimal places

PROFESSIONAL | ADVANCED

You have created a table.

⇒ **Creating a table** on page 42

➔ How to change the decimal places for tables

- 1 Mark the layout area of the type table.
- 2 Select the number under [Menu > Edit > Decimal Places](#).
- 3 Change the number of the decimal places.
- 4 Exit the menu.

Decimal places

The number of decimal places displayed is changed for the measurement channels. The decimal places of the time column are specified permanently by sampling rate set and are not changed.



EN

Picture

PROFESSIONAL | ADVANCED

Insert pictures into layout areas.

⇒ **Inserting a picture** on page 47

After you have added a picture to a layout area, you can edit it with [Menu > Edit](#).

You have the following possibilities for editing the picture:

Menu command	Function
Print	Prints the current picture
Copy	Copies the current picture to the clipboard.
Insert from Clipboard	Inserts a picture from the clipboard.
Fill out	Stretches the picture to the entire marked layout area. The picture may be distorted.
Zoom	Enlarges the picture without distortion to the maximum size of the marked layout area.
Centered	Centers the picture in original size in the marked layout area.

Table: *Editing possibilities for pictures*

⇒ **Processing menu for pictures** on page 123

Text

PROFESSIONAL | ADVANCED

You have the following possibilities:

⇒ **Inserting text directly** on page 47

⇒ **Saving text as building block** on page 48

⇒ **Inserting a text building block** on page 48

⇒ **Inserting text from the Explorer** on page 49

⇒ **Formatting text** on page 50

Inserting and editing elements

PROFESSIONAL | ADVANCED

On line diagrams and histograms, the following elements can be inserted and edited:

- Inserting and editing text elements
- Inserting and editing picture elements
- Inserting and editing arrow elements
- Inserting and editing frame elements

EN

Inserting and editing text elements

PROFESSIONAL | ADVANCED

You have created a line diagram or histogram.

⇒ **Creating a line diagram**

⇒ **Creating a histogram**

➔ **How to insert or edit a text element**

- 1 Mark the desired line diagram or histogram.
- 2 Select *Menu > Edit > Add Element > Text*.

The **Text Properties** dialog appears.

⇒ **Text properties dialog**

- Enter the desired text.
- If necessary, change the layout, position and channel connection.

- 3 In order to edit an existing text element, select the text element with a double-click.

The **Text Properties** dialog appears.

⇒ **Text properties dialog**

- 4 To move the text element, use drag & drop to drag the text element to the desired location.

If the text element is linked with a channel, you can also move the associated arrow element.

⇒ **How to remove an arrow element** on page 79

- 5 To delete the text element, select **Delete Element** from the context menu.



Inserting and editing picture elements

PROFESSIONAL | ADVANCED

You have created a line diagram or histogram.

⇒ **Creating a line diagram**

⇒ **Creating a histogram**

→ **How to insert or edit a picture element**

- 1 Mark the desired line diagram or histogram.

- 2 Select *Menu > Edit > Add Element > Picture*.

The **Picture Properties** dialog is displayed.

⇒ **Picture properties dialog**

- Select the desired picture file.
- If necessary, change the position, size, or the layer.

- 3 In order to edit an existing picture element, select the picture element with a double-click.

The **Picture Properties** dialog is displayed.

⇒ **Picture properties dialog**

- 4 In order to move the picture element, use drag & drop to drag the picture element to the desired location.

- 5 To delete the picture element, select **Delete Element** from the context menu.



Inserting and editing arrow elements

PROFESSIONAL ADVANCED

You have created a line diagram or histogram.

⇒ **Creating a line diagram**

⇒ **Creating a histogram**

→ How to insert or edit an arrow element

1 Mark the desired line diagram or histogram.

2 Select *Menu > Edit > Add Element > Arrow*.

The arrow element is added.

3 In order to edit an existing arrow element, select the arrow element with a double-click.


The **Arrow Properties** dialog appears.

⇒ **Arrow properties dialog**

4 To delete the arrow element, select **Delete Element** from the context menu.

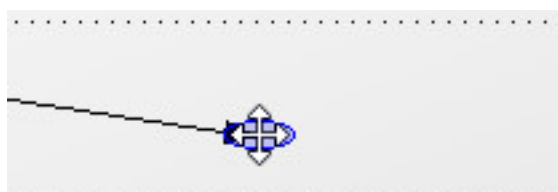


→ How to remove an arrow element

1 Move the mouse to the first end of the arrow element until the shape of the mouse changes .

The status bar displays **Arrow Start** or **Arrow End**.

2 While holding the left mouse button down, move the arrow element. Here the end is indicated with a colored oval.



3 Release the mouse button in the desired location. The shape of the mouse changes. The colored oval remains until you click again.

4 Repeat steps 1 to 3 for the other end of the arrow element.



You can also move arrow elements via entries in the **Arrow Properties** dialog.

⇒ **Arrow properties dialog** on page 230

Inserting and editing frame elements

PROFESSIONAL ADVANCED

You have created a line diagram or histogram.

⇒ **Creating a line diagram**

⇒ **Creating a histogram**

➔ How to insert or edit a frame element

1 Mark the desired line diagram or histogram.

2 Select *Menu > Edit > Add Element > Frame*.

The frame element is added.

3 In order to edit an existing frame element, select the frame element with a double-click.

The **Picture Properties** dialog is displayed.

⇒ **Frame dialog**

4 In order to move the frame element, use drag & drop to drag the frame element to the desired location.

5 To delete the frame element, select **Delete Element** from the context menu.



Handling presentations

PROFESSIONAL **ADVANCED** **BASE**

You can save and print presentations in whole or in part. You can use parts of your presentations in other applications.

EN

Saving presentations

PROFESSIONAL **ADVANCED** **BASE**

A complete presentation is saved in an individual format as HYW file. You can later open the file again, edit it completely and use it.

Furthermore, you can save an individual layout area of the type *Line Diagram* or *Histogram* as an image file. For this, various image formats are available with which the insertion into other applications (e.g. text processing or presentation programs) is possible. In any case you can no longer edit the layout area as image in **HYDROcom 6**.

→ How to save a complete presentation

- 1 Select *Menu > File > Save > Presentation*.

The Windows **Save as** dialog appears.

- 2 Select the folder in which you would like to save the presentation.
- 3 Specify a file name.
- 4 Select **Save**.



→ How to save an individual layout area as image file

- 1 Mark the layout area.
- 2 Select *Menu > Edit > Save as Graphic*.
- 3 Select the folder in which you would like to save the image file.
- 4 Specify a file name.
- 5 Select the desired file format from the drop-down list.
- 6 Select **Save**.



Saving measurement series

PROFESSIONAL | ADVANCED | BASE

After you have edited a measurement series (e.g. added a calculated channel) or combined different channels, you can save this measurement series as new measurement value file (*.mwf).

➔ How to save a measurement series

- 1 Mark the measurement series or the layout area with the measurement series.
- 2 Select *Menu > File > Save > Measurement Series*.
The Windows **Save as** dialog appears.
- 3 Select the folder in which you would like to save the measurement series.
- 4 Specify a file name.
- 5 Select **Save**.



Printing presentations

PROFESSIONAL | ADVANCED | BASE

You can output a presentation on any printer that is installed in Windows.

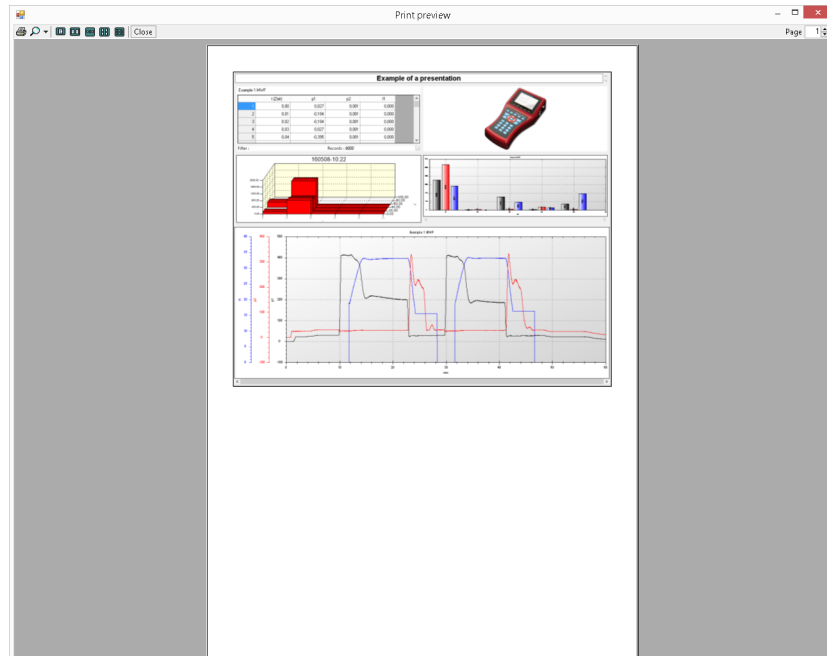
➔ How to print a presentation

- 1 Select *Menu > File > Print*.
The Windows **Print** dialog is displayed.
- 2 If necessary, change the settings on the Windows **Print** dialog.

- 3 Select **Print** on the Windows **Print** dialog.

If the **Print Preview** function is activated, the **Page View** window opens and displays a print preview.

⇒ **Print preview** on page 292



- Check the print preview.
- To send the presentation to the printer, click the **Print** button.
- Close the **Page View** window.



Print



Sends the presentation to the printer if you have clicked **Print** on the Windows dialog.

Zoom



Enlarges the print preview on the **Page View** window.

Whole page



Displays each page individually on the **Page View** window.

Two pages



Displays pages in pairs in the **Page View** window.

Three pages



Displays three pages at once in the **Page View** window.

Four pages



Displays four pages at once in the **Page View** window.

Six pages



Displays six pages at once in the **Page View** window.

Exit Closes the **Page View** window.

Page Displays the selected page in the **Page View** window.

About copying and inserting into third-party software

PROFESSIONAL | ADVANCED | BASE

You can copy individual layout areas of a presentation to the clipboard in order to insert them into third-party software (e.g. text processing). Mark the desired layout area and select **Menu > Edit > Copy**. If you like to copy all layout areas at once, select **Menu > Viewer > Copy All Elements**.

Change to the target application and insert the layout area there. Line diagrams, histograms, and pictures are transferred as images; texts and tables as editable texts.

Standardising presentations

PROFESSIONAL | ADVANCED | BASE

In order to design your presentation consistently and optimize your workflows, the software offers you many possibilities.

- Overwrite mode
Use existing presentations as template and overwrite the content with new data.
⇒ **Using overwrite** on page 99
- Program settings
Change the sequence of the colors used or define default directories.
⇒ **Setting up options** on page 16
- Default properties
Specify current element properties as default properties.
⇒ **Default properties** on page 85
- Configuration files
Save element properties as a configuration file.
⇒ **Configuration files** on page 86

EN

Default properties

PROFESSIONAL | ADVANCED | BASE

If you insert an element into the viewer, this element is created with the default properties. After that, you can edit the element on the appropriate dialog, for example change the background color.

The factory settings are the unchanged default properties. The software comes with these default properties.



On many dialogs, you can define the current settings as defaults.

If you do this, then each new element for which you have defined the default is created with these properties. For example, specify that line diagrams always have a blue background.



You can also reset the default properties to the factory settings.

Configuration files

PROFESSIONAL | ADVANCED

On particular dialogs, you can create configuration files. A configuration file saves the settings on the dialog in question.

On these dialogs you can overwrite the current settings with the settings from a configuration file.

Examples of configuration files are: *.kbf, *.tbf, *.hic, *.hyc, *.hyd, *.onl, *.xhly.



You can create as many configuration files as you wish and choose freely where you save these.

You can create settings for a configuration file anew or take over the current settings into a configuration file.



You can replace the current settings with the settings from a previously-saved configuration file.

This section presents the following information:

- **Types of configuration files**
- **Creating configuration files**
- **Changing configuration files**
- **Assigning a configuration file**
- **Resetting the configuration**
- **Deleting configuration files**

Types of configuration files

PROFESSIONAL ADVANCED

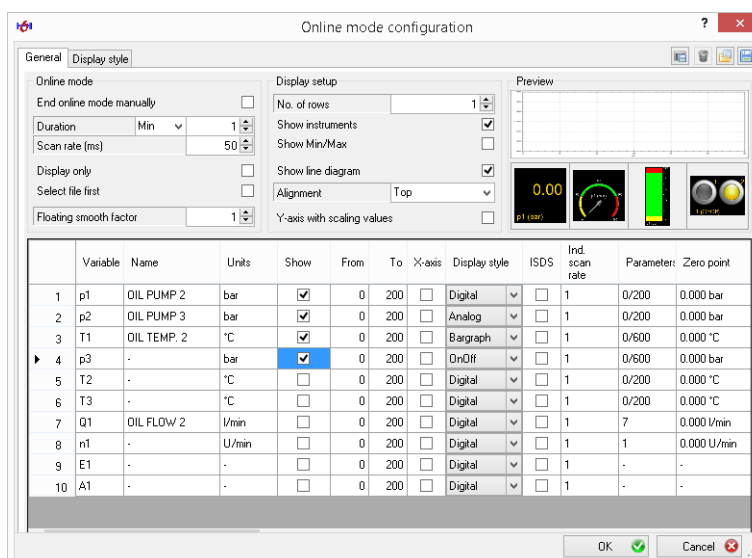
The software offers the following types of configuration files:

- **Online mode**
- **Viewer layout**
- **Line diagram**
- **Histogram**
- **Classification**
- **Table**
- **Text**
- **Envelope**

Online mode Configuration file for online mode: *.onl

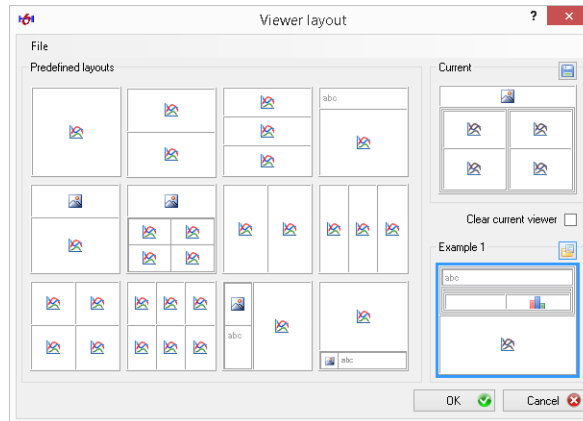
Specifies how the display should look in online mode.

⇒ **Online mode configuration dialog** on page 243



Specify the current settings as default properties so that you always operate the online mode with these settings. Use configuration files if, for example, you want to operate several instruments with the software.

Viewer layout Configuration file for viewer layout: *.xHYL
Specifies which layout areas are created in the viewer.
⇒ **Viewer layout dialog** on page 300



You can save the viewer layout in the **Current** area as configuration file or as default property.

Create a viewer layout as default property so that a new presentation receives this viewer layout. If you use several viewer layouts, you save appropriate configuration files.



Open a configuration file to replace the current viewer layout.

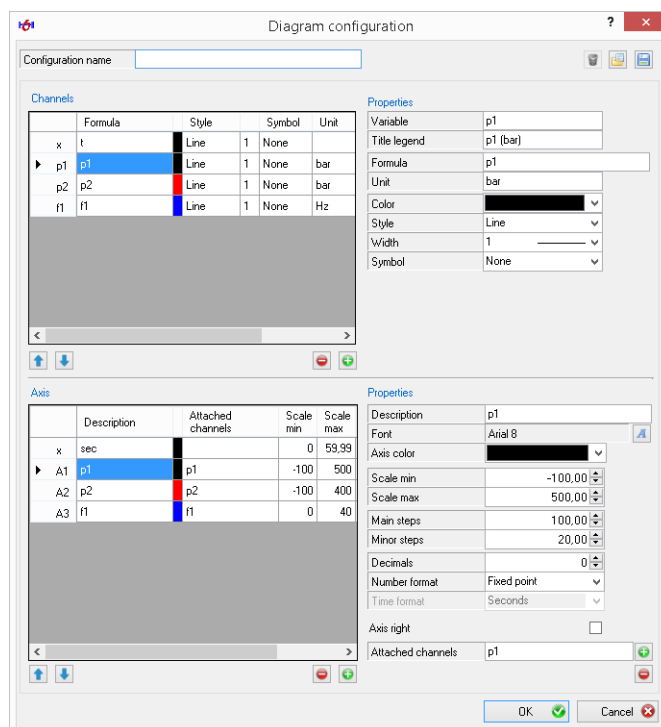
EN

Line diagram Configuration file for line diagrams: *.kbf

Specifies how the measurement series are displayed in line diagrams.

⇒ **How to create a configuration file for line diagrams** on page 92

⇒ **Diagram configuration dialog** on page 154

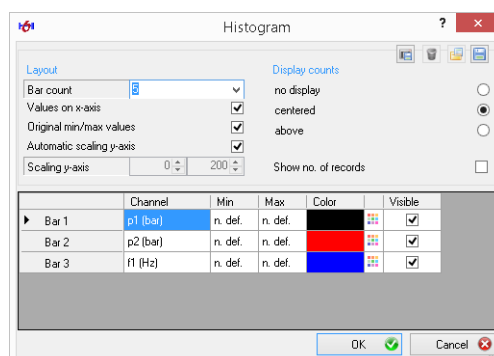


Histogram Configuration file for histograms: *.hic

Specifies how the measurement series are displayed in histograms.

⇒ **How to create a configuration file for histograms** on page 94

⇒ **Histogram (bars) dialog** on page 196



Classification Configuration file for classifications: *.hyc

Specifies how the measurement series are displayed in classifications.

⇒ **How to create a configuration file for classifications** on page 95

⇒ **Classification definition dialog** on page 206

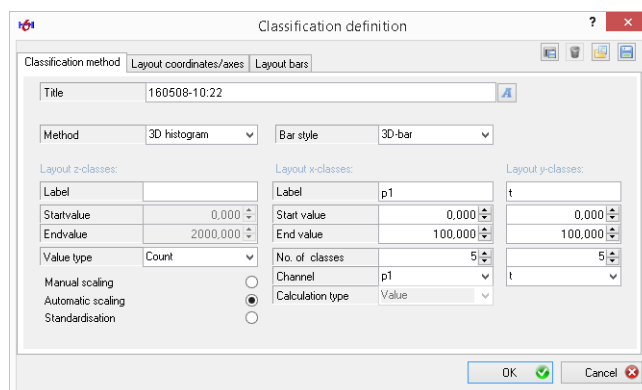
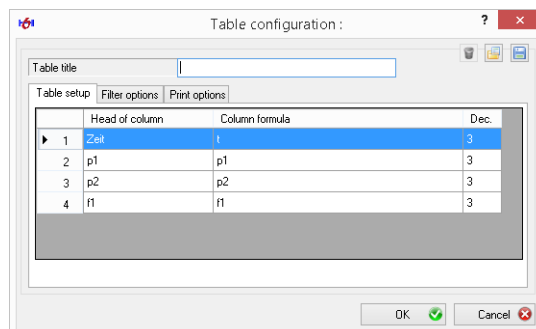


Table Configuration file for tables: *.tbf

Specifies how the measurement series are displayed in tables.

⇒ **How to create a configuration file for tables** on page 96

⇒ **Table configuration dialog** on page 216



With the configuration file for tables, you can also define filter settings or compact tables.

Text Configuration file for texts: *.hyd

Specifies how the measurement series are displayed in tables.

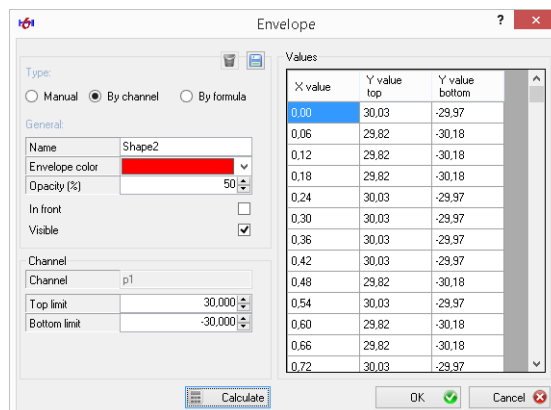
⇒ **How to save text as building block** on page 48

⇒ **How to insert a text building block** on page 48

Envelope Configuration file for envelopes: *.xml

Specifies how envelopes are generated on line diagrams.

⇒ **Envelope dialog** on page 176



If you assign an envelope with a configuration file, you must then calculate the envelope.

⇒ **Buttons area, Calculate** on page 180

Creating configuration files

PROFESSIONAL | ADVANCED

In this section, you learn how you create configuration files for line diagrams, histograms, classifications and tables.

- **How to create a configuration file for line diagrams**
- **How to create a configuration file for histograms**
- **How to create a configuration file for classifications**
- **How to create a configuration file for tables**

Create a layout area with the appropriate data and adjust the display to suit your desires.

⇒ **Creating presentations** on page 34

➔ How to create a configuration file for line diagrams

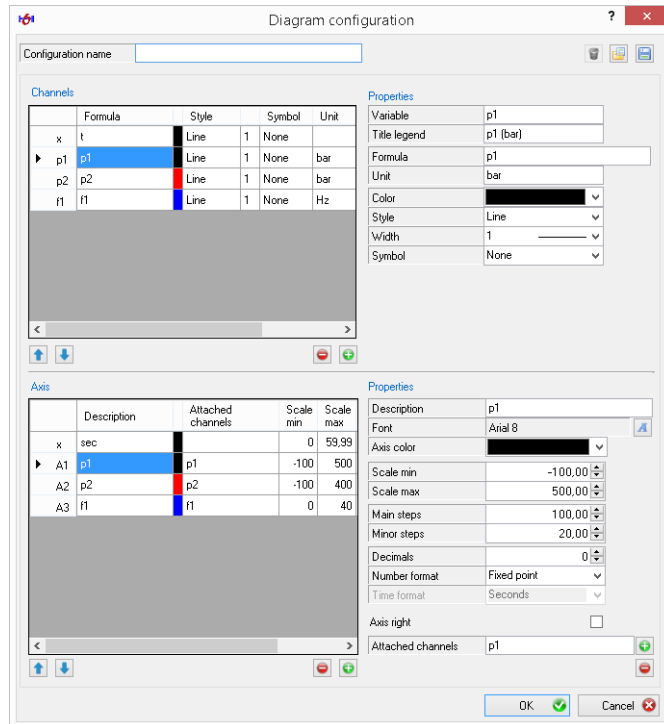
1 Mark the prepared line diagram.

⇒ **How to create a line diagram** on page 39

2 Select **Menu > Edit > Format > New**.

The **Chart configuration** dialog opens.

⇒ **Diagram configuration dialog** on page 154



3 Enter a name in the **Name of the Configuration** field.

The name helps you to distinguish several configuration files and to see which configuration file is currently being applied. The name is also suggested as file name when saving the configuration file.



4 In the **Channels** area, add channels or delete marked channels.

If you add a channel, you must still do the following:

- **Properties** (channels) area
 - Fill out the **Variable** field
 - Fill out the **Formula** field
 - ⇒ **Use of formulas** on page 146
- **Properties** (axes) area
 - Define linked channel
 - ⇒ **Attached channels** on page 160



- 5 Move channels on the channel list.

The position in the channel list corresponds to the level on the line diagram.

- 6 Change the properties of the channels.

Mark a channel in the channel list and change the values in the **Properties** area.

⇒ **Properties area** on page 157



- 7 In the **Axes** area, add axes or delete marked axes.



- 8 Move axes on the axes list.

The position in the axes list corresponds to the position of the axis on the line diagram.

- 9 Change the properties of the axes.

Mark an axis on the axes list and change the values in the **Properties** area.

⇒ **Properties area** on page 159



- 10 Click **Save these properties as file** to save the configuration file.

The Windows **Save as** dialog opens. You can change the storage location and file name.

Save the file.

- 11 Click **OK** to apply the configuration file to the line diagram.



→ How to create a configuration file for histograms

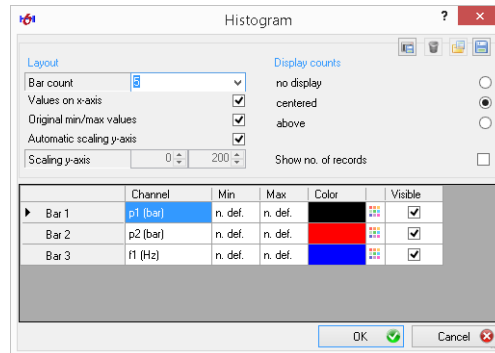
1 Mark the prepared histogram.

⇒ **How to create a histogram** on page 41

2 Select **Menu > Edit > Format > Change**.

The **Histogram** dialog opens.

⇒ **Histogram (bars) dialog** on page 196



3 If necessary, change the settings.



4 Click **Save these properties as file** to save the configuration file.

The Windows **Save as** dialog opens.

- Specify a file name. You can change the storage location.
- Save the file.

5 Click **OK** to apply the configuration file to the histogram.



→ How to create a configuration file for classifications

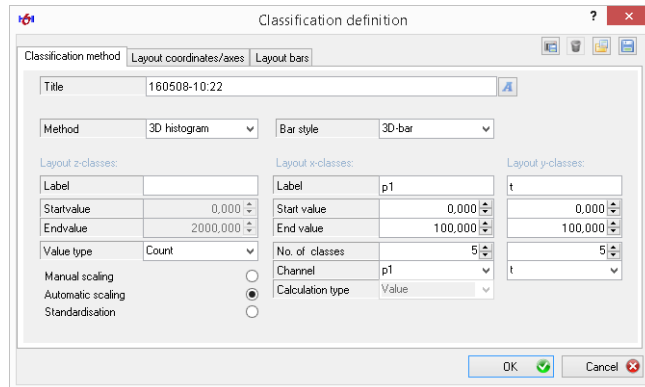
1 Mark the prepared classification.

⇒ **How to create a classification** on page 42

2 Select **Menu > Edit > Format > Change**.

The **Classification** dialog opens.

⇒ **Classification definition dialog** on page 206



The 'Classification definition' dialog box is shown with the following settings:

- Title:** 160508-10:22
- Method:** 3D histogram
- Bar style:** 3D-bar
- Layout z-classes:**
 - Label: (empty)
 - Start value: 0,000
 - End value: 2000,000
 - Value type: Count
- Layout x-classes:**
 - Label: p1
 - Start value: 0,000
 - End value: 100,000
 - No. of classes: 5
 - Channel: p1
 - Calculation type: Value
- Layout y-classes:**
 - Label: t
 - Start value: 0,000
 - End value: 100,000
 - No. of classes: 5
- Manual scaling:**
 - Manual scaling: ☐
 - Automatic scaling: ☒
 - Standardisation: ☐

Buttons: OK, Cancel

3 If necessary, change the settings.



4 Click **Save these properties as file** to save the configuration file.

The Windows **Save as** dialog opens.

- Specify a file name. You can change the storage location.
- Save the file.

5 Click **OK** to apply the configuration file to the classification.



→ How to create a configuration file for tables

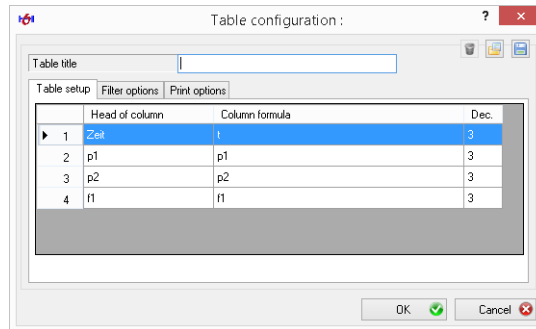
1 Mark the prepared table.

⇒ **How to create a table with measurement values** on page 43

2 Select **Menu > Edit > Format > New**.

The **Table Definition** dialog opens.

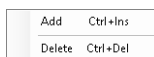
⇒ **Table configuration dialog** on page 216



3 Enter the name in the **Table Title** dialog.

The name is displayed over the table.

The name helps you to distinguish several configuration files and to see which configuration file is currently being applied. The name is also suggested as file name when saving the configuration file.



4 Add channels or delete marked channels.

Use the **Add** and **Remove** commands from the context menu.

If you add a channel, then you must fill the **Column Header** and **Column Formula** fields.

⇒ **Use of formulas** on page 146

5 If necessary, change other settings.



6 Click **Save these properties as file** to save the configuration file.

The Windows **Save as** dialog opens.

- Specify a file name. You can change the storage location.
- Save the file.

7 Click **OK** to apply the configuration file to the table.



Changing configuration files

PROFESSIONAL | ADVANCED

You can change existing configuration files.

→ How to change a configuration file

- 1 Assign the desired configuration file.

⇒ **Assigning a configuration file** on page 98

- 2 Select *Menu > Edit > Format > Change*.

The appropriate dialog for changing the properties opens:

- **Diagram configuration dialog**
- **Histogram (bars) dialog**
- **Classification definition dialog**
- **Table configuration dialog**

If you have not assigned a configuration file yet, the Windows **Open** dialog opens.

- 3 Change the desired properties.

- 4 Save the configuration file.



- 5 Click **Save these properties as file** to save the configuration file.

The Windows **Save as** dialog opens.

- Enter a new file name or overwrite the file.
- Save the file.

- 6 Click **OK** to apply the configuration file.



Assigning a configuration file

PROFESSIONAL | ADVANCED

You can create as many configuration files as you wish. Assign the configuration file to a layout area.

→ How to assign a configuration file

- 1 Create a layout area, for example a layout diagram, and fill it with data.
- 2 Mark the layout area.
- 3 Select *Menu > Edit > Format > Selection*.

The Windows **Open** dialog opens.

- 4 Select and open the desired configuration file.

The configuration file is applied.



Resetting the configuration

PROFESSIONAL | ADVANCED

For the following elements, you can reset the configuration:

- Line diagrams
- Tables
- Texts

During resetting, all properties that are defined by a configuration file are replaced by the default properties.

→ How to reset the configuration

- 1 Mark the desired layout area.
- 2 Select *Menu > Edit > Format > Remove*.

The configuration is reset.



Deleting configuration files

PROFESSIONAL | ADVANCED

Use your file manager to delete configuration files.

If you have deleted a configuration file, the layout of your presentation is retained.

Using overwrite

PROFESSIONAL | ADVANCED | BASE

Menu > Extras > Overwrite

The overwrite function allows you to use existing presentations and reports as templates. If the **Overwrite** check box is activated, you cannot add measurement data to the presentation elements; you can only overwrite the existing measurement data with new data.

If, for example, you have several similar data sets that you would like to display in similarly-structured presentations, you only need to create these presentations once. For each additional data set, you use the presentation created as template and only overwrite the measurement data.

Similarly, you can use the overwrite function for reports in the **Report** application.

➔ How to use overwrite for presentations

- 1 Transfer all measurement data from the instrument
- 2 Create the desired presentation with the first data set.
⇒ **Creating presentations** on page 34
- 3 Save the presentation.
⇒ **Saving presentations** on page 81
- 4 Activate the *Menu > Extras > Overwrite* check box.
- 5 Select the measurement data for the second data set in the Explorer.
- 6 Use drag & drop to drag the measurement data to the appropriate elements in the presentation, such as line diagrams, histograms, or tables.

This measurement data is not added to the elements; instead, it replaces the existing measurement data.
- 7 Save the presentation in a new file.
⇒ **Saving presentations** on page 81
- 8 Repeat steps 5 to 7 for each desired data set.



→ How to use overwrite for reports

- 1 Activate the [Menu > Extras > Overwrite](#) check box.
 - 2 Open the presentation that you have previously created for the first data set.
 - 3 Create the desired report from the presentation of the first data set.
 - ⇒ **Compiling a report** on page 303
 - ⇒ **Editing functions** on page 310
 - 4 Save the report.
 - ⇒ **Saving a report** on page 323
 - 5 Open the presentation that you previously created for the second data set.
 - 6 Use drag & drop to drag the elements of the presentation to the appropriate elements of the report while holding down the **Ctrl** key.
 These elements will not be added to the report, but rather replace the existing elements.
 - 7 Save the report in a new file.
 - ⇒ **Saving a report** on page 323
 - 8 Repeat steps **5** to **7** for each desired data set.
-
- ⇒ **Overwrite** on page 137

Handling measurement data

PROFESSIONAL | ADVANCED | BASE

You can save, delete, and further process measurement data.

Linking measurement series

PROFESSIONAL | ADVANCED | BASE

You can link two measurement series with one another and save them under a new file name.



Measurement series can only be linked if the following parameters are identical:

- Sampling rates
- Trigger settings
- Number of data sets

→ How to link measurement series

- 1 Select *Menu > Extras > Link (*MWF)*.

The Windows **Open** dialog appears.

- 2 Select the first measurement value file.

The Windows **Open** dialog opens again.

- 3 Select the second measurement value file.

The Windows **Save as** dialog appears.

- 4 Select a directory and a file name for the linked measurement value file.

The file is saved.



Deleting channels and measurement series

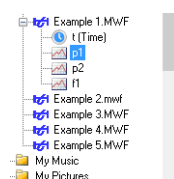
PROFESSIONAL | ADVANCED | BASE

In the Explorer, you can delete individual channels of a measurement series or complete measurement series.

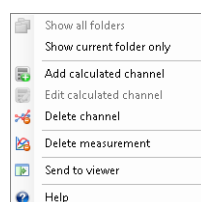
⇒ **Explorer** on page 142

→ How to delete an individual channel

- 1 In the Explorer, mark the measurement series that you would like to delete.



- 2 Right-click the mouse on the marking.



- 3 Select **Delete Channel** to delete the marked channel from the measurement series.

The marked channel is deleted.

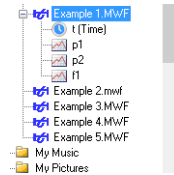


If you delete a channel from a measurement series, it is removed from the internal structure of the software, however it is retained in the measurement series. If you want to delete the channel for good, you must save the measurement series again.

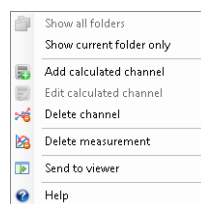


➔ How to delete a complete measurement series

- 1 In the Explorer, mark the measurement series that you would like to delete.



- 2 Right-click the mouse on the marking.



- 3 Select **Delete Measurement Series** to delete the marked measurement series.

The marked measurement series is moved to the Recycle Bin.



About multi-channels

PROFESSIONAL

Multi-channels are channels on which the data from several sources is transferred together. Multi-channels can be switch states (max. 32 switches on a channel) or different sensor signals.

In a CAN message, many machine states (pump on, blinker off, back light on, engine on, etc.) can be encrypted with one bit apiece. By default, an individual measurement channel on the instrument must be used for each state or state bit. Thanks to the multi-channel function, all state bits can be recorded by a single channel.

Later on, there can be a separation of the individual states with **HYDROcom 6**. With **HYDROcom 6** you can also combine individual bits of a multi-channel into a single measurement value.

⇒ **Processing multi-channels** on page 104

⇒ **About multi-channels in online mode** on page 30

Processing multi-channels

PROFESSIONAL

Multi-channels are displayed in the Explorer on the **Selection** tab.

⇒ **About multi-channels** on page 103

⇒ **Select tab** on page 143

If the measurement values of several sensors are saved on the multi-channel, you must create calculated channels in order to correctly interpret the digital data.

Example On a multi-channel, the signals of a temperature sensor arrive in the first eight bits and the signals of a pressure sensor in the next eight bits.

For the display of the temperature, you create a calculated channel with the following formula:

$(X1.0:X1.7)*TFactor$

TFactor is the conversion value for the coded temperature. For the value, see the sensor documentation.

For the display of the pressure, create a second calculated channel with the following formula:

$(X1.8:X1.15)*pFactor$

pFactor is the conversion value for the coded pressure. For the value, see the sensor documentation.

⇒ **About calculated channels** on page 104

⇒ **Add Calculated Channel dialog** on page 145

⇒ **Frequently-used formulas** on page 147

About calculated channels

PROFESSIONAL

You can add measurement series to a calculated channel, which can then be used as a normal channel in presentations. It is also possible to repeat the process and thus to add several calculated channels to a measurement series.

Furthermore, you can use calculated channels to isolate individual measurement signals from multi-channels.

⇒ **Processing multi-channels** on page 104

Use the **Add Calculated Channel** dialog to create a calculated channel.

⇒ **Add Calculated Channel dialog** on page 145

⇒ **Frequently-used formulas** on page 147

About measurement data exchange

PROFESSIONAL | ADVANCED

With the software, you can export measurement value data in text, CSV or XML files in order to use these in third-party software (e.g. spreadsheet calculation programs). Furthermore, you can import measurement data from text, CSV and XML files.

Export of CSV and XML files

For the export of CSV and XML files, you do not have to configure any formats and parameters.

Export of TXT files

If you want to export TXT files, you must first configure the data export.

For the default format of TXT files, you can configure parameters. Use these parameters for TXT files in order to adjust the TXT files for import into third-party software.

Import of TXT, CSV and XML files

You can re-import TXT files that you have exported with the standard format, CSV files and XML files into the software.

The parameters that you have configured for the standard format of TXT files are also used for the import of TXT files.

The import of CSV and XML files is only possible in the **PROFESSIONAL** edition.

Cross-references

⇒ **Data exchange settings dialog** on page 283

⇒ **Format specifications** on page 106

Format specifications

PROFESSIONAL | ADVANCED

So that you can import measurement value data, the data must have a particular format.

⇒ **About measurement data exchange** on page 105

XML files You can get the document type definition (DTD) for XML files from customer service.

⇒ **Manufacturer** on page 2

TXT files You can get the format specifications for TXT files from customer service.

⇒ **Manufacturer** on page 2

CSV files You can get the format specifications for CSV files from the following table.

Row	Description	Example
1	Channel designations, separated with a semicolon The time must be in the first column. The <i>t</i> in the third column is only required if measurement series with different sampling rates have been combined. The software accepts CSV files with this format or with <i>t</i> only at the beginning of each row.	t;p1(bar);t;p2(bar)
2	The first data row with values for time; p1; time; p2	0;0.055;0;0.025
3	The second data row	0.05;0.167;0.025;0.077
etc.		etc.

Table: *Format specifications for CSV files*

Using the search function

PROFESSIONAL

With the search function, you can search for any texts in the headers of the measurement value files.

The contents of the header are also displayed on the **Details** tab of the Explorer.

⇒ **Details tab** on page 149

Use the search function to search the headers of all measurement files in a particular directory. This way, for example, you can find all measurement series that were recorded on a particular day or by a particular instrument (using the serial numbers).

→ How to use the search function

- 1 On the **Selection** tab in the Explorer, mark the desired directory.
- 2 Enter the text you are searching for in the search field at the lower edge of the Explorer.



- 3 Click **Start Search**.
- 4 The result of the search is displayed on the **Search Results** tab.



Program Window

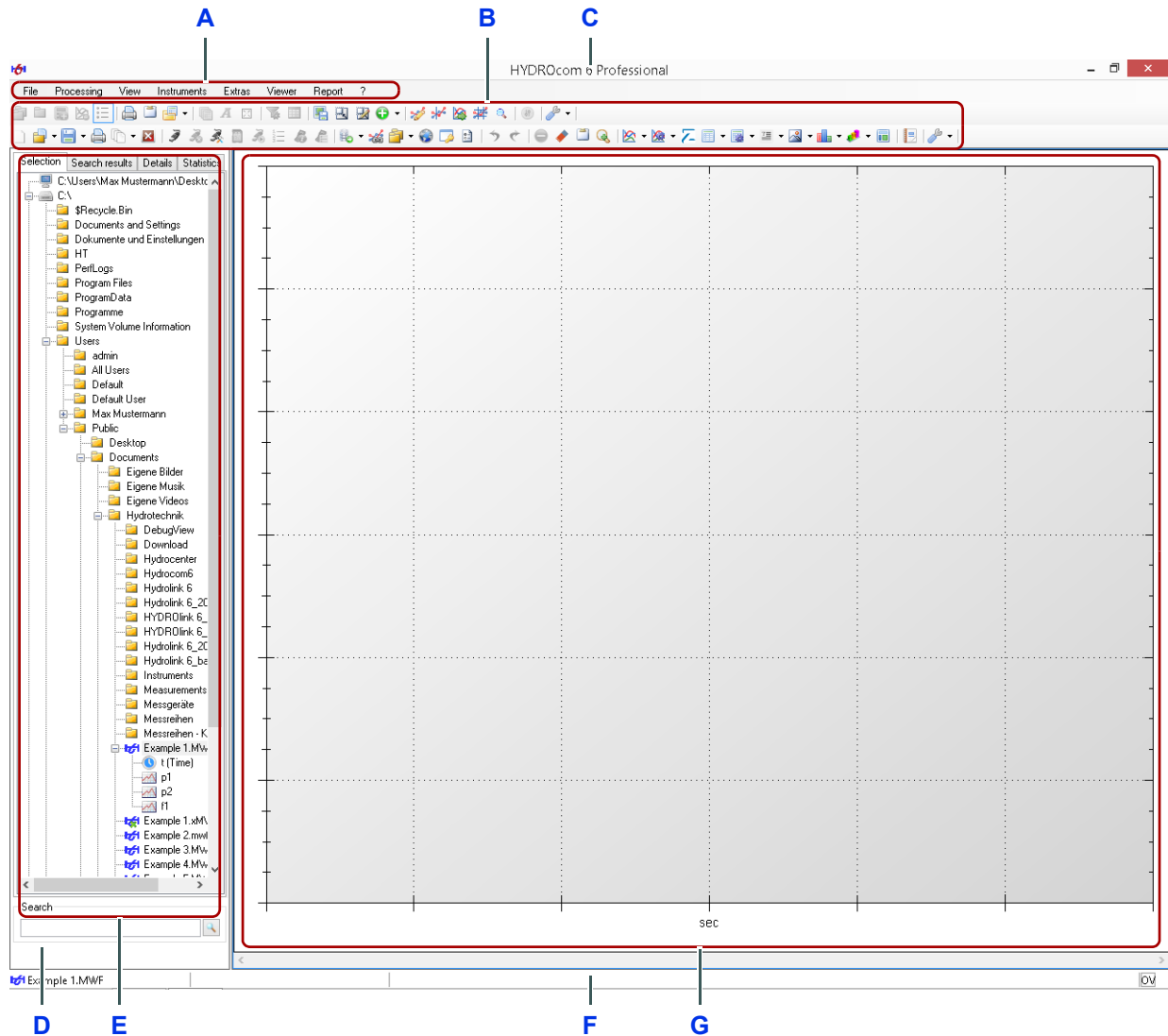
This chapter describes the software's program window.

EN

Overview

PROFESSIONAL | **ADVANCED** | **BASE**

HYDROcom 6



A Menu bar
D Search bar
G Viewer

B Toolbar
E Explorer

C Title bar
F Status bar

The program window consists of the following areas:

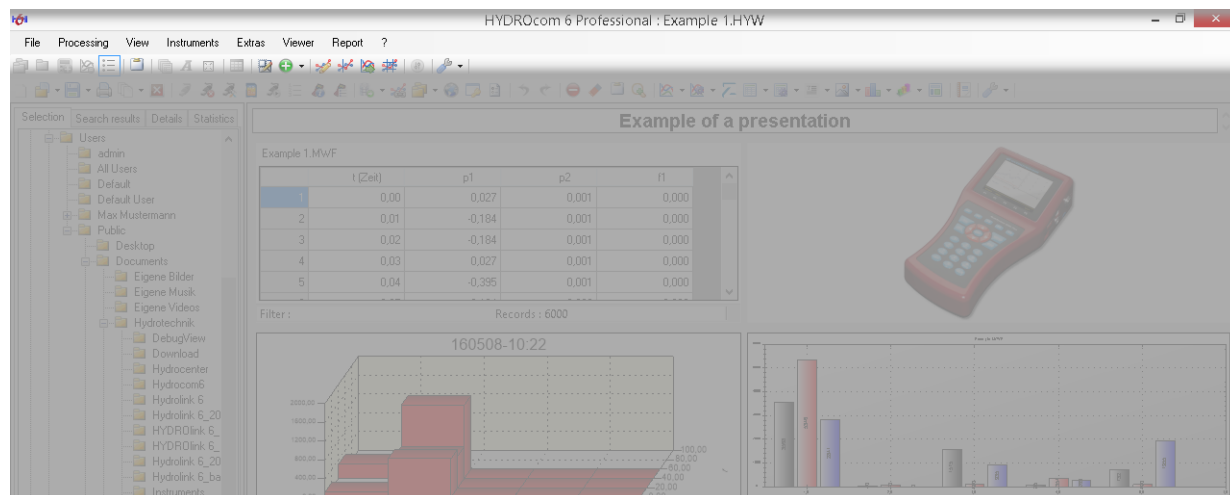
- **Title bar**
- **Menu bar**
- **Toolbar** (Main toolbar and working toolbar)
- **Explorer**
- **Viewer**
- **Search**
- **Status bar**

Title bar The title bar is a Windows standard element.

Menu bar

PROFESSIONAL | ADVANCED | BASE

Menu



The menu bar includes all operating menus. On the menus, you can access most functions of the software.

Click a menu to open it. If menus or menu functions are gray rather than black, this function is not available.

The menu bar consists of the following menus:

- **File menu**
- **Processing menu**
 - **Processing menu for line diagram**
 - **Processing menu for histograms**
 - **Processing menu for classifications**
 - **Processing menu for tables**
 - **Processing menu for texts**
 - **Processing menu for pictures**
 - **Processing menu for the Select tab (Explorer)**
 - **Processing menu for the Search results tab (Explorer)**
 - **Processing menu for the Details tab (Explorer)**
 - **Processing menu for the Statistics tab (Explorer)**
- **View menu**
- **Instruments menu**
- **Extras menu**
- **Viewer menu**
- **Report menu**
- **? menu**

File menu

PROFESSIONAL **ADVANCED** **BASE**

Menu > File

The **File** menu includes the following functions:

New



Creates a new presentation and closes the opened presentation.

Open



Opens a file.

Prerequisite: A layout area that can display a measurement series is active.

- **Measurement series (*.MWF)**

Inserts a measurement value file into the current presentation.

The function can only be selected if an appropriate element is active in the viewer.

- **Presentation (*.HYW)**

Opens a saved presentation (not for **BASE**).

- **Format definitions**

Opens a file with which the display of an opened measurement value file can be formatted. Format definitions can be saved for tables and graphics.

Save



Saves a file (not for **BASE**)

- **Measurement series**

Saves the measurement series of the current presentation as MWF file.

- **Presentation (*.HYW)**

Saves the current presentation as HYW file.

- **PDF**

Saves the complete viewer as PDF file.

Print



Prints the current presentation.

EN

Last Measurement Series



Displays a list of the last measurement series opened.

By clicking a measurement series, the Explorer jumps to it (if it is still present).

Exit



Closes the current presentation and exits the software.

EN

Processing menu

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Processing

The content of the menu depends on the active area of the program window:

- Line diagram layout area
 - ⇒ **Processing menu for line diagram** on page 113
- Histogram layout area
 - ⇒ **Processing menu for histograms** on page 117
- Classification layout area
 - ⇒ **Processing menu for classifications** on page 119
- Table layout area
 - ⇒ **Processing menu for tables** on page 121
- Text layout area
 - ⇒ **Processing menu for texts** on page 125
- Picture layout area
 - ⇒ **Processing menu for pictures** on page 123
- Explorer, Selection tab
 - ⇒ **Processing menu for the Select tab (Explorer)** on page 127
- Explorer, search results tab
 - ⇒ **Processing menu for the Search results tab (Explorer)** on page 129

Processing menu for line diagram

PROFESSIONAL **ADVANCED** **BASE**

Menu > Processing (Line Diagram)

⇒ **Line diagram** on page 51

If a **Line Diagram** is marked in the layout area, **Processing** has the following functions.

Format



Manages configuration files for line diagrams (not for **BASE**).

- **New**

Creates a new configuration file.

Opens the **Configuration diagram** dialog.

⇒ **Diagram configuration dialog** on page 154

- **Processing**

Opens an existing configuration file.

Opens the **Configuration diagram** dialog.

⇒ **Diagram configuration dialog** on page 154

- **Select**

Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

- **Delete**

Deletes a saved configuration file without confirmation.

⇒ **Configuration files** on page 86

Save as graphic



Saves the marked line diagram as an image file.

Opens the Windows **Save as** dialog.

Save as...



Saves the measurement values of the marked line as **MWF** or **xMWF** file.

Opens the Windows **Save as** dialog.

The file contains all measurement values for the channels without the properties of the line diagram. The setting on the **Options** dialog, **Performance** tab has no effect on the number of measurement values.

⇒ **Performance tab** on page 299

MWF is a binary, proprietary file format. MWF can only be used if all channels have the same sampling rate and number of data sets. MWF files are small files.

xMWF is an XML file and can be processed further accordingly. xMWF files are large files.

Save as PDF



Saves the marked line diagram as PDF file (only for **PROFESSIONAL**).

Opens the Windows **Save as** dialog.

Print



Prints the current line diagram.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy



Copies the current line diagram onto the clipboard as a graphic.

The graphic can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Automatic scaling



Uses the rounded minimal and maximal values of the measurement variables as scaling limits. All values are displayed.

Manual scaling



Opens the **Manual Scaling** dialog.

⇒ **Manual scaling dialog** on page 175

Add element



Inserts an element into the line diagram (not for **BASE**).

The following elements can be inserted:

- Text
 - ⇒ **Text properties dialog** on page 224
- Picture
 - ⇒ **Picture properties dialog** on page 228
- Arrow
 - ⇒ **Arrow properties dialog** on page 230
- Frame
 - ⇒ **Frame dialog** on page 232

Delete element



Deletes the current element from the line diagram without confirmation (not for **BASE**).

Shortcut: **Del**

Shapecurve



Inserts a shapecurve (only for **PROFESSIONAL**).

- **New**

Opens the **Shapecurve** dialog to define a shapecurve.

⇒ **Envelope dialog** on page 176

- **Select**

Opens the Windows **Open** dialog.

Opens an XML file for a defined shapecurve.

Smooth



Smooths individual measurement values through averaging or filtering (not for **BASE**).

Opens the **Smooth** dialog.

⇒ **Smoothing dialog** on page 181

Spot



Inserts a vertical line and a value window into the line diagram (not for **BASE**).

The value window displays the values of all measurement variables in the position of the spot line. The spot line can be shifted with the mouse on the line diagram.

Shortcut: **F7**

⇒ **Spot properties dialog** on page 185

Difference spot



Inserts two vertical lines and a value window into the line diagram (not for **BASE**).

The value window displays the differences of all measurement values between the two spot lines. The spot lines can be shifted with the mouse on the line diagram.

⇒ **Difference spot properties dialog** on page 188

Move



Moves the marked measurement variables on the X-axis (not for **BASE**).

Opens the **Move channel** dialog.

⇒ **Move channel dialog** on page 191

Difference measurement



Inserts a horizontal and vertical measurement line pair. Displays the difference between two curve positions for each channel with respect to the X-axis and the Y-axis (only for **PROFESSIONAL**).

Difference properties dialog on page 192

Clear content



Deletes the line diagram with all elements without confirmation.

Shortcut: **Ctrl + Del**

Optimized display speed

Displays only a maximum number of data points per channel in order to speed up the picture composition for large measurement series.



If the option is activated, a check mark (✓) appears next to the entry and only the maximum number of data points is used.

The number of maximum data points that can be displayed is specified on the **Options** dialog, **Performance** tab.

⇒ **Performance tab** on page 299

Zoom function



Activates the zoom tool. The zoom tool must be re-activated each time.

Shortcut: **z**

Alternative: **Alt** + left mouse button.

Help



Displays the help for this menu.

Processing menu for histograms

PROFESSIONAL | ADVANCED

Menu > Processing (histogram)

⇒ **Histogram** on page 68

If a **Histogram** is marked in the layout area, the **Processing** menu has the following functions.

Format



Manages configuration files for histograms.

- **Processing**

Changes an existing configuration file.

Creates a new configuration file.

Opens the **Histogram** dialog.

⇒ **Histogram (bars) dialog** on page 196

- **Select**

Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

⇒ **Configuration files** on page 86

Save as graphic



Saves the marked histogram as image file.

Opens the Windows **Save as** dialog.

Save as PDF



Saves the marked histogram as PDF file (only for **PROFESSIONAL**).

Opens the Windows **Save as** dialog.

Print



Prints the current histogram.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy to Clipboard



Copies the current histogram onto the clipboard as graphic.

The graphic can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Automatic scaling



Uses the minimal and maximal values of the measurement variables as scaling values.

Add element



Inserts an element into the histogram.

The following elements can be inserted:

- Text
⇒ **Text properties dialog** on page 224
- Picture
⇒ **Picture properties dialog** on page 228
- Arrow
⇒ **Arrow properties dialog** on page 230

Delete element



Deletes the current element from the histogram without confirmation.

Shortcut: **Del**

Clear content



Deletes the histogram without confirmation.

Shortcut: **Ctrl + Del**

Help



Displays the help for this menu.

Processing menu for classifications

PROFESSIONAL

Menu > Processing (Classification)

⇒ **Classification** on page 71

If a **Classification** is marked in the layout area, the **Processing** menu has the following functions.

Format



Manages configuration files for classifications.

- **Processing**

Changes an existing configuration file.

Creates a new configuration file.

Opens the **Classification** dialog.

⇒ **Classification definition dialog** on page 206

- **Select**

Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

⇒ **Configuration files** on page 86

Save as graphic



Saves the marked classification as image file.

Opens the Windows **Save as** dialog.

Save as MWC file



Saves the classification in a file with a smaller file size.

A classification can be formed from this file later on, however it can no longer be displayed as line diagram, table, or histogram.

Opens the Windows **Save as** dialog.

Save as PDF



Saves the marked classification as PDF file.

Opens the Windows **Save as** dialog.

Print



Prints the current classification.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy to clipboard



Copies the current classification into the clipboard as a graphic.

The graphic can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Show trackbar



Displays trackbar at the bottom and right. You can use the trackbar to show bars in the foreground. Thus, hidden bars become visible.

Clear content



Deletes the classification without confirmation.

Shortcut: **Ctrl + Del**

Help



Displays the help for this menu.

Processing menu for tables

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Processing (Table)

⇒ **Table** on page 73

If a **Table** is marked in the layout area, the **Processing** menu has the following functions.

Format



Manages configuration files for tables (not for **BASE**).

- **New**

Creates a new configuration file.

Opens the **Table Definition** dialog.

⇒ **Table configuration dialog** on page 216

- **Processing**

Changes an existing configuration file.

Opens the **Table Definition** dialog.

⇒ **Table configuration dialog** on page 216

- **Select**

Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

- **Delete**

Deletes a saved configuration file without confirmation.

⇒ **Configuration files** on page 86

Save as...



Saves the measurement values of the marked table as MWF or xMWF file.

Opens the Windows **Save as** dialog.

Print



Prints the current table.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy



Copies the current table onto the clipboard as a graphic.

The graphic can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Filter options



Has the following function depending on the situation:

- Table without assigned table configuration.
Opens the Windows **Open** dialog to apply a table configuration.
Then opens the **Table Definition** dialog.
⇒ **Table configuration dialog** on page 216
- Table with assigned table configuration.
Then opens the **Table Definition** dialog.
⇒ **Table configuration dialog** on page 216
- Compact table
Then opens the **Table Definition** dialog.
⇒ **Table configuration dialog** on page 216

EN

Statistics



Inserts statistical information for the current measurement series into the table.

	p1	T1
Minimum	133,092	83,765
Maximum	151,365	83,988
Mean average	145,701	83,874
Quadratic mean	145,839	83,874
Standard deviation	6,342	0,054

Spot



Inserts spot values for all open line diagrams into the table.

⇒ **Spot properties dialog** on page 185

Compact table



Creates a compact table from the current measurement series.

Clear content



Deletes the table without confirmation.

Shortcut: **Ctrl + Del**

Decimal places

Decimal places

Changes the number of decimal places used in the entire table.

Overwrites the settings on the **Table Configuration** dialog. The number of decimal places per column can be specified on the **Table Configuration** dialog.

⇒ **Table configuration dialog, Options tabs** on page 218

Help



Displays the help for this menu.

Processing menu for pictures

PROFESSIONAL | ADVANCED

Menu > Processing (Picture)

⇒ **Picture** on page 76

If a **Picture** is marked in the layout area, the **Processing** menu has the following functions.

Format



- **Select**

Selects a picture file and applies it to the layout area.

Opens the Windows **Open** dialog.

Print



Prints the current picture.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy to clipboard



Copies the current picture to the clipboard.

The picture can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Paste from clipboard

Inserts a picture from the clipboard.

Stretch



Stretches the picture across the entire marked layout area. The picture may be distorted in the process.



Zoom

Zoom

Enlarges the picture without distortion to the maximum size of the marked layout area.



Center

Centered

Centers the picture in original size in the marked layout area.



Delete content

Deletes the picture without confirmation.

Shortcut: **Ctrl + Del**



Help

Displays the help for this menu.

Processing menu for texts

PROFESSIONAL | ADVANCED

Menu > Processing (Text)

⇒ **Text** on page 76

If a **Text** is marked in the layout area, the **Processing** menu has the following functions.

Format

Manages configuration files for texts (text building blocks).



- **New**

Creates a new configuration file.

Opens the Windows **Save as** dialog.

- **Select**

Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

- **Delete**

Deletes a saved configuration file without confirmation.

⇒ **Configuration files** on page 86

Print



Prints the current text.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy



Copies the current text onto the Windows clipboard.

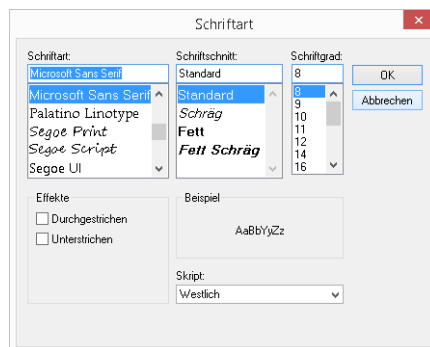
The text can be inserted into another program (e.g. Word).

Shortcut: **Ctrl + C**

Font



Opens the Windows **Font** dialog for formatting the font.



Align left


Aligns the text left-flush.

Align middle


Aligns the text centered.

Align right


Aligns the text right-flush.

Insert


Inserts information from the current measurement series into the text:

- Statistics
Inserts the statistical data.
- Details
Inserts the detailed information.

Clear content


Deletes the text without confirmation.

Shortcut: **Ctrl + Del**

Help


Displays the help for this menu.

Processing menu for the Select tab (Explorer)

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Processing (Select)

If the **Select** tab is active in the Explorer, the **Processing** menu has the following functions. The available functions depend on the element currently marked in the Explorer.

All directories



Expands the view to all directories.

Current directory

Reduces the view to the current directory.

Add calculated channel



Opens the **Add calculated channel** dialog (only for **PROFESSIONAL**).
⇒ **Add Calculated Channel dialog** on page 145

Processing calculated channel



Opens the **Add calculated channel** dialog for the marked channel. Changes will be taken over automatically into the viewer (only for **PROFESSIONAL**).
⇒ **Add Calculated Channel dialog** on page 145

Delete channel



Deletes the marked channel.

The channel is deleted from the software view and can no longer be used.

The channel is retained in the file for the measurement series.

Delete measurement series



Deletes the marked measurement series.

The measurement series is moved to the Windows Recycle bin.

Take over into the viewer



Inserts the marked channel or the marked measurement series into the active layout area.

Functions only with the following layout areas:

- Line diagram
- Histogram
- Classification
- Table

Help



Displays the help for this menu.

Processing menu for the Search results tab (Explorer)

PROFESSIONAL

Menu > Processing (Search results)

If in the Explorer the **Search results** tab is active, the **Processing** menu has the following functions.

Delete measurement series



Deletes the marked measurement series.

The measurement series is moved to the Windows Recycle bin.

Take over into the viewer



Inserts the marked channel or the marked measurement series into the active layout area.

Functions only with the following layout areas:

- Line diagram
- Histogram
- Classification
- Table

Help



Displays the help for this menu.

Processing menu for the Details tab (Explorer)

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Processing (Details)

If in the Explorer the **Details** tab is active, the **Processing** menu has the following functions.

Print



Prints only the area marked on the **Details** tab. If nothing is marked, nothing is printed.

Ctrl + A marks everything on the tab.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy to clipboard



Copies the marked area onto the clipboard as text.

The text can be inserted into another program (e.g. Word).

The text can be inserted into a layout area of the type text.

⇒ **How to insert individual texts from the Explorer** on page 49

Shortcut: **Ctrl + C**

Group view



Groups the information in the view or switches the grouping off again.

Help



Displays the help for this menu.

EN

Processing menu for the Statistics tab (Explorer)

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Processing (Statistics)

If the **Statistics** tab is active in the Explorer, the **Processing** menu has the following functions.

Print



Prints only the marked area on the **Statistics** tab. If nothing is marked, nothing is printed.

Ctrl + A marks everything on the tab.

Opens the Windows **Print** dialog.

Shortcut: **Ctrl + P**

Copy to clipboard



Copies the marked area onto the clipboard as text.

The text can be inserted into another program (e.g. Word).

The text can be inserted in a layout area of the type table or text.

⇒ **How to create a table with statistical data** on page 45

⇒ **How to insert the entire register content from the Explorer** on page 49

⇒ **How to insert individual texts from the Explorer** on page 49

Shortcut: **Ctrl + C**

Group view



Groups the information in the view or switches the grouping off again.

Help



Displays the help for this menu.

EN

View menu

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > View

The **View** menu has the following functions.

Main toolbar

Shows and hides the main toolbar.

Working toolbar

Shows and hides the working toolbar.

Status bar

Shows and hides the status bar.

Explorer

Shows and hides the Explorer.

Instruments menu

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instruments

⇒ **Instruments** on page 26

The **Instruments** menu has the following functions.

Connect (Interface)



Starts the connection to an instrument connected to the computer.

The software uses the pre-set interface for this (example: USB). You can change the default setting for the interface with the **Options**.

⇒ **Options**

Disconnect



Disconnects the connection to the instrument.

Options



Opens the **Connection Settings** dialog.

⇒ **Configuring the connection to the measurement device** on page 19

⇒ **Connection properties dialog** on page 234

Read instrument memory



Reads the device memory and shows the measurement data found for downloading.

Online mode



Starts the online mode with the connected instrument.

In online mode, the currently-arriving measurement values can be displayed on the computer and stored.

⇒ **Online mode configuration dialog** on page 243

⇒ **Patrick Online window** on page 271

EN

Linearisation



Opens a dialog with the linearisation values that are sent to instruments of the **Compare** series.

Instrument parameters



Opens the **Instrument Parameters** dialog.
⇒ **Instrument parameters dialog** on page 280

Instrument list



Opens the **Instrument List** dialog.
⇒ **Device list dialog** on page 282

Help



Displays the help for this menu.

Extras menu

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Extras

The **Extras** menu has the following functions.

Data exchange



Exports or imports measurement data from or to other formats (not for **BASE**). Changes options for the export and import filters.

⇒ **About measurement data exchange** on page 105

- **Format**

Opens the **Data exchange options** dialog.

⇒ **Data exchange settings dialog** on page 283

- **Import**

Imports measurement data in the following formats in the marked layout area:

- **TXT**: The file format must correspond to the setting on the **Data exchange options** dialog.

⇒ **Data exchange settings dialog** on page 283

- **CSV** (only for **PROFESSIONAL**): The file format must correspond to the that of the export.

- **XML**: The file format must correspond to the that of the export.

Opens the Windows **Open** dialog.

- **Export**

Exports measurement data of the marked measurement series in the following formats:

- **TXT**: The file format corresponds to the settings on the **Data exchange options** dialog.

- **CSV**: Format for import into a spreadsheet program such as Microsoft Excel.

- **XML**

- **MWF4**: Format for import into an earlier version of **HYDROcom**.

- **Easy View**: Format for import into **EASY View**.

Depends on the settings on the **Data exchange options** dialog:

- Saves the data automatically with the original name in the same directory.

- Opens the Windows **Save as** dialog.

- **Export through file selection**

Allows the export of any measurement series that can be selected with the Windows **Open** dialog.

Opens the Windows **Open** dialog.

Exports the measurement data of the selected measurement series in the following formats:

- **TXT**: The file format corresponds to the settings on the **Data exchange options** dialog.
- **CSV**: Format for import into a spreadsheet program such as Microsoft Excel.
- **XML**
- **MWF4**: Format for import into an earlier version of **HYDROcom**.
- **Easy View**: Format for import into *EASY View*.

Depends on the settings on the **Data exchange options** dialog:

- Saves the data automatically with original name in the same directory.
- Opens the Windows **Save as** dialog.

Combine



Combines two measurement series into one measurement series. Saves the new measurement series as MWF file.

1. Opens the Windows dialog **Select first MWF file**.
2. Opens the Windows dialog **Select second MWF file**.
3. Opens the Windows dialog **Save the combined MWF file**.



Measurement series can only be combined if the following parameters are identical:

- Sampling rate
- Trigger settings
- Number of data sets

⇒ **Linking measurement series** on page 101

Folders



Manages the default folders.

- **Format definitions**

Specifies the default folder for format definitions.

- **Presentations**

Specifies the default folder for presentations.

- **Use only selected presentation folder**



Offers the last folder used for saving a presentation. If the function is activated, a check mark (✓) is displayed next to the entry.

Language



Opens the **Language** dialog.

⇒ **Language dialog** on page 286

License



Opens the **License** dialog.

⇒ **License dialog** on page 287

Options



Opens the **Options** dialog.

⇒ **Language dialog** on page 286

Use log file

Activates the log file.



If the function is activated, a check mark (✓) is displayed next to the entry and the log file is kept.

Information is collected in the log file that is important for troubleshooting.

Overwrite

Activates the **Overwrite** function.



If the function is activated, a check mark (✓) is displayed next to the entry.

- **Overwrite** function active:

An existing measurement series in the layout area is deleted when a measurement series is inserted into this layout area.

- **Overwrite** function not active:

All measurement series that are inserted into a layout area are displayed.

The status of the **Overwrite** function is indicated on the status bar.

⇒ **Status bar** on page 153

Shortcut: **Ins**

Help



Displays the help for this menu.

Viewer menu

PROFESSIONAL **ADVANCED** **BASE**

Menu > Viewer

- ⇒ **About the viewer, layouts, and presentations** on page 24
- ⇒ **Creating presentations** on page 34
 - ⇒ **Adding and editing layout areas** on page 34
 - ⇒ **Layout area – inserting data** on page 38
 - ⇒ **Layout area – editing data** on page 50

The **Viewer** menu has the following functions.

Undo



Undoes the last action in the viewer.

Redo



Redoes the last undo step.

Delete



Deletes the marked layout area (not for **BASE**).

Clear content



Deletes the content of the marked layout area.

Copy all elements



Copies the viewer onto the clipboard as graphic.

The graphic can be inserted into another program (e.g. Word).

Expand current element



Enlarges the marked layout area to the size of the working area.

Reduces expanded layout area to initial size.

Line diagram



Inserts a line diagram at the desired position in the viewer.

... With configuration file



Uses a configuration file to insert a line diagram at the desired position in the viewer (not for **BASE**).

Table



Inserts a table at the desired position in the viewer.

... With configuration file



Uses a configuration file to insert a table at the desired position in the viewer.

Text



Inserts a text at the desired position in the viewer (not for **BASE**).

Picture



Inserts a picture at the desired position in the viewer (not for **BASE**).

Histogram



Inserts a histogram at the desired position in the viewer (not for **BASE**).

Classification



Inserts a classification at the desired position in the viewer (only for **PROFESSIONAL**).

Layout



Opens the **Viewer Layout** dialog (not for **BASE**).

⇒ **Viewer layout dialog** on page 300

Help



Displays the help for this menu.

Report menu

PROFESSIONAL

Menu > Report

The **Report** command opens the **Report** application.

⇒ **Report Application** on page 302

EN

? menu

PROFESSIONAL | ADVANCED | BASE

Menu > ?

The **?** has the following functions:

Help

Displays the help.

Hydrotechnik online

Opens the manufacturer's home page.

⇒ **Manufacturer** on page 2

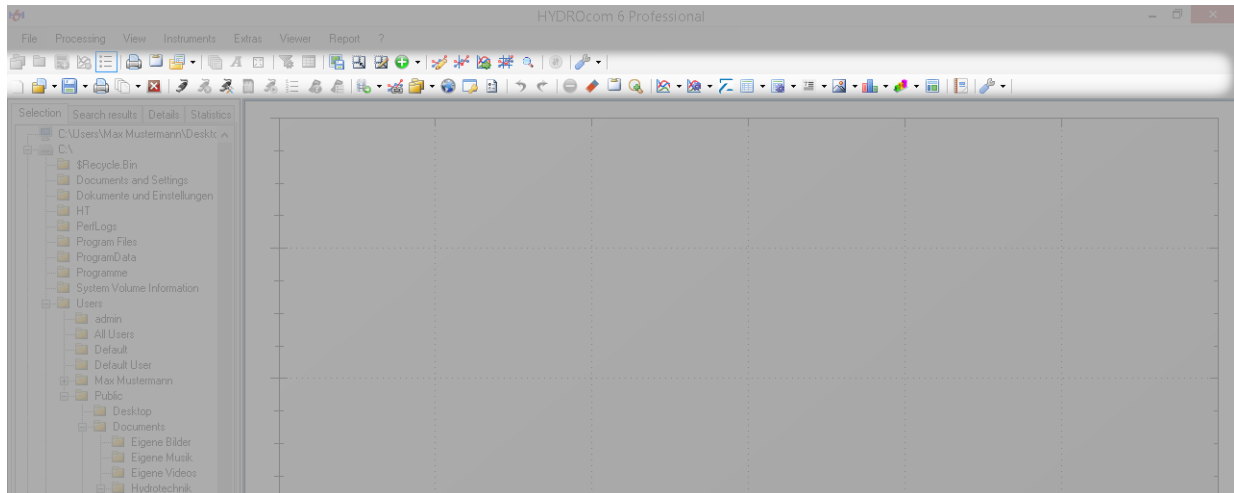
Info

Displays information about the software version and the manufacturer.

Toolbar

PROFESSIONAL ADVANCED BASE

Toolbar



EN

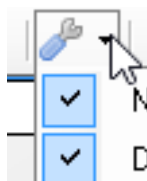
The toolbars allow quick access to many menu functions. The toolbars can be shown and hidden on the **View** menu.

Gray symbols



If a symbol is depicted in gray, this function is not available. Depending on the situation, the action and your license, different functions are available.

Toolbar options



Shows or hides individual icons on the toolbars.

Explorer

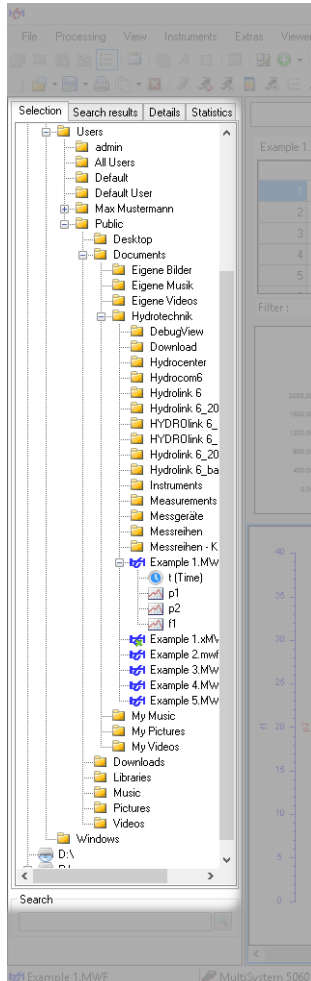
PROFESSIONAL | ADVANCED | BASE

Explorer

The Explorer is the central tool for management of files, search results, and other information. It can be shown and hidden on the **View** menu.

The Explorer consists of the following tabs:

- **Select tab**
- **Search results tab**
- **Details tab**
- **Statistics tab**



Drag & Drop

Measurement series and individual measurement variables can be dragged from the viewer into the Explorer using drag & drop.

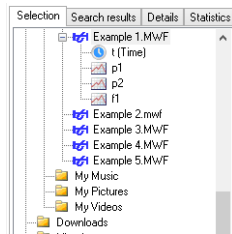
Double-click

With a double-click on a folder, it is refreshed and displayed updated in the Explorer.

Select tab

PROFESSIONAL ADVANCED BASE

Explorer > Select



The **Select** tab displays the directory structure and following files:

- Measurement values (mwf, xmwf)
- Classifications (mwc)

Symbols and files on the Select tab

Example 1.MWF

Measurement value file

Example 1.MWF

Active measurement value file

Example 1.MWF

Marked measurement value file

Example 1.MWF

New measurement value file (max. 10 minutes old)

Example 1.xMWF

Measurement value file as xMWF file

Training3.mwf

Non-readable (damaged) file

t (Zeit)

Time channel of a measurement value file

p1

Measurement channel of a measurement value file

D1.1

Multi-channel of a measurement value file

dp1 (deltaP)

Calculate channel of a measurement value file generated in the software.

Example 1.MWC

MWC file generated from a classification

Tool tip

Tool tips display additional information about elements on the **Select** tab.

Recording from : 16.05.2008 10:22
Channels : p1 p2 f1
Data records : 6000
Scan rate : 10 ms
Recording time : 60 sec
File size : 72 KB
Created : 19.08.2015 11:05:39

Context menu

The context menu displays all functions from the **Processing** menu.

⇒ **Processing menu for the Select tab (Explorer)** on page 127

Search

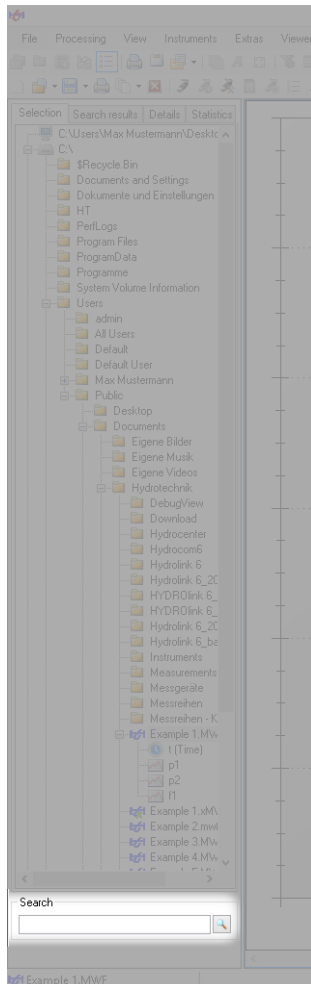
PROFESSIONAL

Search

The search function searches all files in the folder marked on the **Select** tab. The results are displayed on the **Search Results** tab.

⇒ **Select tab** on page 143

⇒ **Search results tab** on page 148



Start search

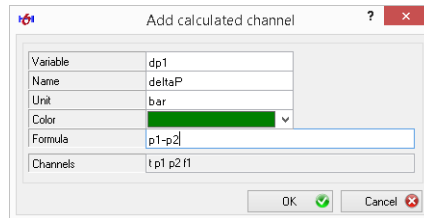


Starts the search in the marked folder on the **Select** tab.

Add Calculated Channel dialog

PROFESSIONAL

Explorer > Select > Add calculated channel (context menu)



On the **Add calculated channel** dialog, you create a calculated channel in a measurement value file.



Measurement value file must be saved

You must save the measurement value file in order to insert the calculated channel. If you do not save the measurement value file, the information is lost when you close the program.

A calculated channel is displayed as regular channel in the presentation. You can create as many calculated channels as you wish. After saving, you can use a calculated channel for other calculated channels.

⇒ **About calculated channels** on page 104

Variable Displays or changes the measurement variable that results from the calculation.
The designation must be two or three digits. The last character must be a number.

Name Displays or changes the name for the calculated channel.

Unit Displays or changes the units for the calculated channel.

Color Displays or changes the color with which the channel is displayed on a line diagram.



Opens the drop-down list to change the color.

Formula Displays or changes the formula for the desired calculation.
⇒ **Use of formulas** on page 146

Channels Displays the channels that are available for the calculation.

Use of formulas

In the formulas, you use mathematical operands to link the measurement variables in the measurement series with other measurement variables or constants.

Measurement variables are always described by one or two letters and a number.

The following table shows which mathematical operands you may use:

Basic arithmetic	Addition (+), Subtraction (–), Division (/), Multiplication (*)
Trigonometry	sin(a), cos(a), tan(a), cot(a) (a) = angle in arc degrees (conversion: Angle degrees = arc degrees * 180 / π) sin°(b), cos°(b), tan°(b), cot°(b) (b) = angle in degrees
Root	sqrt(x)
Decimal logarithm	lg(x), log(x)
Natural logarithm	ln(x)
First derivative	f'(x)

Table: Permissible mathematical operands

⇒ **Processing multi-channels** on page 104

Frequently-used formulas



We have carefully checked the formulas listed here, however we cannot make any guarantees of the correctness of the formulas and the achievement of the intended results. Therefore, check precisely whether the formula in question will produce the correct results.

Designation	Formula	Note
Power	$p1 \cdot Q1 / 600$	p1 = pressure (bar) Q1 = volumetric flow (l/min) P = power (KW)
Power of a cylinder	$p1 \cdot A$	p1 = pressure (bar) A = piston surface of the cylinder (cm ²)
Power of a dual-operating cylinder	$(p1 \cdot A1) - (p2 \cdot A2)$	p1 = pressure (bar) on side 1 of the piston A1 = piston surface (cm ²) on side 1 p2 = pressure (bar) on side 2 of the piston A2 = piston surface (cm ²) on side 2
Speed	$f(s1)$	1st Derivative of the path, measured either with analogue or frequency channel
Engine power	$2 \cdot 3.141592654 \cdot n1 \cdot M1$	n1 = speed (rpm) M1 = torque
Piston speed in cm/min	$Q1 / A$	Q1 = volumetric flow (cm ³ /min) A = piston surface of the cylinder (cm ²)
Piston speed in cm/s	$Q1 / 60 / A$	
Piston speed in mm/s	$Q1 / 6 / A$	
Root	$\sqrt{p1}$	p1 = pressure (bar)

Search results tab

PROFESSIONAL

Explorer > Search results

Selection	Search results	Details	Statistics
File	Found	Value	
090415-1601...	Channels	p1 p...	
090415-1601...	Variable	Q1	
090415-1602...	Channels	p1 p...	
090415-1602...	Variable	Q1	
090415-1607...	Channels	p1 p...	
090415-1607...	Variable	Q1	
160211-1310...	Channels	p1 ...	
160211-1310...	Variable	Q1	
250615-0754...	Channels	p1 p...	
250615-0754...	Variable	Q1	
verknüpft.M...	Channels	p1 p...	

The **Search results** tab displays the result of the last search. The tool tip displays the path and the file name for the point found.

⇒ **Search** on page 144

Context menu

The context menu displays all functions from the **Processing** menu.

⇒ **Processing menu for the Search results tab (Explorer)** on page 129

EN

Details tab

PROFESSIONAL | ADVANCED | BASE

Explorer > Details

Selection Search results Details Statistics	
Example 1.MwF	
Attribute	Value
Company	
Instrument	
Serial number	
Measurement name	Example 1.MwF
Folder	C:\Users\Public\
Name of source file	Example 1.MwF
Recording from	16.05.2008 10.22
Scan rate	10 ms
Recording time	59.99 sec
Data records	6000
Channels	p1 p2 f1
Triggerrecord	1
Trigger settings	
Comment	
p1	
Variable	p1
Unit	bar
Channel name	

The **Details** tab displays information about a measurement series marked on the **Select** tab.

The upper area displays general information about the measurement series. Under that is an area for each channel of the measurement series with additional information.

Context menu

The context menu displays all functions from the **Processing** menu.

⇒ **Processing menu for the Details tab (Explorer)** on page 130

EN

Statistics tab

PROFESSIONAL | ADVANCED | BASE

Explorer > Statistics

Function	Value
p1	
Channel name	
Minimum	-0.40
Maximum	414.26
Mean average	120.47
Quadratic mean	177.53
Standard deviation	130.40
p2	
Channel name	

The **Statistics** tab displays statistical information for all channels marked on the **Select** tab.

Examples of statistical information:

- Channel designation
- Minimum/Maximum
- Average values
- Standard deviation

If the measurement series is active in the layout area as line diagram with spot or difference spot, the current values of the spot lines are also displayed.

Context menu

The context menu displays all functions from the **Processing** menu.

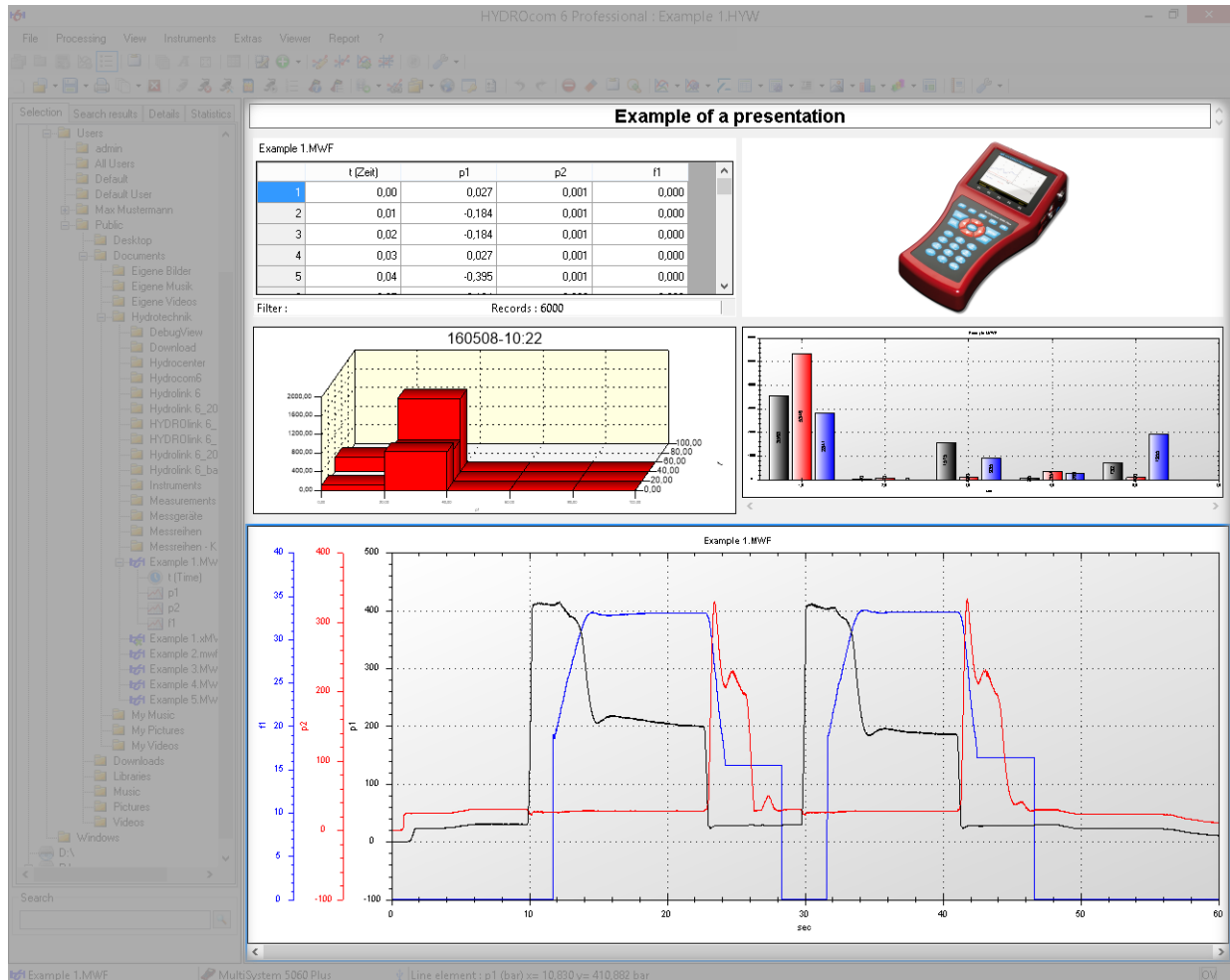
⇒ **Processing menu for the Statistics tab (Explorer)** on page 131

EN

Viewer

PROFESSIONAL ADVANCED BASE

Viewer



In the **Viewer**, you insert the layout areas.

⇒ **About the viewer, layouts, and presentations** on page 24

⇒ **Creating presentations** on page 34

⇒ **Adding and editing layout areas** on page 34

⇒ **Layout area – inserting data** on page 38

⇒ **Layout area – editing data** on page 50

Depending on the software area, you can create different numbers of layout areas:

BASE	1 layout area
ADVANCED	6 layout areas
PROFESSIONAL	24 layout areas

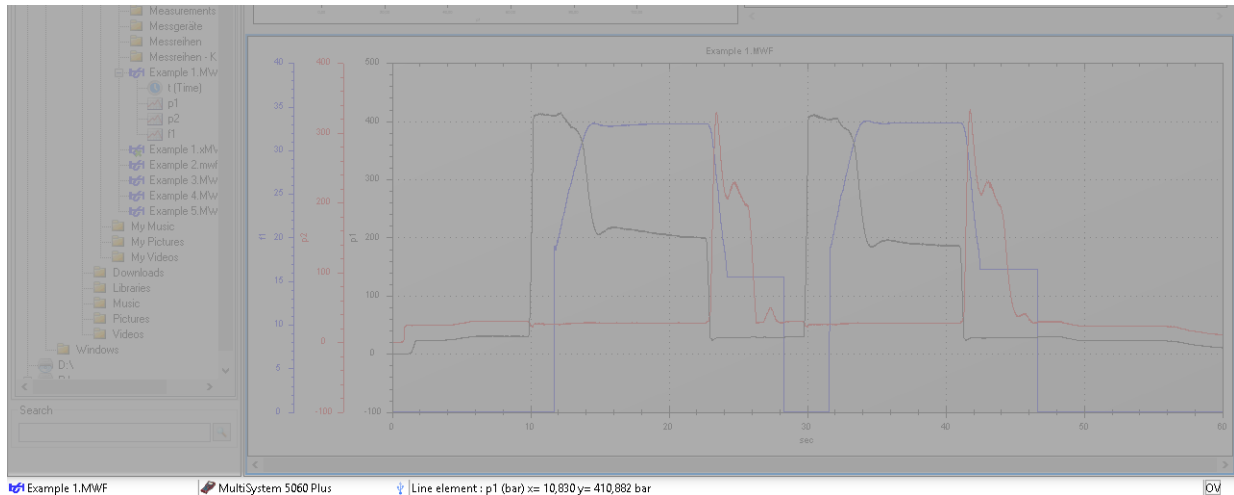
The software offers the following types of layout areas:

- Line diagram
- Table
- Histogram
- Classification
- Picture
- Text

Status bar

PROFESSIONAL | ADVANCED | BASE

Status bar



The status bar is at the lower edge of the program window.

The status bar displays the following information (from left to right):

- Marked element of the explorer
- Connected instrument
- Connection type (symbol)
- Element in the viewer to which the mouse is pointing
- System results
- Overwrite status of the function
⇒ **Overwrite** on page 137

Dialogs

This chapter describes the dialogs in the software.

EN

Dialogs for the Processing menu

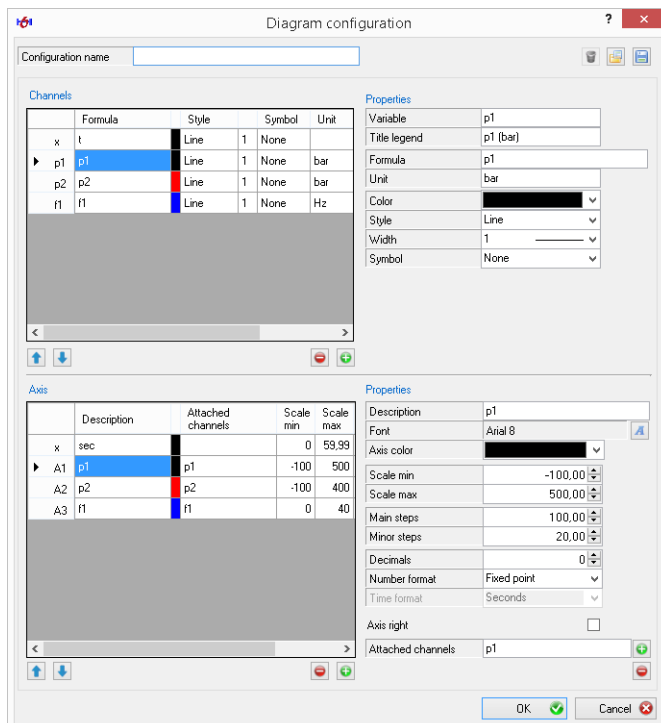
This section contains the description of the dialogs for the **Processing** menu.

Diagram configuration dialog

PROFESSIONAL **ADVANCED**

Menu > Processing (Line Diagram) > Format > New

Menu > Processing (Line Diagram) > Format > Change



On the **Diagram configuration** dialog, you create or change configuration files for line diagrams.

⇒ **How to create a configuration file for line diagrams** on page 92

With configuration files, you ensure that the data is displayed consistently. With configuration files, you can create your presentations more efficiently since you no longer need to format the data individually.

Configuration name

Displays or changes the name of the configuration file.

The name helps you distinguish among several configuration files and to see which configuration file is currently being applied. The name is also suggested as file name when saving the configuration file.

Delete these properties



Deletes the saved configuration file without confirmation. The factory settings are used.

Search for other property files



Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

⇒ **How to assign a configuration file** on page 98

Save these properties as file



Saves the current configuration file.

The properties are saved in a configuration file (*.kbf).

Opens the Windows **Save as** dialog.

⇒ **How to create a configuration file for line diagrams** on page 92

Channels

The channel list displays the defined channels and their sequence (level). The first entry is the X-axis. The following entries are the channels of the line diagram.

Move marked list entry up



Moves the marked channel one level up.

The X-line cannot be moved.

Move marked list entry down



Moves the marked channel one level down.

The X-line cannot be moved.

Remove the marked line except for the “X-line”



Removes the marked channel from the configuration. The channel is not displayed in the line diagram.

The X-line cannot be removed.

Insert a new line into the list



Creates a new channel at the end of the channel list.

Each channel must be linked to an axis.

Properties area

The **Properties** area displays the properties of the marked channel. You can change the properties.

For the X-axis, you can only change the properties **Formula** and **Color**.

Variable Displays or changes the description of the variable.

The description can consist of two or three characters. The description must begin with a letter and include a number. Example: t1, dp2

The description is displayed as name of the curve on the **Line diagram properties** dialog.

⇒ **Elements tab** on page 167

Title legend Displays or changes the title of the channel in the legend.

Formula Displays or changes the formula for the channel.

Channels from the channel list can be used as variables of the formula.

⇒ **Use of formulas** on page 146

Unit Displays or changes the unit of the channel.

Color Displays the color for the curve.



Opens the drop-down list for changing the curve color.

Style Displays the style of the curve.



Opens the drop-down list for changing the curve style.

Width Displays the width of the curve.



Opens the drop-down list for changing the curve width.

Symbol Displays the symbol with which the curve is drawn.



Opens the drop-down list for changing the curve symbols.

Axis

The axis list displays the defined axes and their sequence (level). The first entry is the X-axis.

Move marked list entry up



Moves the marked axis one level up.

The X-axis cannot be moved.

Move marked list entry down



Moves the marked axis one level down.

The X-axis cannot be moved.

Removes the marked axis except for the X-axis



Removes the marked channel from the configuration. The axis is not displayed on the line diagram.

The X-axis cannot be removed. There must be at least one Y-axis.

Insert a new axis into the list



Creates a new axis at the end of the axis list.

Properties area

The **Properties** area displays the properties for the marked axis. You can change the properties.

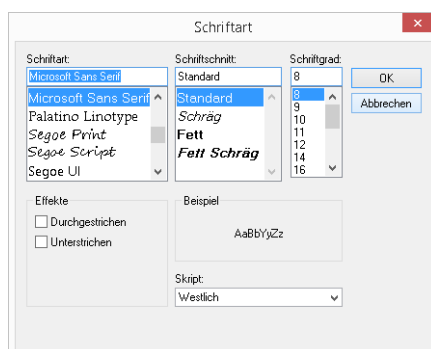
Description Displays or changes the description of the axis.

The description is displayed as name of the axis on the **Line diagram properties** dialog.

⇒ **Elements tab** on page 167

Font Displays the font for the axis labeling.

Opens the Windows **Font** dialog to format the font.



Axis color Displays the color for the axis, axis labeling, and line.



Opens the drop-down list for changing the axis color.

Scale min Displays or changes the lower end value of the axis scale.

Scale max Displays or changes the upper end value of the axis scale.

Main steps Displays or changes the distance of the main scaling. The main scaling is labeled with scale values if the **Display values** function is activated.

⇒ **Show values** on page 171

Minor steps Displays or changes the distance of the fine scaling.

Decimals Displays or changes the number of decimal places of the scaling values.

Number format Changes the number format of the scaling values.



Opens the drop-down list for changing the number format.

Time format Displays the time format of the X-axis.



Opens the drop-down list for changing the time format.

Axis right ☒ Displays the axis on the right side of the line diagram.
☐ Displays the axis on the left side of the line diagram.

Attached channels Displays the channels linked to the axis.

Each channel must be linked to an axis.

Add a channel



Opens a selection of the channels not linked to this axis.

Click on the desired channel to link it to the axis.

Remove a linked channel



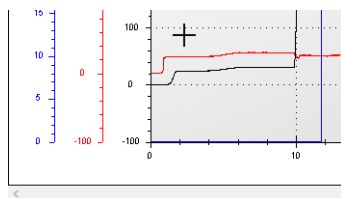
Opens a selection of all channels linked to this axis.

Click on the desired channel to delete it from the linking.

Line diagram properties dialog

PROFESSIONAL | ADVANCED | BASE

Viewer > Line Diagram > Data Area > Double-click



Double-click in the data area of the line diagram to open the **Line diagram properties** dialog. Make sure not to click on a line or axis.

⇒ **How to format the line diagram** on page 52

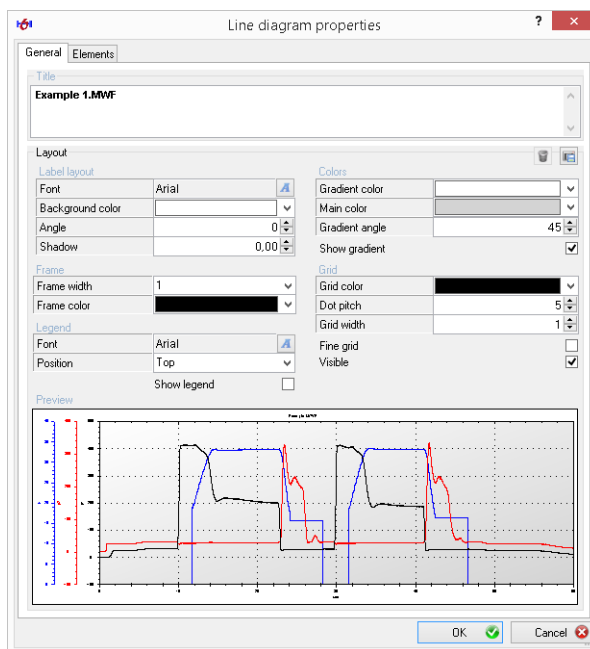
The **Line diagram properties** dialog consists of the following tabs:

- **General tab**
- **Elements tab**

General tab

PROFESSIONAL **ADVANCED** **BASE**

Viewer > Line Diagram > Data Area > Double-click > General



On the top of the **General** tab, there are settings for changing the appearance of the line diagram. Underneath, the preview shows the effect of the settings.

⇒ **How to format the line diagram** on page 52

Title Displays the name of the measurement value file. You can change the title. The text field displays the changes that you make in the **Title** field right away.

⇒ **Title area** on page 163

Delete these properties



Deletes the saved default properties. The factory settings are used.

Save these properties as default



Saves the current properties as default.

All new layout areas with line diagrams have these properties.

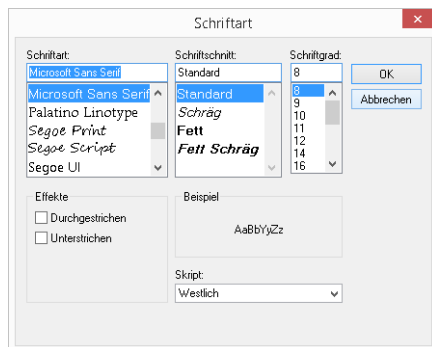
Title area

In the **Title** area, you change the display of the title.

Font Displays the font of the title.



Opens the Windows **Font** dialog to format the font.



Background color Displays the background color of the title.



Opens the drop-down list for changing the background color.

Angle Displays or changes the angle of the title.

Shadow Displays or changes the shading of the title.

Frame area

In the **Frame** area, you change the frame of the line diagram.

Frame width Displays or changes the width of the frame.

Frame width = 0 means that there is no frame displayed.

Frame color Displays the color for the frame of the line diagram.



Opens the drop-down list for changing the frame color.

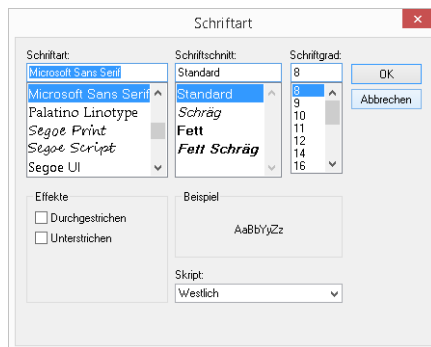
Legend area

In the **Legend** area, you change the display of the legend of the line diagram.

Font Displays the font of the legend.



Opens the Windows **Font** dialog to format the font.



Position Displays the position of the legend on the line diagram.



Opens the drop-down list for changing the position.

Show legend ☒ Displays the legend on the line diagram.
☐ Displays no legend on the line diagram.

Colors area

In the **Colors** area, you change the background color of the line diagram. It is possible to use a single-color background or a color gradient.

Gradient color Displays the gradient color for the background of the line diagram. The color gradient is only used if the **Show gradient** check box is activated.



Opens the drop-down list for changing the gradient color.

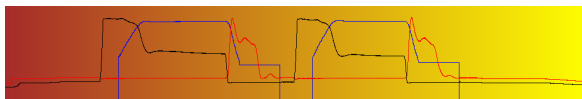
Main color Displays the main color for the background of the line diagram.



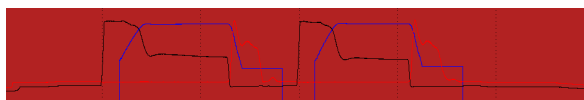
Opens the drop-down list for changing the main color.

Gradient angle Displays or changes the angle of the color gradient. The color gradient is only used if the **Show gradient** check box is activated.

Show gradient ☒ The background of the line diagram is displayed with color gradient.



☐ The background of the line diagram is displayed in a single color with the main color.



Grid area

In the **Grid** area, you change the grid of the line diagram. The grid consists of dotted lines. You can change the distance and size of the points.

Grid color Displays the color for the grid of the line diagram.



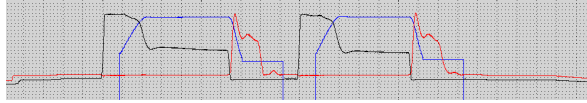
Opens the drop-down list for changing the grid color.

Dot pitch Displays or changes the dot pitch of the dotted grid lines.

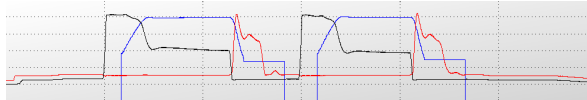
Point distance = 0 means solid grid lines.

Grid width Displays or changes the grid width of the dotted grid lines. For solid grid lines, the grid width corresponds to the line width.

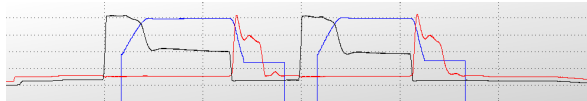
- Fine grid** ☒ Displays the line diagram with fine grid. The check box can only be activated if the **Display grid** check box is activated.



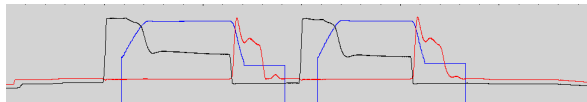
- ☐ Displays the line diagram without fine grid.



- Visible** ☒ Displays the line diagram with grid.



- ☐ Displays the line diagram without grid.



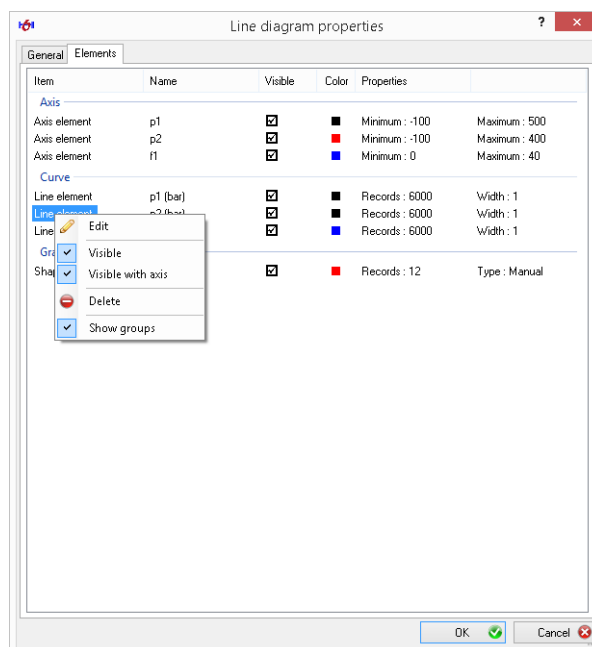
Preview area

The **Preview** area displays the changes that you have made on the **General** tab immediately.

Elements tab

PROFESSIONAL **ADVANCED** **BASE**

Viewer > Line Diagram > Data Area > Double-click > Elements



On the **Elements** tab, the elements of the line diagram are formatted. The elements can be divided into the following groups:

- Axes
- Curves
- Graphic elements
- Spot

Table

Type Displays the type of the element.

Name Displays the name of the element. Optional.

Visible ☒ Indicates that the element is visible in the line diagram.
☒ Indicates that the element is not visible in the line diagram.

This check box is only an indicator. You change the visibility on the context menu or with a double-click on the element in the **Type** column.

⇒ **Context menu** on page 168

Color Displays the color of the element.

Properties Displays properties of the element.

Context menu

A right-click on an element displays the context menu.

Edit Opens the properties dialog for the element.

- ⇒ **Axis properties dialog** on page 169
- ⇒ **Line Properties dialog** on page 173
- ⇒ **Text properties dialog** on page 224
- ⇒ **Picture properties dialog** on page 228
- ⇒ **Arrow properties dialog** on page 230
- ⇒ **Frame dialog** on page 232

Visible ☒ Displays the element in the line diagram.
☐ Does not display the element in the line diagram.

Visible with axis ☒ Displays the line and axis in the line diagram.
☐ Does not display the line and axis in the line diagram.
 To display the line without axis, activate the **Visible** check box.
 Command is only available for curves or line elements.

Delete Deletes the element from the line diagram.

Show groups ☒ Groups the elements in the view.
☐ Removes the grouping of the elements in the view.

Axis properties dialog

PROFESSIONAL **ADVANCED** **BASE**

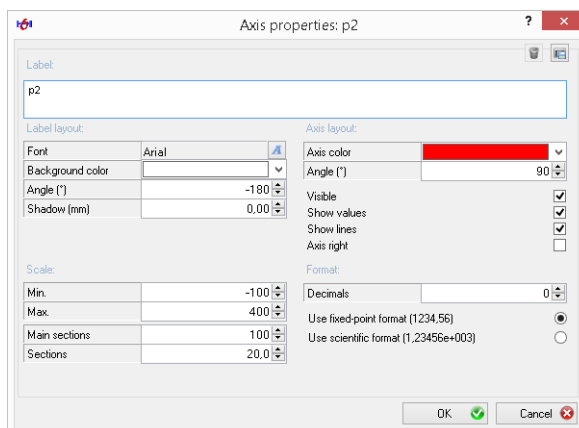
Viewer > Line Diagram > Axis > Double-click

Viewer > Histogram > Axis > Double-click

Viewer > Line Diagram > Line diagram properties > Elements > Edit

Viewer > Histogram > Line diagram properties > Elements > Edit

EN



For each axis of a line diagram or histogram, the **Axis properties** dialog can be displayed. An axis can be formatted with this dialog.

⇒ **How to format the line diagram** on page 52

Delete these properties



Deletes the saved default axis properties. The factory settings are used.

Save these properties as default



Saves the current axis properties as default for the line properties for the selected channel.

⇒ **Line Properties dialog** on page 173

All new layout areas with line diagram or histogram will have these properties.

Label

Displays or changes the labeling of the axes.

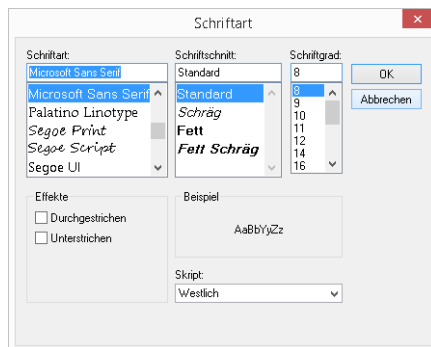
The channel name from the measurement value file is used as default setting.

Label area

In the **Label** area, you change the display of the axis labeling.

Font Displays the font for the axis labeling.

Opens the Windows **Font** dialog to format the font.



Background color Displays the background color for the axis labeling.



Opens the drop-down list for changing the background color.

Angle Displays or changes the angle of the axis labeling.

Shadow Displays or changes the shading of the axis labeling.

Axis layout area

In the **Axis Layout** area, you change the formatting of the axes.

Axis color Displays the color for the axis, axis labeling, and line.



Opens the drop-down list for changing the axis color.

⇒ For line diagrams, the same function as **Color** on the **Line Properties** dialog.

Color on page 173

Angle Displays or changes the angle of the scaling values.

- Visible** ☒ Displays the axes.
☐ Does not display the axes.
 If the axis is not displayed, you can no longer open the [Axis properties](#) dialog with a double-click on the axis. On the [Elements](#) tab, [Line diagram properties](#), or [Histogram](#) dialog, you can display the axes again.
 ⇒ **Elements tab** on page 167
 ⇒ **Elements tab** on page 204

- Show values** ☒ Displays the scaling values on the axes.
☐ Displays no scaling values on the axes.

- Show lines** ☒ Displays the axis line.
☐ Displays no axis line.

- Axis right** ☒ Displays the axis on the right side of the line diagram/histogram.
☐ Does not display the axis on the left side of the line diagram/histogram.

Scale area

In the [Scale](#) area, you change the scaling of the axes.
 Make sure that the decimal points of the scale fit the scaling.
 ⇒ **Decimals** on page 172

Min. Displays or changes the lower end value of the axis scale.

Max. Displays or changes the upper end value of the axis scale.

Main sections Displays or changes the distance of the main scaling. The main scale is labeled with scaling values if the [Display Values](#) function is activated.
 ⇒ **Show values** on page 171

Sections Displays or changes the distance of the fine scaling.

Format area

in the **Format** area, you change the formatting of the scale values.

Decimals Displays or changes the number of decimal places of the scaling values.

Use fixed-point format Changes the style of the scaling values.

Scientific format Displays the time format of the X-axis (only for **PROFESSIONAL**).

Is only displayed if the X-axis was selected.



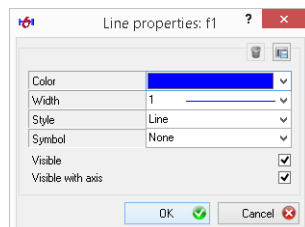
Opens the drop-down list for changing the time format.

Line Properties dialog

PROFESSIONAL **ADVANCED** **BASE**

Viewer > Line Diagram > Line > Double-click

Viewer > Line Diagram > Line diagram properties > Elements > Edit



For each line of a line diagram, the **Line properties** dialog can be displayed. Use this dialog to format a line.

⇒ **How to format the line diagram** on page 52

Delete these properties



Deletes the saved default line properties. The factory settings are used.

Save these properties as default



Saves the current line properties as default for the selected channel.

All new lines of the same channel (example: p2) have these properties.

Color Displays the color for the axis, axis labeling, and line.



Opens the drop-down list for changing the axis color.

⇒ Same function as **Axis Color** on the **Axis properties** dialog.
Axis color on page 170

Width Displays the width of the line.



Opens the drop-down list for changing the line width.

Style Displays the style of the line.



Opens the drop-down list for changing the line style.

Symbol Displays the symbol for the line.



Opens the drop-down list for changing the line symbols.

Visible ☒ Displays the line on the line diagram.

☐ Does not display the line on the line diagram.

If the line is not displayed, you can no longer open the [Line Properties](#) dialog with a double-click. On the [Elements](#) tab, [Line diagram properties](#) dialog, the line can be shown again.

⇒ **Elements tab** on page 167

Visible with axis ☒ Displays the line and axis in the line diagram.

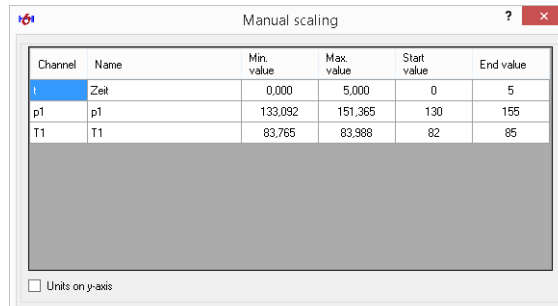
☐ Does not display the line and axis in the line diagram.

To display the line without axis, activate the [Visible](#) check box.

Manual scaling dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Processing (Line Diagram) > Manual scaling



On the **Manual scaling** dialog, you scale the current line diagram. Alternatively, you can use the **Automatic scaling** function.

⇒ **Automatic scaling** on page 114

Scaling is the dimensioning of the line diagram. By scaling, you can enlarge or reduce the size of a line diagram. It is possible that all values will then no longer be displayed.

⇒ **How to scale the line diagram** on page 54

If the **Options > Line Diagram > Axis Scaling > Manual** is activated, then the dialog is always displayed when creating a line diagram.

⇒ **Options dialog > Line diagram tab > Axis scaling area > Manual** on page 296

Channel Displays the channel.

Name Displays the channel name. The field can be edited.
The channel name is used as axis description in the line diagram.

Min. value Displays the minimum data value of the channel.

Max. value Displays the maximum data value of the channel.

Start value Specify the **Start value** of the axes. If the value is greater than the **Min. value**, not all data values will be displayed on the line diagram.

The last value of a manual scaling is pre-set.

End value Specify the **End value** of the axes. if the value is smaller than the **Max. value**, not all data values are displayed on the line diagram.

The last value of a manual scaling is pre-set.

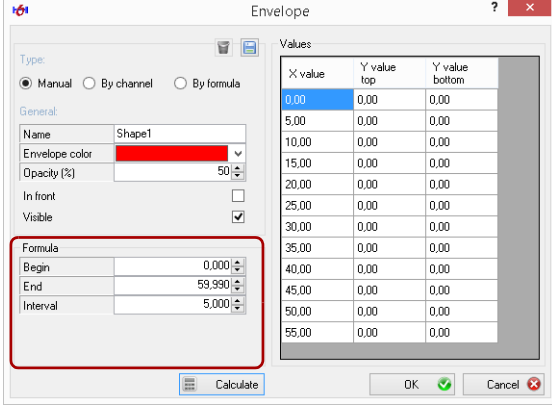
Units on y-axis In addition to the axis description, shows the unit in brackets ().

Envelope dialog

PROFESSIONAL

Menu > Processing (Line Diagram) > Envelope > New

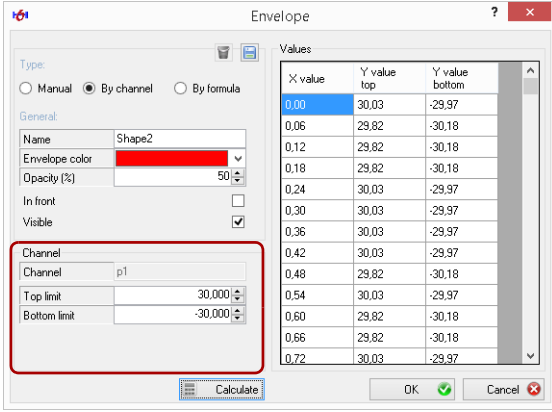
Viewer > Line Diagram > Line diagram properties > Elements > Edit



The 'Envelope' dialog box is shown with the 'Manual' type selected. The 'General' section includes fields for Name (Shape1), Envelope color (red), Opacity (%) (50), In front (unchecked), and Visible (checked). The 'Formula' section, highlighted with a red box, contains fields for Begin (0.000), End (59.990), and Interval (5.000). The 'Values' table on the right lists X values from 0.00 to 55.00 in increments of 5.00, with corresponding Y values (top and bottom) all set to 0.00. A 'Calculate' button is at the bottom left, and 'OK' and 'Cancel' buttons are at the bottom right.

X value	Y value top	Y value bottom
0.00	0.00	0.00
5.00	0.00	0.00
10.00	0.00	0.00
15.00	0.00	0.00
20.00	0.00	0.00
25.00	0.00	0.00
30.00	0.00	0.00
35.00	0.00	0.00
40.00	0.00	0.00
45.00	0.00	0.00
50.00	0.00	0.00
55.00	0.00	0.00

Image: Envelope dialog, Manual type



The 'Envelope' dialog box is shown with the 'By channel' type selected. The 'General' section includes fields for Name (Shape2), Envelope color (red), Opacity (%) (50), In front (unchecked), and Visible (checked). The 'Channel' section, highlighted with a red box, contains fields for Channel (p1), Top limit (30.000), and Bottom limit (-30.000). The 'Values' table on the right lists X values from 0.00 to 0.72 in increments of 0.06, with corresponding Y values (top and bottom) alternating between 30.03 and 29.82. A 'Calculate' button is at the bottom left, and 'OK' and 'Cancel' buttons are at the bottom right.

X value	Y value top	Y value bottom
0.00	30.03	-29.97
0.06	29.82	-30.18
0.12	29.82	-30.18
0.18	29.82	-30.18
0.24	30.03	-29.97
0.30	30.03	-29.97
0.36	30.03	-29.97
0.42	30.03	-29.97
0.48	29.82	-30.18
0.54	30.03	-29.97
0.60	29.82	-30.18
0.66	29.82	-30.18
0.72	30.03	-29.97

Image: Envelope dialog, Channel type

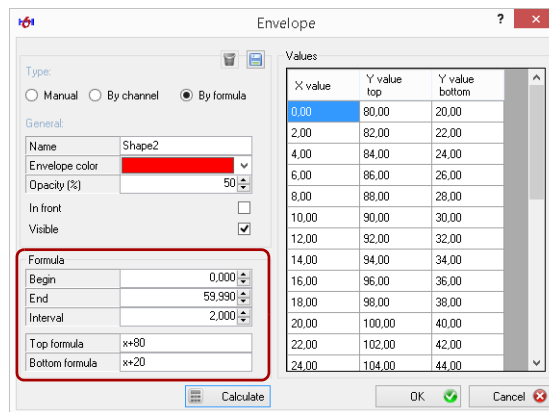


Image: Envelope dialog, Formula type

On the **Envelope** dialog, you create or edit envelopes.

You can use envelopes in order to display a particular variance graphically on the line diagram. You can move envelopes on the line diagram with the mouse.

On the left side, you define the properties of the envelope. Click the **Calculate** button to display the X and Y-values of the envelope on the right side. You can change each Y-value in the **Values** area.

⇒ **Operation, Envelope** on page 57

Delete these properties



Deletes the configuration file of the envelope.

Only the configuration file can be deleted that was previously opened or saved.

Save these properties as file



Opens the Windows **Save as** dialog.

Saves the current properties of the envelope in a configuration file.

The properties can be used to generate new envelopes.

⇒ **Shapecurve** on page 115


Type area

Select the type that specifies how the envelope will be calculated. For each type, different fields are displayed in the bottom area.

- Manual** The envelope will be defined manually.
Enter the Y-values for the upper and lower limit of the envelope.
⇒ **Values area** on page 180
- By channel** The envelope is defined around the line of the first channel.
⇒ **Channel area** on page 179
- By formula** The envelope is defined as function (x).
⇒ **Formula area** on page 179

General area

In the **General** area, you change the description and display of the envelope.

- Name** Displays the name of the envelope. The field can be edited.
- Envelope color** Displays the color for the envelope.
 Opens the drop-down list for changing the envelope color.
- Opacity (%)** Displays or changes the opacity of the envelope.
- In front** ☒ Displays the envelope over the diagram. For this, lower opacity is advantageous.
☐ Displays the envelope next to the diagram. The curve is easy to see even with high opacity.
- Visible** ☒ Displays the envelope in the line diagram.
☐ Does not display the envelope in the line diagram.
If the envelope is not displayed, you can no longer open the **Envelope** dialog with a double-click on the line. On the **Elements** tab, **Line diagram properties** dialog, the envelope can be shown again.
⇒ **Elements tab** on page 167

Formula area

The **Formula** area is displayed if type **Manual** or **Formula** is selected.

⇒ **Type area** on page 178

- Begin** Displays or changes starting point of the envelope on the X-axis.
- End** Displays or changes end point of the envelope on the X-axis.
- Interval** Displays or changes distance of the limit points of the envelope.
Example: The value 5,000 means that limit points are defined every 5 seconds.
- Top limit** Displays or changes the formula for the upper limit of the envelope (only type **Formula**).
Only **x** (time) is permitted as variable.
Example: $x+80$
- Bottom limit** Displays or changes the formula for the lower limit of the envelope (only type **Formula**).
Only **x** (time) is permitted as variable.
Example: $x+20$

Channel area

The **Channel** area is displayed if the type **Channel** is selected.

⇒ **Type area** on page 178

- Channel** Displays the channel that is used as basis of the envelope. The first channel is used. The value cannot be changed.
- Top limit** Displays or changes the distance of the upper limit to the values of the channel.
- Bottom limit** Displays or changes the distance of the lower limit to the values of the channel.

Values area

The **Values** area displays the upper and lower Y-values of the envelope.

The values are only displayed after the **Calculate** button has been clicked. The X and Y-values arise from the settings in the areas **Type**, **General**, **Formula**, and **Channel**.

You can change each Y-value. You can add or remove lines with the context menu.

⇒ **Calculate** on page 180

EN

Buttons area

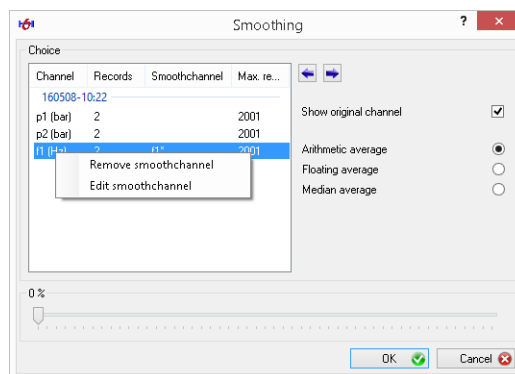
Calculate Calculates the X- and Y-values of the envelope and displays these in the **Values** area.

With the type **Manual** the Y-values are not calculated. The cells for the Y-values are filled with **0.000**. Change the Y-values.

Smoothing dialog

PROFESSIONAL **ADVANCED**

Menu > Processing > Smoothing



On the **Smoothing** dialog, you smooth one or several lines in a line diagram through averaging.

If a measurement value line appears faded, you can smooth it through averaging.

⇒ **How to smooth curves** on page 56

Choice area

In the **Choice** area, you select the channels and the method of averaging.

The **Choice** area consists of the left channel table and the functions on the left side.

The channel table displays all channels of the line diagram. You can mark one or several channels for smoothing. There is a context menu in the channel table.

Channel Name of the channel from the measurement value file.

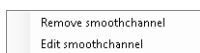
Records Number of measurement points that are used for the averaging.

The more measurement points are used for the averaging, the smoother the line.

Smoothchannel Name of the smoothed channel.

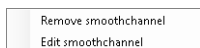
Max. records Maximum number of measurement points that can be used for the averaging.

Remove smoothchannel (context menu)



Deletes the marked smoothed channels.

Edit smoothchannel (context menu)



Opens the [Line Properties](#) dialog for formatting the smoothed line.

⇒ [Line Properties dialog](#) on page 173

Reduce/increase the number of data records for the smoothing

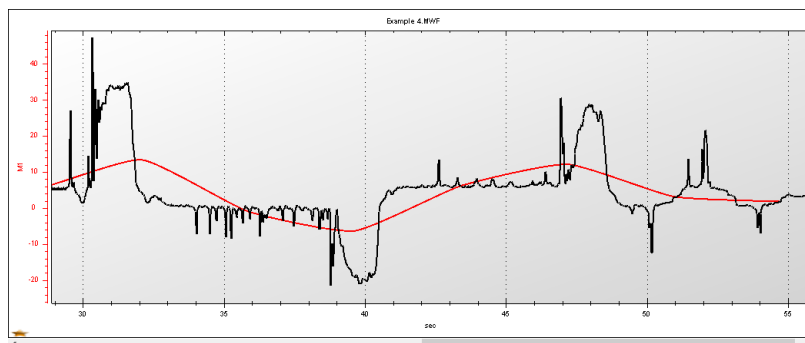


Reduces or increases the value [Records](#) by one counter value.

The [Records](#) value is reduced or increased by one in the channel table. The slider [%](#) is adjusted accordingly. The smoothed line is displayed in the line diagram.

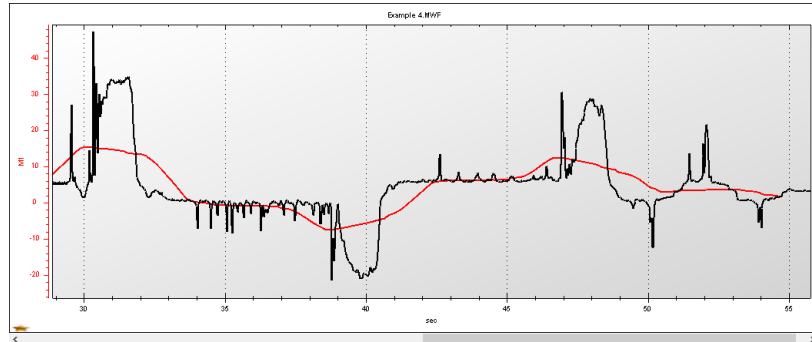
Show original channel ☒ Displays the non-smoothed and smoothed lines in the line diagram.
☐ Displays only the smoothed lines in the line diagram.

Arithmetic average A defined number of values is added up and then divided by the number of values. The defined number of values is thus reduced to a value.



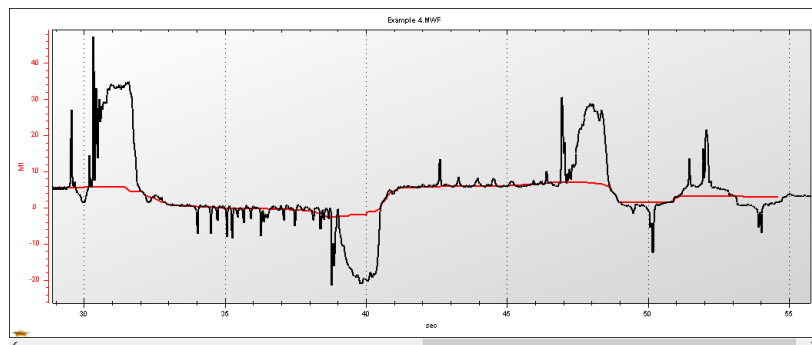
The data quantity is reduced with this averaging.

Floating average An average value is calculated for each value. For this, a defined number of values before and after this value is added up and then divided by the number of values (only for **PROFESSIONAL**).



The data quantity hardly changes with this averaging.

Median average The minimum and maximum values are struck from a defined number of values. The average is formed from the remaining values. The defined number of values is thus reduced to a value (only for **PROFESSIONAL**).



The data quantity hardly changes with this averaging.

Smoothing percentage area

The **Smoothing percentage** area has a double function:

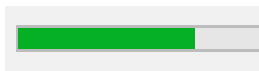
- Slider %
- Progress bar

Slider bar %



Reduces or increases the percentage of the **Data records** value.

Progress bar



The progress bar displays the calculation progress for the averaging.

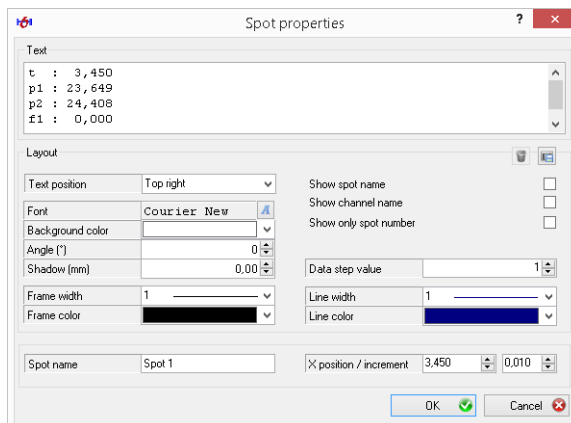
The averaging requires computing power and may require time. The more channels are smoothed and the more complex the averaging is, the longer the calculation takes.

Spot properties dialog

PROFESSIONAL | ADVANCED

Viewer > Line Diagram > Spot Line > Double-click

Viewer > Line Diagram > Line diagram properties > Elements > Edit



On the **Spot properties** dialog, you change the properties of spot lines.

A spot line is a vertical line on the line diagram and marks a measurement point. The associated measurement values are displayed on the value window.

You can move the spot line and the value window with the mouse.

You can insert several spot lines into a line diagram. You can display the spot values in a table.

⇒ **How to create a spot line** on page 63

⇒ **Creating a table with spot values** on page 46

Text area

The **Text** area displays the content (measurement values) of the value window. This field cannot be edited.

Layout area

In the **Layout** area, you change the display and content of the value window for the spot line.

Delete these properties



Deletes the default spot line properties. The factory settings are used.

Save these properties as file



Saves the current spot line properties as default.

All new spot lines receive these properties.

Text position

Displays the position of the value window.



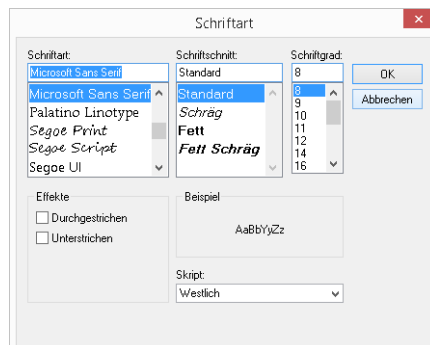
Opens the drop-down list for changing the position of the value window. The value window can be anchored with the spot line or positioned manually.

Font

Displays the font in the value window.



Opens the Windows **Font** dialog to format the font.



The default font is *Courier New*. With *Courier New*, all characters are the same width. Thus the measurement values are displayed aligned vertically.

Background color

Displays the background color of the value window.



Opens the drop-down list for changing the background color.

Angle

Displays or changes the angle of the value window.

Shadow

Displays or changes the shading of the font in the value window.

Frame width Displays or changes the width for the frame of the value window.

Width = 0 means that there is no frame displayed.

Frame color Displays the color for the frame of the value window.



Opens the drop-down list for changing the frame color.

Show spot name ☒ Displays the name of the spot line in the value window as title.

☐ Displays no title on the value window.

⇒ **Spot name** on page 187

Show channel name ☒ Displays the axis title in front of the measurement values.

⇒ **Description** on page 159

☐ Displays the variables in front of the measurement values.

⇒ **Variable** on page 157

Show only spot number ☒ Displays only the number of the spot line. No measurement values are displayed in the value window.

☐ Displays the value window.

Data step value Spot lines can be moved step by step with the keys **Page↑** and **Page↓**. Displays or changes the number of measurement points by which the spot line is moved.

Line width Displays or changes the width of the spot line.

Line color Displays the color of the spot line.



Opens the drop-down list for changing the spot line color.

Spot area

In the Spot area, you can change the name and position of the spot line.

Spot name Displays or changes the name of the spot line. The name can be displayed on the value window.

X position Displays or changes the measurement point of the spot line.

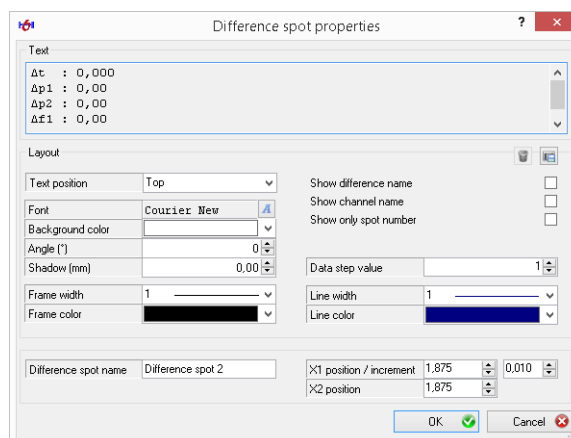
Increment Displays or changes the step width for moving the spot line.

Difference spot properties dialog

PROFESSIONAL | ADVANCED

Viewer > Line Diagram > Difference Spot Line > Double-click

Viewer > Line Diagram > Line diagram properties > Elements > Edit



On the **Difference spot properties** dialog, you change the properties of difference spot lines.

A difference spot consists of two spot lines and a value window. The value window displays the Delta value from the two spot lines.

You can move the spot lines and value window with the mouse.

You can insert several difference spots into a line diagram. You can display the difference spot values in a table.

⇒ **How to create a difference spot** on page 64

⇒ **Creating a table with spot values** on page 46

Text area

The **Text** area displays the content (Delta values) of the value window. This field cannot be edited.

Layout area

In the **Layout** area, you change the display and content of the value window for the spot line.

Delete these properties



Deletes the saved default difference spot properties. The factory settings are used.

Save these properties as default



Saves the current difference spot properties as default.

All new difference spots receive these properties.

Text position

Displays the position of the value window.



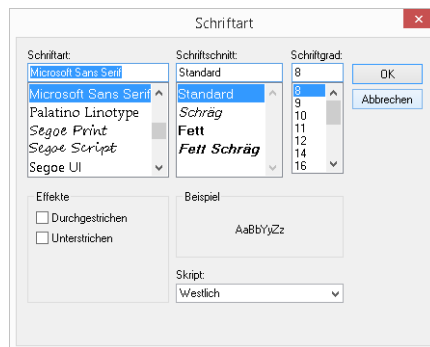
Opens the drop-down list for changing the position of the value window. The value window can be anchored between the two difference spot lines or positioned manually.

Font

Displays the font in the value window.



Opens the Windows **Font** dialog to format the font.



The default font is *Courier New*. With *Courier New*, all characters are the same width. Thus the measurement values are displayed aligned vertically.

Background color

Displays the background color of the value window.



Opens the drop-down list for changing the background color.

Angle

Displays or changes the angle of the value window.

Shadow

Displays or changes the shading of the font in the value window.

Frame width Displays or changes the width for the frame of the value window.

Width = 0 means that there is no frame displayed.

Frame color Displays the color for the frame of the value window.



Opens the drop-down list for changing the frame color.

Show difference name ☒ Displays the name of the difference spot on the value window as title.

☐ Displays no title on the value window.

⇒ **Difference spot name** on page 190

Show channel name ☒ Displays the axis title in front of the Delta values.

⇒ **Description** on page 159

☐ Displays the variables in front of the Delta values.

⇒ **Variable** on page 157

Show only spot number ☒ Displays only the number of the difference spot line. No Delta values are displayed in the value window.

☐ Displays the value window.

Data step value Difference spot lines can be moved step by step with the keys **Page↑** and **Page↓**. Displays or changes the number of measurement points by which the difference spot lines are moved.

Line width Displays or changes the width of the difference spot lines.

Line color Displays the color for the difference spot lines.



Opens the drop-down list for changing the difference spot line color.

Difference spot area

In the Difference spot area, you can change the names and position of the difference spot lines.

Difference spot name Displays or changes the name of the difference spot. The name can be displayed on the value window.

X1 position Displays or changes the measurement point of the first difference spot line.

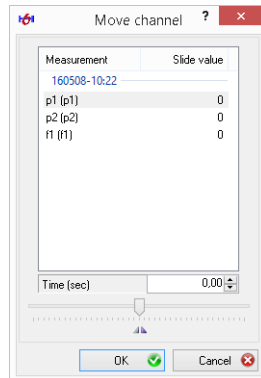
Increment Displays or changes the step width for moving the difference spot lines.

X2 position Displays or changes the measurement point of the second difference spot line.

Move channel dialog

PROFESSIONAL **ADVANCED**

Menu > Processing > Move



With the **Move channel** dialog you move curves of the line diagram on the X-axis.

⇒ **How to move curves** on page 55

Measurement series Displays all channels of the line diagram.

You can move a single, several, or all channels to the right and left. To do this, mark the desired channels.

Slide value Displays the value by which the channel is moved on the X-axis.

Time (sec) Displays or changes the value by which all marked channels are moved on the X-axis.

Slider



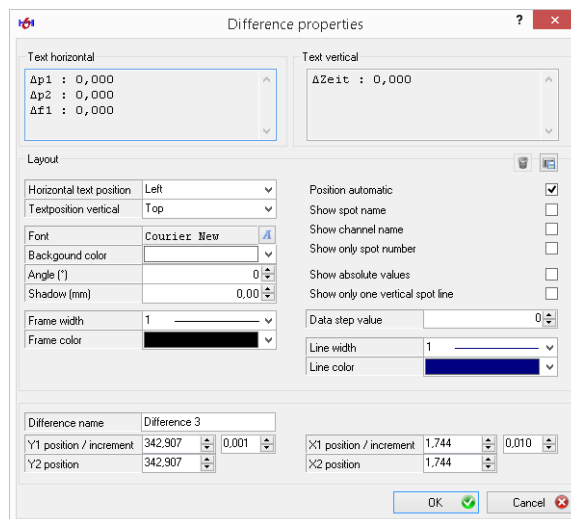
Changes the value by which all marked channels are moved on the X-axis.

Difference properties dialog

PROFESSIONAL

Viewer > Line Diagram > Difference > Double-click

Viewer > Line Diagram > Line diagram properties > Elements > Edit



On the **Difference properties** dialog, you change the properties of difference measurement lines.

For the analysis of data, you can display a horizontal and vertical measurement line pair. From the measurement line pairs, the difference between two curve positions is displayed for each channel on value windows.

You can move the difference measurement lines and the value windows with the mouse.

You can insert several difference measurements into a line diagram. You can display the spot values in a table.

⇒ **How to create a difference measurement** on page 66

⇒ **Creating a table with spot values** on page 46

Text horizontal area

The **Text horizontal** area displays the content of the value window for the Y-axis. This field cannot be edited.

Text vertical area

The **Text vertical** area displays the content of the value window for the X-axis. This field cannot be edited.

Layout area

In the **Layout** area, you change the display and content of the value window.

Delete these properties



Deletes the saved default difference properties. The factory settings are used.

Save these properties as default



Saves the current difference properties as default.

All new differences receive these properties.

Horizontal text position



Displays the position of the value window for the Y-axis.

Opens the drop-down list for changing the position.

The value window can be moved freely with the mouse.

The drop-down list can only be selected if the **Automatic position** check box is activated.

⇒ **Position automatic** on page 194

Text position vertical



Displays the position of the value window for the X-axis.

Opens the drop-down list for changing the position.

The value window can be moved freely with the mouse.

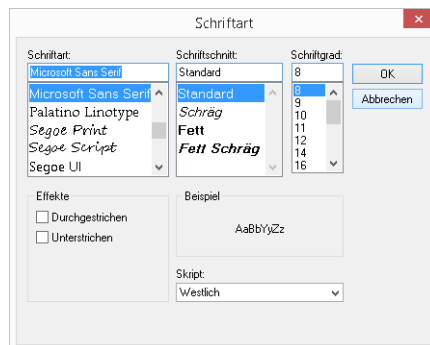
The drop-down list can only be selected if the **Automatic position** check box is activated.

⇒ **Position automatic** on page 194

Font Displays the font on the value windows.



Opens the Windows **Font** dialog to format the font.



Background color Displays the background color of the value window.



Opens the drop-down list for changing the background color.

Angle Displays or changes the angle of the value window.

Shadow Displays or changes the shading of the font on the value windows.

Frame width Displays or changes the width for the frame of the value window.

Width = 0 means that there is no frame displayed.

Frame color Displays the color for the frame of the value window.



Opens the drop-down list for changing the frame color.

Position automatic ☒ Anchors the value window on the difference measurement lines. The position can be changed with the **Horizontal text position** and **Vertical text position** drop-down lists.

☐ The value windows can only be positioned with the mouse.

Show spot name ☒ Displays the name of the difference measurement in the value windows as title.

☐ Displays no title on the value windows.


⇒ **Difference name** on page 195

Show channel name ☒ Displays the axis title in front of difference values.

⇒ **Description** on page 159

☐ Displays the variables in front of the difference values.

⇒ **Variable** on page 157

Show only spot number	<input checked="" type="checkbox"/> Displays only the number of the vertical difference measurement lines. No value windows are displayed. <input type="checkbox"/> Displays the value windows.
Show absolute values	<input checked="" type="checkbox"/> Displays only the values for the respective difference measurement line. Use this setting for $f_{(x)}$ displays. <input type="checkbox"/> Displays the difference values.
Show only one vertical spot line	<input checked="" type="checkbox"/> Displays only the vertical difference measurement line for X2. Use this setting for $f_{(x)}$ displays. <input type="checkbox"/> Displays all measurement lines.
Data step value	Difference measurement lines can only be moved step by step with the keys Page↑ and Page↓ . Displays or changes the number of measurement points by which the difference measurement lines are moved.
Line width	Displays or changes the width of the difference measurement lines.
Line color	Displays the color for the difference measurement lines.
	Opens the drop-down list for changing the color of the difference measurement lines.

Difference area

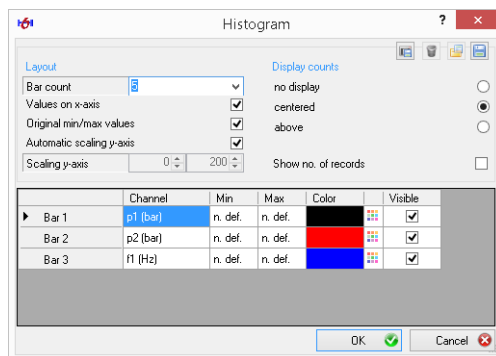
In the Difference area, you can change the name and position of the difference measurement.

Difference name	Displays or changes the name of the difference measurement. The name can be displayed on the value window.
Y1 position	Displays or changes the Y-position of the first difference measurement lines. The value refers to the channel of the first Y-axis.
Increment	Displays or changes the step width for moving the horizontal difference measurement lines.
Y2 position	Displays or changes the Y-position of the second difference measurement lines. The value refers to the channel of the first Y-axis.
X1 position	Displays or changes the X-position of the first difference measurement lines.
Increment	Displays or changes the step values for moving the vertical difference measurement lines.
X2 position	Displays or changes the X-position of the second difference measurement lines.

Histogram (bars) dialog

PROFESSIONAL ADVANCED

Menu > Processing (Histogram) > Format > Change
Viewer > Histogram > One of the bars > Double-click



On this **Histogram** dialog, you specify the properties for display of the bars on the one hand. On the other hand, you create or change configuration files for histograms.

The properties for the histogram are specified in a configuration file. These properties can be applied to other histograms.

With configuration files, you ensure that the data is displayed consistently. With configuration files, you can create your presentations more efficiently since you no longer need to format the data individually.

⇒ **How to create a histogram** on page 41

Save these properties as default



Saves the current properties as default.

All new histograms receive these properties.

Delete these properties



Deletes the saved configuration file without confirmation. The factory settings are used.

Search for other property files



Selects a configuration file and applies it on this dialog.

Opens the Windows **Open** dialog.

Save these properties as file



Saves the current properties as configuration file.

The properties are saved in a configuration file (*.hic).

Opens the Windows **Save as** dialog.

Layout area

In the [Layout](#) area, you set the scaling of the histogram.

Bar count Displays or changes the number of areas for which the frequency distribution is mapped.



Opens the drop-down list for changing the number of areas.

Values on X-axis ☒ Displays only the numbers of the areas on the X-axis.
☐ Displays the actual value ranges.

Original min/max values ☒ Determines the minimal and maximal values from the measurement data and maps the histogram automatically.
☐ Does not determine the minimal and maximal values from the measurement data automatically.

You specify minimal and maximal values in the table. In this case, it may be that not all measurement values are taken over into the histogram.

Automatic scaling Y-axis ☒ Scales the Y-axis automatically.
☐ Does not scale the Y-axis automatically.

You adjust the scale of the Y-axis yourself in the [Scaling Y-axis](#) fields.

Scaling Y-axis Sets the scaling of the Y-axis if the [Scale Y-axis automatically](#) check box is not activated.

Display counts area

In the [Display counts](#) area, you can show and hide frequency values and the number of data records in the histogram.

no display Frequency values are not displayed.


centered Displays the frequency values per bar in the center.

above Displays the frequency values per bar over the bar.

Show no. of records ☒ Displays the number of data records as text field in the histogram.
☐ Does not display the number of data records.

Histogram bar area

The **Bar** area of the histogram indicates which bar is assigned to which channel and basic parameters about each bar.

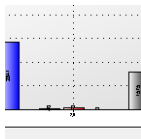
- Channel** Indicates which channel is assigned to this bar.
- Min** Displays the smallest value of this bar.
- Max** Displays the largest value of this bar.
- Color** Displays or changes the color of this bar.
-  Opens the drop-down list for changing the bar color.
- Visible** ☒ Displays this bar on the histogram.
☐ Does not display this bar on the histogram.

EN

Histogram dialog (background and elements)

PROFESSIONAL **ADVANCED**

Viewer > histogram > Background > Double-click



On the **Histogram** dialog, you specify properties for the display of the background.

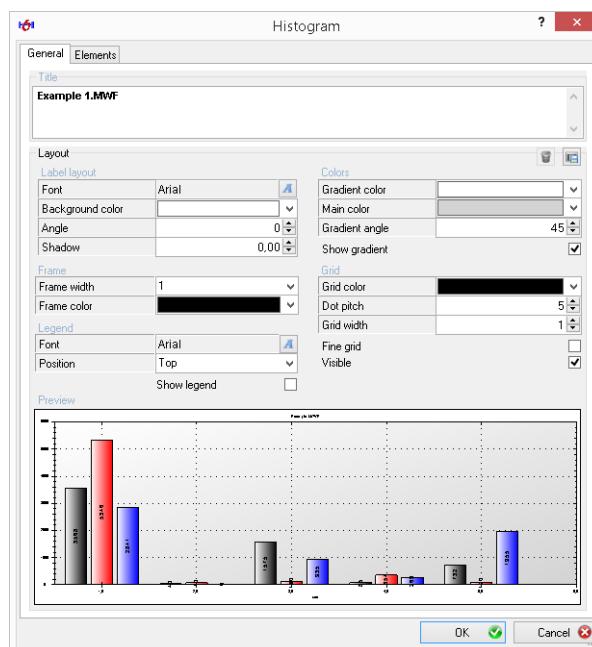
The **Histogram** dialog consists of the following tabs:

- **General tab**
- **Elements tab**

General tab

PROFESSIONAL | ADVANCED

Viewer > Histogram > Background > Double-click > General



On the top area of the **General** tab, there are settings for changing the appearance of the histogram. Underneath, the preview shows the effect of the settings.

⇒ **Histogram** on page 68

Title Displays the name of the measurement value file. You can change the title. The text field displays the changes that you make in the **Labeling** field right away.

⇒ **Label layout area** on page 200

Delete these properties

Deletes the saved default properties. The factory settings are used.

Save these properties as default

Saves the current properties as default.

All new layout area with histograms receive these properties.

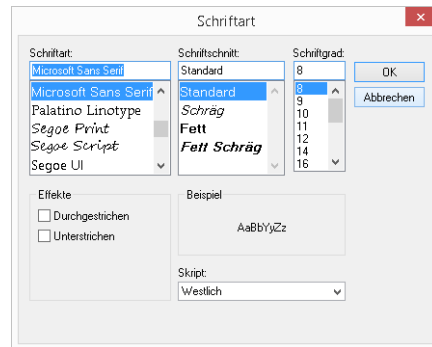
Label layout area

In the **Label layout** area, you change the display of the title.

Font Displays the font of the title.



Opens the Windows **Font** dialog to format the font.



Background color Displays the background color of the title.



Opens the drop-down list for changing the background color.

Angle Displays or changes the angle of the title.

Shadow Displays or changes the shading of the title.

Frame area

In the **Frame** area, you change the frame of the histogram.

Frame width Displays or changes the width of the frame.

Width = 0 means that there is no frame displayed.

Frame color Displays the color for the frame of the histogram.



Opens the drop-down list for changing the frame color.

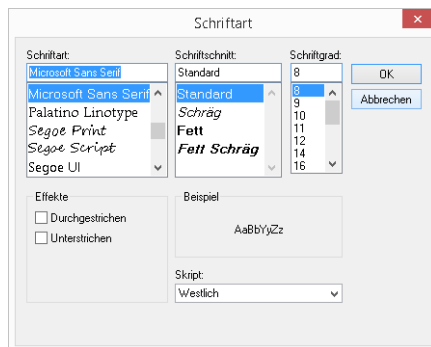
Legend area

In the **Legend** area, you change the display of the legend of the histogram.

Font Displays the font of the legend.



Opens the Windows **Font** dialog to format the font.



Position Displays the position of the legend on the histogram.



Opens the drop-down list for changing the position.

Display legend ☒ Displays the legend on the histogram.
☐ Does not display the legend on the histogram.

Colors area

In the **Colors** area, you change the background color of the histogram. It is possible to use a single-color background or a color gradient.

Gradient color Displays the gradient color for the background of the histogram. The color gradient is only used if the **Display gradient** check box is activated.



Opens the drop-down list for changing the gradient color.

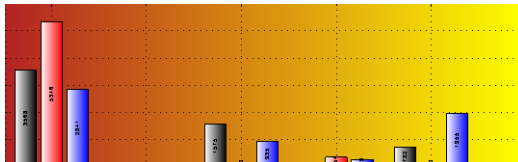
Main color Displays the main color for the background of the histogram.



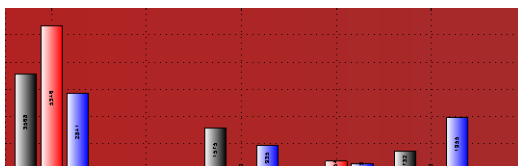
Opens the drop-down list for changing the main color.

Gradient angle Displays or changes the angle of the color gradient. The color gradient is only used if the **Display gradient** check box is activated.

Show gradient ☒ The background of the histogram is displayed with color gradient.



☐ The background of the histogram is displayed in a single color with the main color.



Grid area

On the **Grid** area, you change the grid of the histogram. The grid consists of dotted lines. You can change the distance and size of the points.

Grid color Displays the color for the grid of the histogram.



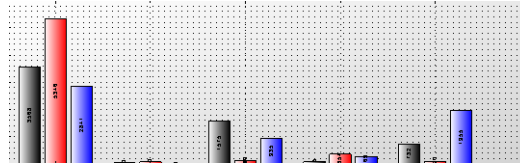
Opens the drop-down list for changing the grid color.

Dot pitch Displays or changes the dot pitch of the dotted grid lines.

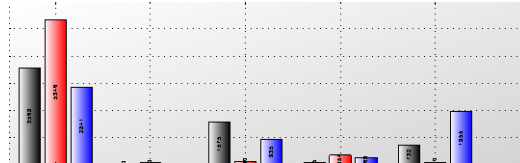
Dot pitch = 0 means solid grid lines.

Grid width Displays or changes the point size of the dotted grid lines. For solid grid lines, the point width corresponds to the line width.

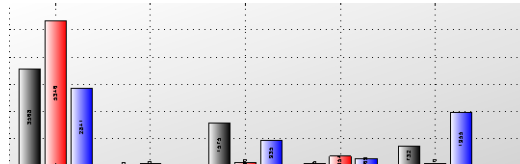
Fine grid ☒ Displays the histogram with fine grid. The check box can only be activated if the **Display grid** check box is activated.



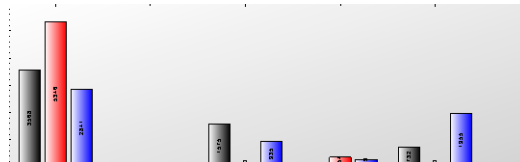
☐ Displays the histogram without fine grid.



Visible ☒ Displays the histogram with grid.



☐ Displays the histogram without grid.



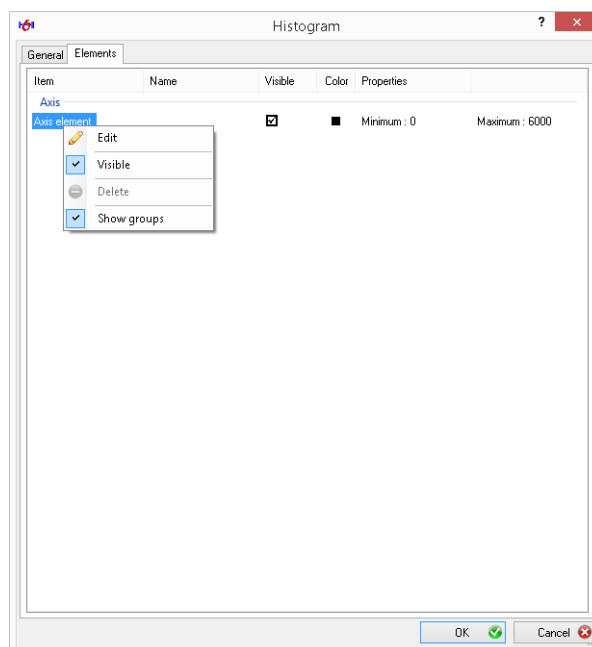
Preview area

The **Preview** area displays the changes that you have made on the **General** tab immediately.

Elements tab

PROFESSIONAL | ADVANCED

Viewer > Histogram > Background > Double-click > Elements



On the **Elements** tab, the elements of the histogram are formatted. The elements can be divided into the following groups:

- Axes
 - Graphic elements (example: Text element, arrow element)
- ⇒ **Inserting and editing elements** on page 77

Table

Type Displays the type of the element.

Name Displays the name of the element. Is optional.

Visible ☒ Indicates that the element is visible on the histogram.

☒ Indicates that the element is not visible on the histogram.

This check box is only an indicator. You change the visibility on the context menu or with a double-click on the element in the **Type** column.

⇒ **Context menu** on page 168

Color Displays the color of the element.

Properties Displays properties of the element.

Context menu

A right-click on an element displays the context menu.

Edit Opens the properties dialog for the element.

⇒ **Axis properties dialog** on page 169

⇒ **Text properties dialog** on page 224

⇒ **Picture properties dialog** on page 228

⇒ **Arrow properties dialog** on page 230

⇒ **Frame dialog** on page 232

Visible ☒ Displays the element on the histogram.

☐ Does not display the element on the histogram.

Delete Deletes the element from the histogram.

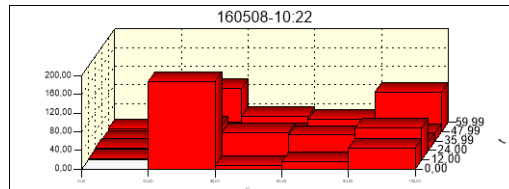
Show groups ☒ Groups the elements in the view.

☐ Removes the grouping of the elements in the view.

Classification definition dialog

PROFESSIONAL

Menu > Processing (Classification) > Format > Change



Classifications are three-dimensional histograms. Classifications form classes and display the frequency of the measurement values per class. However, in contrast to the histogram, the classes are divided into time classes.

⇒ **Classification** on page 71

Classifications can only display a measurement channel.

The Classification dialog consists of the following tabs:

- **Classification method tab**
- **Layout coordinates/axes area**
- **Layout bars tab**

Save these properties as default



Saves the current properties as default.

All new classifications receive these properties.

Delete these properties



Deletes the saved configuration file without confirmation. The factory settings are used.

Search for other property files



Selects a configuration file and applies it on this dialog.

Opens the Windows **Open** dialog.

⇒ **How to assign a configuration file** on page 98

Save these properties as file



Saves the current properties as configuration file.

The properties are saved in a configuration file (*.hyc).

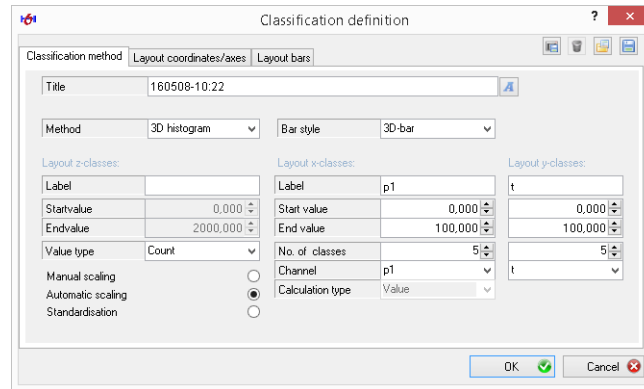
Opens the Windows **Save as** dialog.

⇒ **How to create a configuration file for classifications** on page 95

Classification method tab

PROFESSIONAL

Menu > Processing (Classification) > Format > Change > Classification method

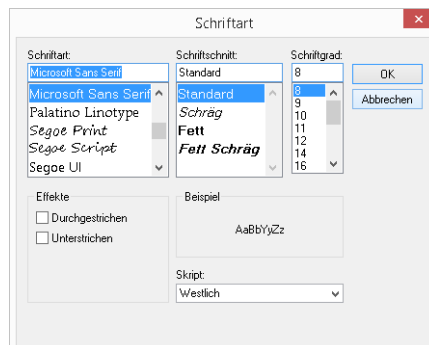


On the **Classification method** tab, you configure the three dimensions of the classification.

Title Displays or changes the title of the classification. The title is displayed over the classification. The default setting is the name of the measurement series.



Opens the Windows **Font** dialog to format the font.



Method Displays the type of classification used.



Opens the drop-down list to change the classification type.

- **3D histogram**

Frequency distribution in an x/y matrix.

- **Average value calculation**

Frequency distribution of the distances to the average value in an x/y matrix.

(Spanning-average value process)

- **Markov**

Display of sequential relative extremes in an x/y matrix.

Bar style Displays the style used for the display of the bars.



Opens the drop-down list for changing the bar style.

Layout z-classes area

On the **Z-classification layout** area, you change the display of the Z-axis.

Label Displays or changes the labeling of the Z-axis.

No default setting.

Start value Displays or changes the lower limit value of the Z-axis.

Z-values that are smaller than the start value are not displayed.

Value can only be set if the **Scale manually** option is selected.

⇒ **Manual scaling** on page 209

End value Displays or changes the upper limit value of the Z-axis.

Z-values that are greater than the end value are not displayed.

Value can only be set if the **Scale manually** option is selected.

⇒ **Manual scaling** on page 209

Value type Displays the value type of the Z-axis used.



Opens the drop-down list to change the value type.

- **Number**

Displays the frequency of the values within a class.

- **Average value**

Displays the average value of all values within a class.

Manual scaling Permits the manual scaling of the Z-axis. The start value and end value fields can be set.
⇒ **Start value** on page 208
⇒ **End value** on page 208

Automatic scaling Automatically adjusts the scaling to the values determined.

Standardisation Scales the Z-axis in percentage.

EN

Layout x-classes area

In the **Layout x-classes** area, you change the display of the X-axis.

Label Displays or changes the labeling of the X-axis.
The name of the measurement unit is pre-set.

Start value Displays or changes the lower limit value of the X-axis.
Classes with smaller values than the start value are not displayed.

End value Displays or changes the upper limit value of the X-axis.
Classes with larger values than the end value are not displayed.

No. of classes Displays or changes the number of classes into which the values of the channel are divided.

Channel Displays the channel that is used for the X-axis.



Opens the drop-down list for changing the channel.

Calculation type Displays the calculation type for the average value calculation.

The **Calculation type** can only be changed if the **Method Average deviation** was selected.



Opens the drop-down list for changing the calculation types:

- **Values**
Displays the actual values of the frequency distribution.
- **Percent**
Displays the percentage distribution.

Layout y-classes area

in the [Layout y-classes](#) area, you change the display of the Y-axis.

Label Displays or changes the labeling of the Y-axis.
The name of the measurement unit is pre-set.

Start value Displays or changes the lower limit value of the Y-axis.
Classes with smaller values than the start value are not displayed.

End value Displays or changes the upper limit value of the Y-axis.
Classes with larger values than the end value are not displayed.

No. of classes Displays or changes the number of classes into which the values of the channel are divided.

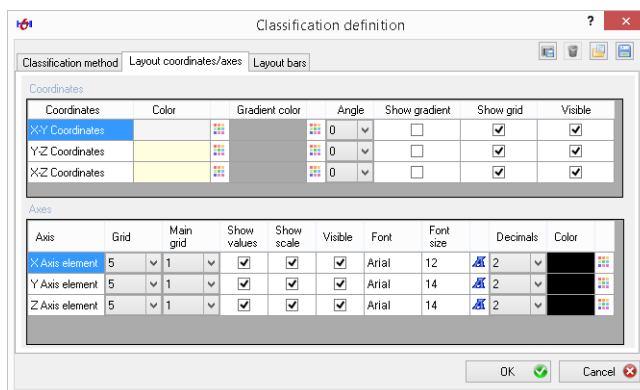
Channel Displays the channel that is used for the Y-axis.
Opens the drop-down list for changing the channel.



Layout coordinates/axes area

PROFESSIONAL

Menu > Processing (Classification) > Format > Change > Layout coordinates/axes



On the **Layout coordinate/axes** tab, you change the display of the coordinate system and axes.

Coordinates area

In the **Coordinates** area, you change the display of the coordinate systems.

Name Displays the name of the coordinate system.

There are three coordinate systems: X-Y, Y-Z, X-Z coordinate system.

Color Displays the color of the coordinate system.



Opens the drop-down list for changing the color.

Gradient color Displays the gradient color for the coordinate system. The color gradient is only used if the **Display gradient** check box is activated.



Opens the drop-down list for changing the gradient color.

Angle Displays the angle of the color gradient. The color gradient is only used if the **Display gradient** check box is activated.



Opens the drop-down list for changing the angle.

Show gradient ☒ The coordinate system is displayed with color gradient.
☐ The coordinate system is displayed in one color in the **Color**.

Show grid ☒ Displays the coordinate system with grid.
☐ Displays the coordinate system without grid.

Visible ☒ Displays the coordinate system.
☐ Does not display the coordinate system.

Axes area

In the **Axes** area, you change the display of the axis elements.

Name Displays the name of the axis element.
 There are three axes: X, Y, Z axis element.

Grid Displays the total number of grid lines displayed for the axis.



Opens the drop-down list for changing the total number of grid lines displayed for the axis.

Main grid Displays which grid lines are labeled with scale values. The scale values are only displayed if the **Display values** check box is activated.

Example: 2 means that each second grid line is labeled with a scale value.



Opens the drop-down list for changing the main grid.

Show values ☒ Displays the scale values on the main grid.
☐ Displays no scale values.

Show scale ☒ Displays scale markings on the main grid.
☐ Does not display any scale markings.

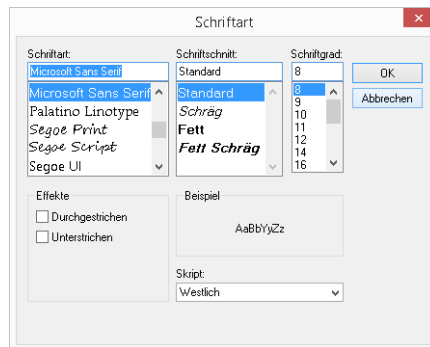
Visible ☒ Displays the coordinate system.
☐ Does not display the coordinate system.

Font Displays the font for the scale values.

Font size Displays the font size for the scale values.



Opens the Windows **Font** dialog to format the font.



Decimals Displays the number of decimal places of the scale values.



Opens the drop-down list for changing the decimal places.

Color Displays the font color of the scale values.

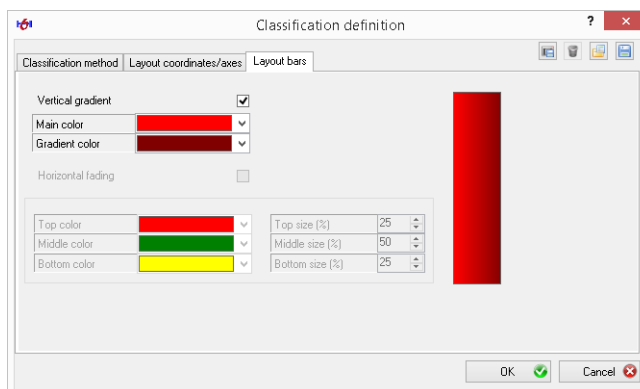


Opens the drop-down list for changing the font color.

Layout bars tab

PROFESSIONAL

Menu > Processing (Classification) > Format > Change > Layout bars



On the **Layout bars** tab, you configure the display of the bars in the classification.

The right side displays a preview of the selected settings.

- Vertical gradient**
- ☒ Displays the bars with vertical gradient. **Main color** and **Gradient color** can be changed.
The check box can only be activated if the **Horizontal gradient** check box is not activated.
 - ☐ Displays the bars without vertical color gradient.
If the **Horizontal gradient** check box is also not activated, then the bars are displayed in one color in the **Main color**.

Main color Displays the main color.

If the **Vertical gradient** and **Horizontal gradient** are not activated, then the bars are displayed in one color in this **Bar color**.

If the **Vertical gradient** check box is activated, then the **Bar color** is the left color of the color gradient.



Opens the drop-down list for changing the bar color.

Gradient color Displays the vertical gradient color for the bars. The color gradient is only used if the **Vertical gradient** is activated.



Opens the drop-down list for changing the gradient color.

Horizontal gradient

- ☒ Displays the bars with horizontal color gradient.

The bars are divided into three sections. Each section is assigned a color. The check box can only be activated if the **Vertical gradient** check box is not activated.

- ☐ Displays the bars without horizontal color gradient.

If the **Vertical gradient** check box is also not activated, the bars are displayed in one color in the **Bar color**.

Colors and sections area

In the Colors and sections area, you specify the percentage size of the three sections and assign each section a color.

Top, Middle, Bottom color

Displays the color for the respective section of the bars.



Opens the drop-down list for changing the section color.

Top, Middle, Bottom size (%)

Displays or changes the percentage of the respective section.

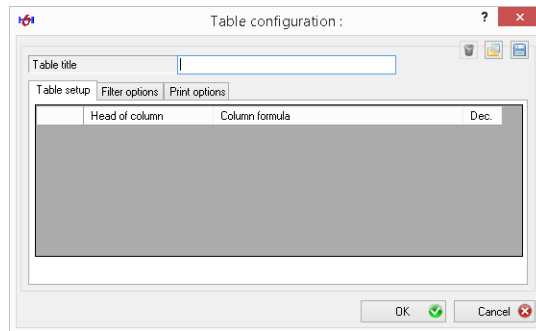
The value for the middle section cannot be changed; it arises from the two other values.

Table configuration dialog

PROFESSIONAL **ADVANCED**

Menu > Processing (Table) > Format > New

Menu > Processing (Table) > Format > Change



On the **Table definition** dialog, you change the configuration files for tables and compact tables, filter a table, or change the print output of the table.

The **Table definition** dialog consists of the following tabs:

- **Options tabs**
- **Filter options tab**
- **Compact table tab**
- **Print options tab**

The **Table definition** dialog does not always show all tabs.

- ⇒ **How to create a table with measurement values** on page 43
- ⇒ **How to create a table with statistical data** on page 45
- ⇒ **How to create a table with spot values** on page 46

EN

Delete these properties



Deletes the saved configuration file without confirmation. The factory settings are used.

Search for other property files



Selects a configuration file and applies it to the layout area.

Opens the Windows **Open** dialog.

Save these properties as file



Saves the current configuration file.

The properties are saved in a configuration file (*.tbf).

Opens the Windows **Save as** dialog.

Head of column

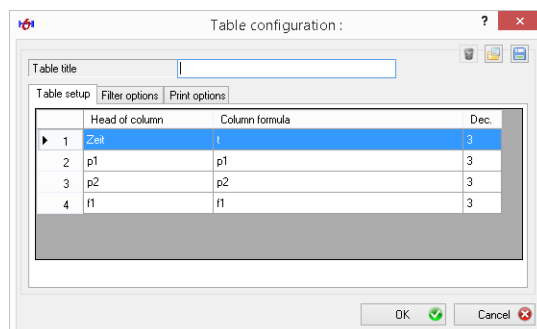
Displays or changes the table title. The table title is displayed over the table.

Options tabs

PROFESSIONAL ADVANCED

Menu > Processing (Table) > Format > New > Options

Menu > Processing (Table) > Format > Change > Options



You change the columns and rows of the table on the **Options** tab.

1st column Displays the number or position of the column.

Head of column Displays or changes the title for the column. The title is displayed in brackets () in the header.

Column formula Displays or changes the calculation of the cell values. Possible are individual channels of the measurement series or formulas in connection with channels. The column formula is displayed in front of the brackets () in the header.

Examples for channels: p1, f1, t

Examples for formulas: p2-p1, p1*Q1/600

Dec. Displays or changes the number of decimal places.

Context menu

A right-click in the table displays the context menu.

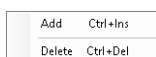
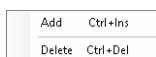
Add

Adds a new entry for a column.

You have to fill out the fields **Column header** and **Column formula**.

Delete

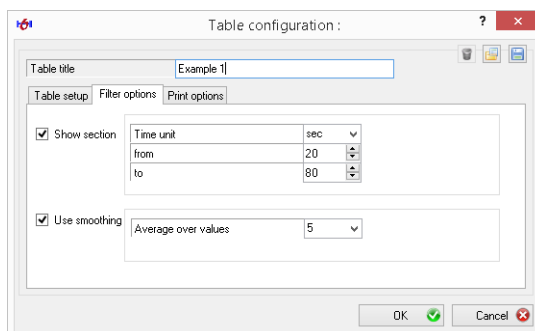
Deletes a new entry for a column. Deletes the column from the table.



Filter options tab

PROFESSIONAL **ADVANCED**

Menu > Processing (Table) > Filter options



On the **Filter options** tab, you can limit the area displayed and smooth the values with averaging.

Section area

In the Section area, you limit the area of the measurement series displayed.

- Show section**
- ☒ The fields **Time unit**, **from** and **to** can be edited. The table shows only values for the specified area.
 - ☐ All values are displayed in the table. The fields **Time unit**, **from** and **to** cannot be edited.

Time unit Displays the time unit to which the values **from** and **to** refer.



Opens the drop-down list for changing the time unit.

from Displays or changes the start time. The table only displays values that are after the start time.

to Displays or changes the end time. The table only displays values that are before the end time.

Smoothing area

In the Smoothing area, you reduce the number of values through averaging.

- Use smoothing**
- ☒ Applies the smoothing. The **Average over values** field can be edited. The number of values in the table is reduced
 - ☐ Does not use smoothing. The **Average over values** field cannot be edited.

Average over values

Displays the number of values that are used for the averaging.



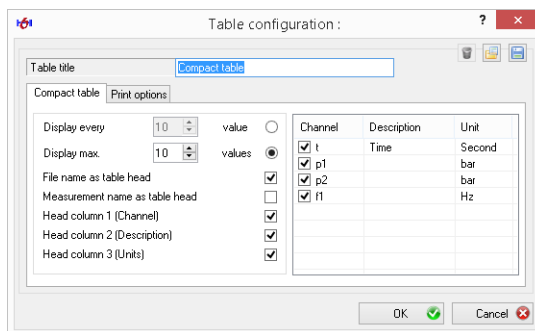
Opens the drop-down list for changing the number for the averaging. The greater the number, the fewer values are displayed in the table.

Compact table tab

PROFESSIONAL | ADVANCED

Menu > Processing (Compact Table) > Format > New > Compact table

Menu > Processing (Compact Table) > Format > Change > Compact table



A compact table displays a tabular overview of the values of a measurement series.

On the **Compact table** tab, you change the display of the compact table.

⇒ **How to create a compact table with measurement values** on page 44

Display every... value

Defines the factor by which the number of values is reduced.

Example: 2000 values in measurement series and a set number of 10 produces a compact table with 200 rows. Only every **10th value** is displayed.

Display max... values

Defines the number of values displayed.

Example: 2000 values in measurement series and a set number of 10 produces a compact table with **10 values**. Only every 200th value is displayed.

File name as table head

- ☒ The table title is displayed over the table.
- ☐ The name of the measurement series is displayed over the table.

Measurement name as table head

- ☒ The name of the measurement series is displayed over the table.
- ☐ The table title is displayed over the table.

- Head column 1 (Channel)** ☒ Displays the respective measurement variable in the header.
☐ Displays no measurement variable in the header.
⇒ **Measurement variables table**, field **Channel**
- Head column 2 (Description)** ☒ Displays the respective name of the measurement variable in the header.
☐ Displays no name in the header.
⇒ **Measurement variables table**, field **Description**
- Head column 3 (Units)** ☒ Displays the respective unit of the measurement variable in the header.
☐ Displays no unit in the header.
⇒ **Measurement variables table**, field **Unit**

Measurement variables table

In the measurement variables table, you select the channels whose values will be displayed in the compact table.

- Channel** ☒ The values of this channel are displayed in the compact table.
☐ The values of this channels are not displayed in the compact table.
Displays the measurement value of the channel.

Description Displays the description of the channel.

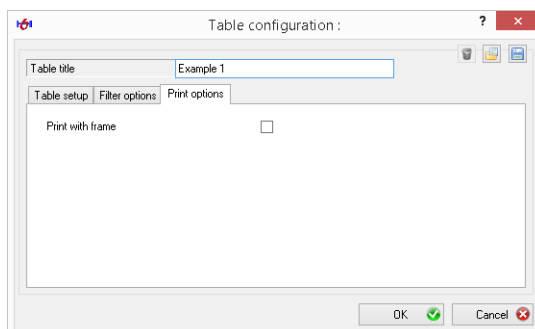
Unit Displays the channel's unit.

Print options tab

PROFESSIONAL | ADVANCED

Menu > Processing (Table) > Format > New > Print options

Menu > Processing (Table) > Format > Change > Print options



On the **Print options** tab, you change the print output of the table.

Frame around the cells

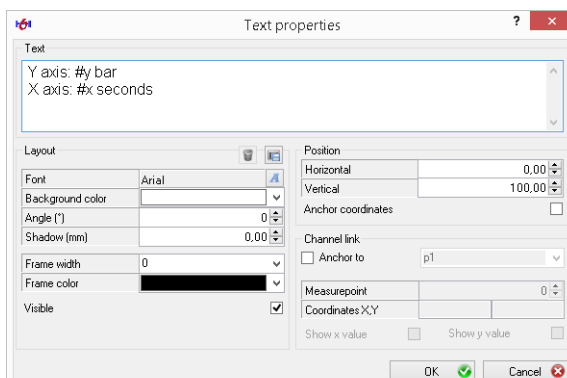
- ☒ Prints a frame around the table cells.
- ☐ Prints no frame around the table cells.

EN

Text properties dialog

PROFESSIONAL | ADVANCED

Menu > Processing (Line Diagram or Histogram) > Add element > Text
 Viewer > Line Diagram > Line diagram properties > Elements > Edit
 Viewer > Histogram > Histogram > Elements > Edit



Text elements can be inserted into line diagrams and histograms. Open the **Text properties** dialog for this.

All changes on the **Text properties** dialog are displayed in the line diagram/histogram. Click **Cancel** to discard the changes.

The text elements can be moved in the line diagram/histogram. A double-click on the text element opens the **Text properties** dialog in order to edit the text element.

⇒ **Inserting and editing text elements** on page 77

Text Specify a text.

If the **Anchor with** check box is activated, the following variables can be used:

#x	Displays the X-value of the anchored channel for the selected measurement point. Example: X-axis: #x [seconds] Display: X-axis: 1.900 [seconds]
#y	Displays the Y-value of the anchored channel for the selected measurement point. Example: Y-axis: #y [bar] Display: Y-axis: 22.805 [bar]

⇒ **Channel link area** on page 227

Layout area

In the **Layout** area, you change the formatting of the text element.

Delete these settings



Deletes the saved default layout settings. The factory settings are used.

Save the settings as default



Saves the current layout settings as default.

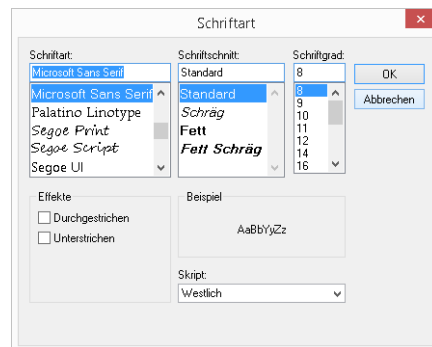
All new text elements receive these settings.

Font

Displays the font.



Opens the Windows **Font** dialog to format the font.



Background color

Displays the background color of the text element.



Opens the drop-down list for changing the background color.

Angle

Displays or changes the angle of the text element.

Shadow

Displays or changes the shading of the text.

Frame width

Displays or changes the width of the frame.

Frame width = 0 means that no frame is displayed.

Frame color Displays the color of the frame.



Opens the drop-down list for changing the frame color.

- Visible**
- ☒ Displays the text element in the line diagram/histogram.
 - ☐ Does not display the text element in the line diagram/histogram.
If the text element is not displayed, you can no longer open the **Text properties** dialog with a double-click on the text element. On the **Elements** tab, **Line diagram properties** dialog, you can show the text element again.
⇒ **Elements tab** on page 167

Position area

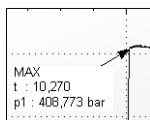
In the **Position** area, you change the position of the text element. The text element can also be moved on the line diagram/histogram with the mouse.

Horizontal Displays or changes the horizontal distance of the text element from the origin point of the diagram.

Vertical Displays or changes the vertical distance of the text element from the origin point of the diagram.

- Anchor coordinates**
- ☒ The text element always remains at the specified point in the diagram. If the diagram is zoomed or moved, the text element is also zoomed or moved.
The check box can only be activated if the **Anchor with** check box is not activated.
 - ☐ The text element remains in the same position in the line diagram/histogram. If the diagram is zoomed or moved, this has no effect on the text element.

Channel link area



On the **Channel link** area, you anchor the text element to a particular measurement point. A line with arrow points from the text element to the selected measurement point.

The function can only be selected for line diagrams. The **Anchor coordinates** function may not be activated.

Anchor to

☒ Anchors the text element to a measurement point.

The check box can only be activated if the **Anchor coordinates** check box is not activated.

Enables the functions in the **Channel link** area.

☐ The text element is not anchored with a measurement point.

Channel

Displays the channel with whose measurement point the text element is anchored.



Opens the drop-down list for changing the channel.

Measurepoint

Displays or changes the measurement point to which the text element is anchored.

Show x value

☒ Displays the X-value of the measurement point in the text element.

☐ Displays no X-value in the text element.

Show y value

☒ Displays the Y-value of the measurement point in the text element.

☐ Displays no Y-value in the text element.

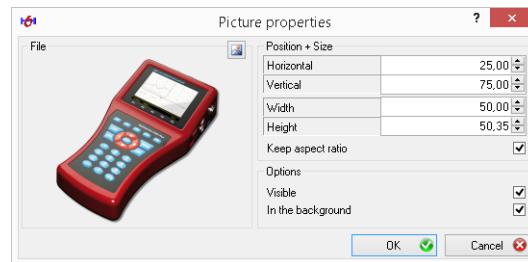
Picture properties dialog

PROFESSIONAL ADVANCED

Menu > Processing (Line Diagram or Histogram) > Insert element > Picture

Viewer > Line Diagram > Line diagram properties > Elements > Edit

Viewer > Histogram > Histogram > Elements > Edit



Picture elements can be inserted into line diagrams and histograms. For this, open the **Picture properties** dialog.

All changes on the **Picture properties** dialog are displayed in the line diagram/histogram. Click **Cancel** to discard the changes.

The picture elements can be moved in the line diagram/histogram. A double-click on the picture element opens the **Picture properties** dialog for editing the picture element.

You can change the default picture. For this, replace the file *Default.jpg* in the directory *Users\Public\Documents\Hydrotechnik\Hydrocom6\Definitions*.

⇒ **Inserting and editing picture elements** on page 78

Opening a picture file



Opens the Windows **Open** dialog.

The following picture file formats can be opened:

- BMP
- GIF
- JPG
- JPEG
- PNG
- WMF

File Displays a preview of the selected picture file.

Position + Size area

In the **Position + Size** area, you change the position and size of the picture element. The picture element can also be moved with the mouse in the line diagram/histogram.

Horizontal Displays or changes the horizontal distance of the picture element to the origin of the diagram.

Vertical Displays or changes the vertical distance of the picture element to the origin of the diagram.

Width Displays or changes the width of the picture element.

Height Displays or changes the height of the picture element.

Keep aspect ratio ☒ Width and height are changed proportionally.
☐ Width and height are changed independently of one another. The picture file can be distorted.

Properties area

In the **Properties** area, you change the display of the picture element.

Visible ☒ Displays the picture element in the line diagram/histogram.
☐ Does not display the picture element in the line diagram/histogram.
 If the picture element is not displayed, you can no longer open the **Picture Properties** dialog with a double-click on the picture element. On the **Elements** tab, **Line diagram properties** dialog, the picture element can be displayed again.
 ⇒ **Elements tab** on page 167

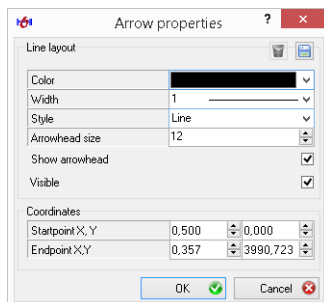
In the background ☒ Displays the picture element behind the diagram.
☐ Displays the picture element in the foreground. The diagram is covered by the picture element.

Arrow properties dialog

PROFESSIONAL | ADVANCED

Viewer > Line Diagram > Line diagram properties > Elements > Edit

Viewer > Histogram > Histogram > Elements > Edit



Arrow elements can be inserted into line diagrams and histograms. A double-click on the arrow element opens the **Arrow properties** dialog for editing the arrow element.

All changes on the **Arrow properties** dialog are displayed in the line diagram/histogram. Click **Cancel** to discard the changes.

The arrow elements can be moved on the line diagram/histogram:

⇒ **Moving arrow element with the mouse** on page 22

⇒ **Inserting and editing arrow elements** on page 79

Line layout area

In the **Line layout** area, you change the formatting of the arrow element.

Delete these properties



Deletes the saved default properties. The factory settings are used.


Save these properties as file




Saves the current properties as default.

All new arrow elements receive these properties.


Color Displays the color of the arrow element.

 Opens the drop-down list for changing the arrow color.

Width Displays the width of the line.

 Opens the drop-down list for changing the line width.

Style Displays the style of the line.

 Opens the drop-down list for changing the line style.

Arrowhead size Displays or changes the size of the arrow tip.

Show arrowhead ☒ Displays the arrow element with arrow tip.
☐ Does not display the arrow element with arrow tip.

Visible ☒ Displays the arrow element in the line diagram/histogram.
☐ Does not display the arrow element in the line diagram/histogram.
If the arrow element is not displayed, you can no longer open the [Arrow Properties](#) dialog with a double-click on the arrow element. On the [Elements](#) tab, [Line diagram properties](#) dialog, you can show the text element again.
⇒ **Elements tab** on page 167

Coordinates area

In the [Coordinates](#) area, you move the arrow element with entries.

Startpoint X, Y Displays or changes X and Y-values of the start point.

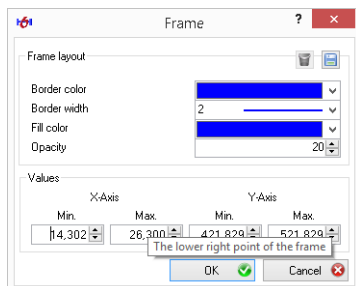
Endpoint X, Y Displays or changes X and Y-values of the end point.

Frame dialog

PROFESSIONAL | ADVANCED

Menu > Processing (Line Diagram) > Insert Element > Frame

Viewer > Line Diagram > Line diagram properties > Elements > Edit



Frame elements can be added to line diagrams. A double-click on the frame element opens the **Frame** dialog for editing the frame element.

All changes on the **Frame** dialog are displayed in the line diagram. Click **Cancel** to discard the changes.

The frame elements can be moved on the line diagram.

⇒ **Inserting and editing frame elements** on page 80

Frame layout area

In the **Frame layout** area, you change the formatting of the frame element.

Delete these properties




Deletes the saved default frame properties. The factory settings are used.


Save these properties as default




Saves the current frame properties as default.

All new frame elements will receive these properties.

Border color Displays the frame color for the frame element.
 Opens the drop-down list for changing the frame color.

Border width Displays the frame width.
 Opens the drop-down list for changing the frame width.

Fill color Displays the fill color for the frame element.
 Opens the drop-down list for changing the fill color.

Opacity Displays or changes the opacity of the frame filling.

Values area

In the **Values** area, you can change the position and size of the frame element. The frame element can also be moved in the line diagram with the mouse.

X-axis (Min/Max) Displays or changes the min and max values on the X-axis. The frame width arises from the difference between the max and min values.

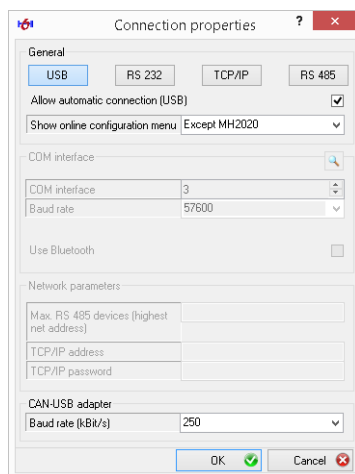
Y-axis (Min/Max) Displays or changes the min and max values on the Y-axis. The frame height arises from the difference between the max and min values.

Dialogs for the Instrument menu

This section describes the dialogs for the **Instrument** menu.

Connection properties dialog

EN

PROFESSIONAL **ADVANCED** **BASE***Menu > Instrument > Options*

You can connect the software to a multitude of instruments. This can be done using various interfaces.

⇒ **Configuring the connection to the measurement device** on page 19

General area

On the upper part of the dialog are four buttons; you can use these to choose the connection type:

- **USB connection type**
- **RS 232 connection**
- **TCP/IP connection**
- **RS 485 connection**

Depending on the connection type you have chosen, different options can be set.

Allow automatic connection (USB)

⇒ **USB connection type** on page 236

Show online configuration menu

Specifies the behavior of the software when calling the online mode.

With this function it is possible to define a default for online measurement once and to use it quickly for additional measurements without having to work through the entire configuration each time.



There are the following selection possibilities:

- **Always**

The dialog for configuration of the online measurement is displayed each time.

- **Except MH2020**

The dialog for configuration of the online measurement is displayed unless a MultiHandy 2020 is connected.

If a saved default configuration exists, it is used for the MH 2020.

If there is no default configuration, the online measurement for the MH 2020 is performed with the following configuration:

- Duration = 1 minute
- Sampling rate = 10 ms
- Display = digital display

- **Never**

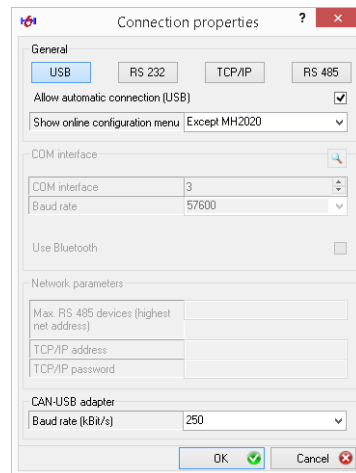
The dialog is not displayed. If default settings are saved, these are used. If no default settings are saved, the dialog for configuration of the online measurement is displayed.

⇒ **Online mode configuration dialog** on page 243

USB connection type

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Options > USB



If you connect instruments via USB, you can select the following settings.

⇒ **Configuring the connection to the measurement device** on page 19

General area

In the **General** area, the following settings is relevant for USB:

Allow automatic connection (USB)

- ☒ Instruments are connected automatically via USB.
- ☐ Instruments are not connected automatically via USB.

If you connect instruments manually via the Instrument menu:

⇒ **Connect (Interface)** on page 133

CAN-USB adapter area

You can connect the Patrick particle counter to a CAN-USB adapter. For this, you set the baud rate for the CAN bus here. The baud rate must be identical to the baud rate that is set on the particle counter.

Baud rate (kBit/s)

Displays or changes the required baud rate.

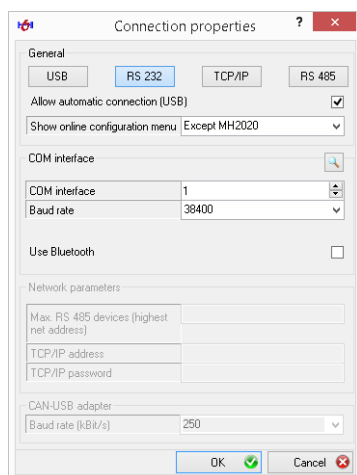


Opens the drop-down list for changing the baud rate.

RS 232 connection

PROFESSIONAL | ADVANCED | BASE

Menu > Instrument > Option > RS 232



If you connect an instrument via a COM interface, you can configure the parameters for the connection here.



Detects the COM interface used and the suitable baud rate automatically when the instrument is connected.

If the automatic detection fails, you must configure the connection manually.

⇒ **RS 232 connection type** on page 19

⇒ **Configuring a RS 232 connection manually** on page 20

COM port

Displays or changes the number of the COM interface.



Changes the number of the COM interface.

Baud rate

Displays or changes the baud rate of the COM interface.



Opens the drop-down list for changing the baud rate.

Use Bluetooth

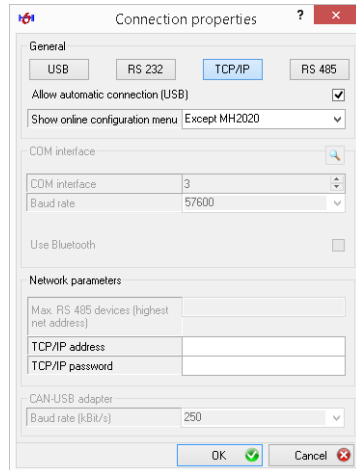
☒ Indicates that the connection is made via Bluetooth.

☐ Indicates that the connection is made using a cable.

TCP/IP connection

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Options > TCP/IP



Instruments with Ethernet connection can be integrated into a TCP/IP network. Here you can configure the network configuration to these instruments.

⇒ **Configuring the connection to the measurement device** on page 19

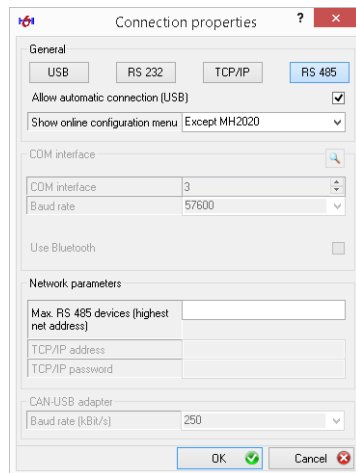
TCP/IP address Displays or changes the network address of the instrument.

TCP/IP password Displays or changes the TCP/IP password of the instrument.

RS 485 connection

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Option > RS 485



Instruments can be connected via RS 485.

⇒ **Configuring the connection to the measurement device** on page 19

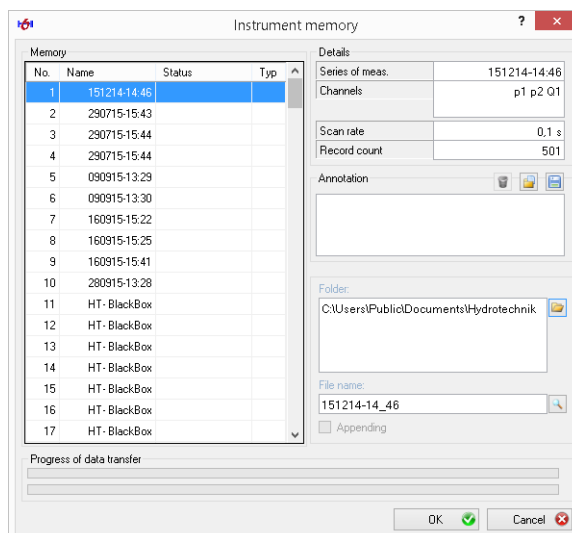
**Max. RS 485 devices
(highest net address)**

Displays or changes the highest network address.

Instrument memory dialog

PROFESSIONAL | ADVANCED | BASE

Menu > Instrument > Read instrument memory



On the **Instrument memory** dialog, you can read out the instrument memory and save measurement series that are saved on the instrument as files.

⇒ **Reading out instrument memory** on page 27

Memory area

In the **Memory** area, the measurement series on the instrument are displayed. Here the measurement series that should be saved as files are marked.

- No.** Displays the memory space of the measurement series in question.
- Name** Displays the file name of the measurement series.
- Status** Displays any errors during transmission.
- Type** Indicates whether or not the measurement series comes from a Patrick particle counter.
If the measurement series comes from a Patrick particle counter, this is indicated with an icon.

Details area

The **Details** area displays meta information about the measurement series selected. If in the **Memory** area more than one measurement series is marked, no data is displayed in the **Details** area.

Series of meas. Displays the file name of the measurement series.

Channels Displays the variables of the channels recorded.

Scan rate Displays the sampling rate of the measurement series.

The **Scan rate** multiplied by the **Record count** produces the duration of the measurement series.

Record count Displays the number of measurement points of the measurement series.

Annotation area

In the **Annotation** area, a remark is displayed that was saved in the instrument together with the measurement series. You can change or add to this remark and save it together with the measurement data.

If in the **Memory** area, more than one measurement series is marked, the remarks are saved in all measurement series.

You can save and load remark texts as templates (text building blocks).

Delete these properties



Deletes the text building block used without confirmation.

Search for other property files



Loads a saved text building block as remark.

The remark is used exclusively for these MWF files.

Save these properties as file



Saves the current remark as text building block.

The remark is saved in an information file (*.inf).

Text field Displays or changes the free text of the remark. The text is saved together with the measurement data.

Folder area

The **Folder** area displays the pre-set folder for saving the measurement data.

Select a folder



Opens the **Search for folder** dialog.

File name area

The **File name** area displays or changes the file name. This field must be filled in.

If the file name was specified before measurement on the instrument, it cannot be changed here.

Select existing file



Opens the Windows **Save as** dialog.

With this dialog, you can select an existing file if you want to overwrite it.

Appending

This selection is only available for Patrick history files. History files can only be downloaded one by one.

- ☒ Downloads history files of the Patrick particle counter and appends the history files to an existing history file.
- ☐ Only downloads the history files of the Patrick particle counter.

The following prerequisites must be fulfilled so that a history file can be appended to an existing history file:

- The selected file must be a Patrick history file.
- The data records must be more recent than those in the existing file.
- If a measurement series was recorded with another Patrick (comparison of the serial numbers), a warning is displayed.
- If the file does not exist, it is generated automatically.

Progress of data transfer area

In the **Progress of data transfer** area, the progress of the reading out of the instrument memory is displayed.

Top progress bar Displays the progress of the measurement series currently being transmitted.

Bottom progress bar Displays the overall progress of all measurement series to be transferred.

EN

Online mode configuration dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode

If the software is connected to an instrument (e.g. MultiSystem or MultiHandy), the **Online mode configuration** dialog opens. If the software is connected to the Patrick particle counter, the **Patrick Online** window opens.

⇒ **Patrick Online window** on page 271

On the **Online mode configuration** dialog, you configure the channels and display when using the online mode.

⇒ **Operating the instrument in online mode** on page 30

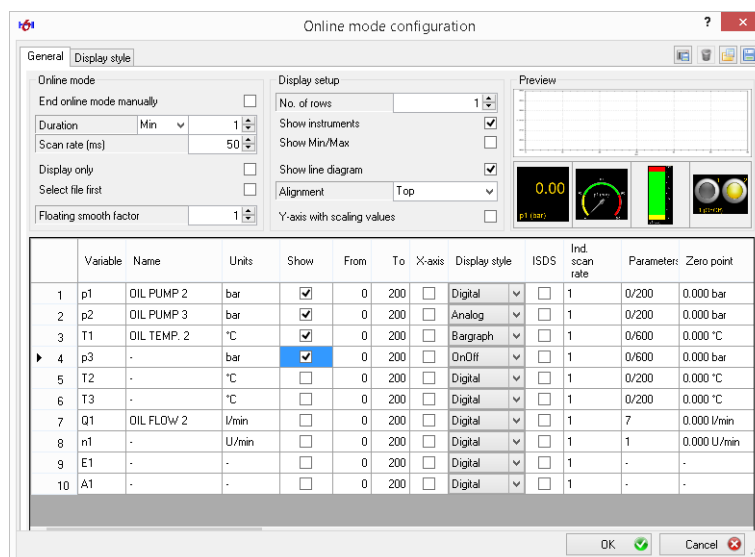
The **Online mode configuration** dialog consists of the following tabs:

- **General tab**
- **Display styles tab**

General tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode > General tab



On the **General** tab, you configure the channels and display when using the online mode.

Loading the channels can take a moment. During loading, a progress bar is displayed.

⇒ **Operating the instrument in online mode** on page 30

Save these properties as default



Saves the current properties and display style as default.

Each time this dialog is called up, these properties will be used.

Delete these properties



Deletes the saved configuration file without confirmation. The factory settings are used.

Search for other property files



Selects a configuration file and applies it on this dialog.

Opens the Windows **Open** dialog.

Save these properties as file



Saves the current properties as configuration file.

The properties are saved in a configuration file (*.onl).

Opens the Windows **Save as** dialog.

Online mode area

In the **Online mode** area, you change the settings for data recording and processing.

End online mode manually

☒ The online mode is displayed permanently.

If this check box is activated, the online measurement must be ended manually.

☐ Online mode is not displayed permanently. Online measurement is ended after expiry of the set **Duration**.

Duration

Displays or changes the duration for which the online mode is active.

This setting is only relevant if the **End online mode manually** check box is not activated.



Opens the drop-down list for changing the time unit. Minutes and hours are available for selection.

Scan rate (ms)

Displays or changes the sampling rate in milliseconds.

This sampling rate is the time interval at which measurement values are transmitted from the instrument to the computer.

⇒ **List of possible sampling rates in online mode** on page 32

Display only

☒ Measurement data is not saved in online mode, but only displayed.

☐ Measurement data is displayed and saved in online mode.

Select file first

☒ Requires entry of a file name for the measurement file before the online measurement starts.

Select this option for extensive online measurements. The number of measurement values that can be saved is not limited by the software.

If the connection to the instrument is interrupted, all measurement values received thus far are saved.

On the **Online** window, the last 30,000 measurement values are displayed on the line diagram.

☐ The measurement value file is named automatically according to the scheme

ONLyyyyymmdd_hhmmss.mwf.

The number of measurement values that can be saved is limited to 1,000,000. All measurement values displayed on the line diagram can be displayed in the **Online** window.

Floating smooth factor

Displays or changes the degree of smoothing of the curve.

For smoothing, the method of the floating average value is used.

With a value 1, no smoothing is used. The value 100 is the highest value for smoothing.

For smoothing, for each data value, the average value is calculated using a more or less wide range of adjacent values. This does not reduce the data quantity.

Display setup area

In the **Display setup** area, you change the settings for display of measurement values during the measurement.

No. of rows

Displays or changes the number of rows for the online display.

The entire number of displays is distributed equally across this number of rows. If, for example, you have selected nine channels and set three rows, a 3 x 3 window will be displayed.

Show instruments

☒ Displays measurement values on display instruments during measurement.

☐ Does not display measurement values on display instruments during measurement.

Display instruments are alternative displays of the current measurement value. Examples: Digital, analog, or bar graph.

Show Min/Max

☒ Displays the minimal and maximal values also on the display instruments if the **Show instruments** check box is activated.

☐ Does not display the minimal and maximal values on the display instruments.

Show line diagram

☒ Displays measurement values on a line diagram during measurement.

☐ Does not display measurement values on a line diagram during measurement.

Alignment

Displays or changes the position of the line diagram relative to the display instruments.

Possible positions are top, bottom, left and right.

Opens the drop-down list for changing the alignment.



- Y-axis with scaling values**
- ☒ Displays the Y-axis with scaling values to the left of the line diagram.
 - ☐ Displays the legend with channel name, measurement variables, and minimal and maximal values of the scaling above the line diagram.

You set the manual scaling in the **Channel list** area in the **from** and **to** columns.

⇒ **Display styles tab** on page 249

⇒ **from** on page 247

⇒ **to** on page 247

Preview area

The **Preview** area shows how the **Online** window will look during measurement.

⇒ **Online window** on page 265

Channel list area

Specify which channels should be displayed and recorded on the **Online** window.

- First column** Displays the measurement channel.
- Variable** Displays the measurement variable that is configured on the instrument for this measurement channel.
- Name** Displays the **Name** field of the measurement channel on the instrument.
- Unit** Displays the unit of the variable that is configured on the instrument for this measurement channel.
- Show**
- ☒ The channel is recorded and displayed during online measurement.
 - ☐ The channel is not recorded or displayed during online measurement.
- from** Displays or changes the lower scaling limit for manual scaling for the line diagram on the **Online** window.
- to** Displays or changes the upper scaling limit for manual scaling for the line diagram on the **Online** window.

- X-axis**
- ☒ The channel is displayed on the X-axis.
 - ☐ The channel is displayed on the Y-axis.

If no **X-axis** check box is activated, the time is displayed on the X-axis.

Display style Displays or changes the display style of the display instrument (only for **PROFESSIONAL**).



Opens the drop-down list for changing the display style.

To display display instruments on the **Online** window, the **Show instrument** check box in the **Display** area must be activated.

⇒ **Show instruments** on page 246

Specific fields for instruments

The following fields are specific for the instrument in question and display the channel parameters of the instrument:

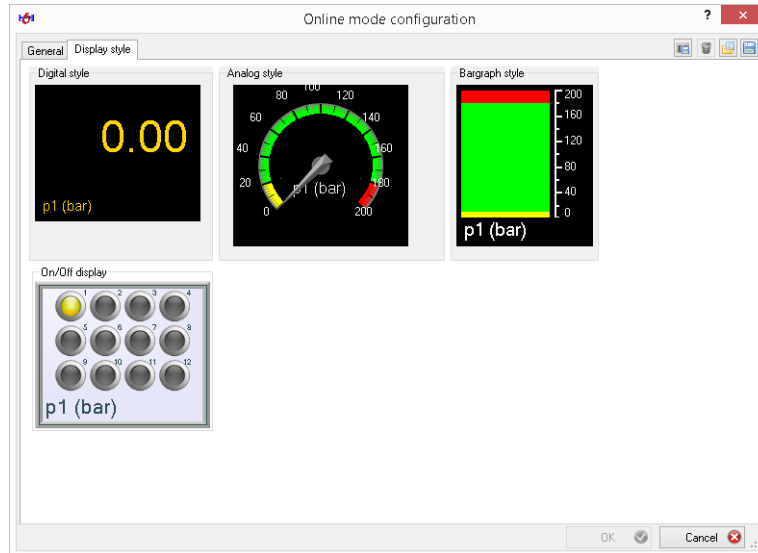
- ISDS
- Ind. Scan rate
- Parameter
- Zero point
- Filter
- Signal
- Linearisation
- Linearisation table
- Multi-channel

⇒ Operating instructions for the instrument

Display styles tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode > Display styles tab



On the **Display styles** tab, you call up additional dialogs for configuring the display style in question.

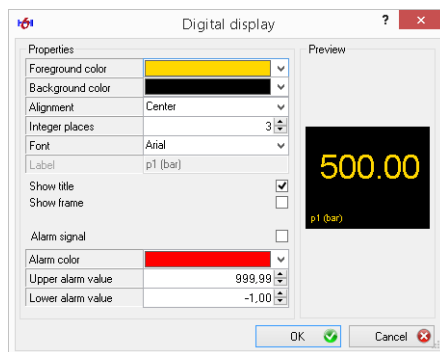
Double-click the display style in question to open the corresponding dialog.

- ⇒ **Digital display dialog** on page 250
- ⇒ **Analog display dialog** on page 252 (only for **PROFESSIONAL**)
- ⇒ **Bargraph display dialog** on page 257 (only for **PROFESSIONAL**)
- ⇒ **On/Off display dialog** on page 262 (only for **PROFESSIONAL**)

Digital display dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode > Display styles tab > Digital > Double-click



On the **Digital display** dialog, you can configure the appearance of the digital display and an alarm.

In addition to the settings on this dialog, you can activate the display of the minimum value and the maximum value on this display instrument (only for **PROFESSIONAL**).

⇒ **Online mode configuration dialog > General tab > Show Min/Max** on page 246

Properties area

In the **Properties** area, you change the display of the digital meter.

Foreground color Displays or changes the color for the displayed measurement value, the label (variable and unit) and the frame.



Opens the drop-down list for changing the foreground color.

Background color Displays or changes the background color of the digital meter.



Opens the drop-down list for changing the background color.

Alignment Displays or changes the position of the label (variable and unit).



Opens the drop-down list for changing the alignment.

Possible positions are left, center, and right.

Integer places Displays or changes the number of places before the decimal point.
The more places you choose, the smaller the display.

Font Displays or changes the font for the label.



Opens the drop-down list for changing the font.

Label Displays the label.

The label consists of **Variable** and **Unit** from the **Online mode configuration** dialog.

⇒ **Variable** on page 247

⇒ **Unit** on page 247

Show title ☒ The title is displayed on the digital meter.

☐ The title is not displayed on the digital meter.

Show frame ☒ A frame is displayed around the digital meter and between measurement value and title.

☐ No frame is displayed.

Alarm signal on ☒ Activates an alarm with exceeding or underrunning of the specified value range.

☐ Deactivates the alarm with exceeding or underrunning of the specified value range.

Alarm color Displays or changes the color of the measurement value displayed for the case that an alarm is sounded.



Opens the drop-down list for changing the alarm color.

Upper alarm value Displays or changes the measurement value that, when exceeded, triggers an alarm.

Lower alarm value Displays or changes the measurement that, when underrun, triggers an alarm.

Preview area

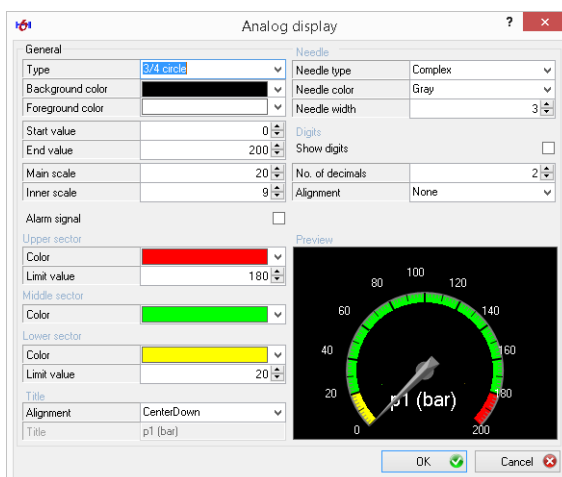
The **Preview** area displays how the display instrument will look in the **Online** window during the measurement.

⇒ **Online window** on page 265

Analog display dialog

PROFESSIONAL

Menu > Instrument > Online mode > Display styles tab > Analog > Double-click



On the **Analog display** dialog, you can configure the analog display and an alarm.

In addition to the settings on this dialog, you can activate the display of the minimal value and the maximal value on this display instrument on the **General** tab on the **Online mode configuration** dialog.

⇒ **Show Min/Max** on page 246

General area

In the **General** area, you change the basic appearance of the digital display and you can activate an alarm.

Type Displays or changes the type of the analog display.



Opens the drop-down list for changing the type.

Background color Displays or changes the background color of the analog display.



Opens the drop-down list for changing the background color.

Foreground color Displays or changes the color for the measurement value displayed, the label (variable and unit), and the scale of the analog display.



Opens the drop-down list for changing the foreground color.

Start value Displays or changes the lower limit value of the analog display.
Measurement values that are smaller than the start value will not be displayed.
The start value should correspond to the **from** field in the **Channel list** on the **General** tab on the **Online mode configuration** dialog.
⇒ **from** on page 247

End value Displays or changes the upper limit value of the analog display.
Measurement values that are greater than the end value will not be displayed.
The end value should correspond to the **to** field in the **Channel list** on the **General** tab on the **Online mode configuration** dialog.
⇒ **to** on page 247

Main scale Displays or changes the measurement value range of a main segment on the analog display.

Inner scale Displays or changes the number of markings within a main segment on the analog display.

Alarm signal ☒ With underrunning of the lower limit value and exceeding of the upper limit value, emits an alarm signal.
☐ Does not emit an alarm signal.
⇒ **Upper sector area** on page 254
⇒ **Lower sector area** on page 254

Upper sector area

In the **Upper sector** area, you configure the division of the analog display and the alarm.

Grid color Displays or changes the color of the upper sector of the analog display (high measurement values).



Opens the drop-down list for changing the color.

Limit value Displays or changes the limit value starting at which the upper section begins. This limit value upper limit value for the alarm tone.
⇒ **Alarm signal** on page 253

Middle sector area

In the **Middle sector** area, you configure the color of the sector.

Grid color Displays or changes the color of the middle sector of the analog display.



Opens the drop-down list for changing the color.

Lower sector area

In the **Lower sector** area, you configure the division of the analog display and the alarm.

Color Displays or changes the color of the lower sector of the analog display (low measurement values).



Opens the drop-down list for changing the color.

Limit value Displays or changes the limit value to which the lower sector reaches. This limit value is also the lower limit value for the alarm signal.
⇒ **Alarm signal** on page 253

Title area

In the **Title** area, you configure the position of the title, which consists of the variable and unit.

Alignment Displays or changes the position of the label (variable and unit).



Opens the drop-down list for changing the alignment.

The alignment of the title can overlap with the alignment of the digital display and then be illegible.

⇒ **Digits area** on page 256

Label Displays the label.

The label consists of **Variable** and **Unit** from the **Online mode configuration** dialog.

⇒ **Variable** on page 247

⇒ **Unit** on page 247

Needle area

In the **Needle** area, you configure the display of the needle in the analog display.

Needle type Displays or changes the type for how the needle is displayed.



Opens the drop-down list for changing the type.

Needle color Displays or changes the color of the needle.



Opens the drop-down list for changing the color of the needle.

Needle width Displays or changes the width of the needle.

Digits area

In the **Digits** area, you configure the display of an optional and additional digital display of the current measurement value.

- Show digits**
- ☒ In addition to the analog display, the current measurement value is displayed digitally.
 - ☐ The current measurement value is not displayed digitally in addition to the analog display.

No. of decimals Displays or changes the number of places after the decimal point.

Alignment Displays or changes the position of the digital display.



Opens the drop-down list for changing the alignment.

The alignment of the digital display can overlap with the alignment of the label and then be illegible.

⇒ **Title area** on page 255

Preview area

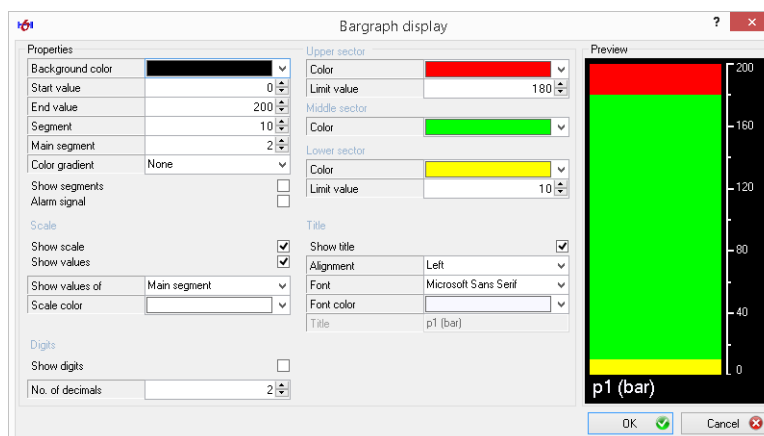
The **Preview** area displays how the display instrument will look in the **Online** window during the measurement.

⇒ **Online window** on page 265

Bargraph display dialog

PROFESSIONAL

Menu > Instrument > Online mode > Display styles tab > Bargraph > Double-click



On the **Bargraph display** dialog, you can configure the appearance of the bargraph display and an alarm.

In addition to the settings on this dialog, you can activate the display of the minimal value and the maximal value on this display instrument on the **General** tab on the **Online mode configuration** dialog.

⇒ **Show Min/Max** on page 246

Properties area


In the **Properties** area, you configure the basic settings of the bargraph display.

Background color

Displays or changes the background color of the bargraph display.

Opens the drop-down list for changing the background color.



- Start value** Displays or changes the lower limit value of the bargraph display.
Measurement values that are smaller than the start value will not be displayed.
The start value should correspond to the **from** field in the **Channel list** on the **General** tab on the **Online mode configuration** dialog.
⇒ **from** on page 247
- End value** Displays or changes the upper limit value of the bargraph display.
Measurement values that are greater than the end value will not be displayed.
The end value should correspond to the **to** field in the **Channel list** on the **General** tab on the **Online mode configuration** dialog.
⇒ **to** on page 247
- Segments** Displays or changes the total number of segments in the bargraph display.
- Main segment** Displays or changes the number of segments per main segment.
- Color gradient** Displays or changes a color gradient in the bargraph display.
 Opens the drop-down list for changing the color gradient.
- Show segments** ☒ Segments are displayed in addition to the scale in the bargraph display.
☐ Segments are only displayed on the scale and not also in the bargraph display.
- Alarm signal** ☒ With underrunning of the lower limit value and exceeding of the upper limit value, emits an alarm signal.
☐ Does not emit an alarm signal.
⇒ **Upper sector area** on page 260
⇒ **Lower sector area** on page 261

Scale area

In the **Scale** area, you configure the appearance of the scale.

You configure the division of the scale in the **Properties** area, in the **Upper sector** area, and in the **Lower sector** area.

- ⇒ **Start value** on page 258
- ⇒ **End value** on page 258
- ⇒ **Segments** on page 258
- ⇒ **Main segment** on page 258
- ⇒ **Limit value** on page 260
- ⇒ **Limit value** on page 261

Display scale ☒ The scale is displayed.
☐ No scale is displayed.

Show values ☒ The scale is displayed with values.
☐ No values are displayed on the scale.

This setting is only effective if the **Show scale** check box is activated.

Show values of Displays or changes where scale values are displayed.



There are the following selection possibilities:

- **Segment**

The appropriate scale value is displayed for each segment.

- **Main segment**

The scale value is only displayed for each main segment.

- **Section**

Scale values are only displayed for the beginning of the scale, the end of the scale, and for the limits between the lower, middle, and upper sectors.

- ⇒ **Start value** on page 258
- ⇒ **End value** on page 258
- ⇒ **Upper sector area** on page 260
- ⇒ **Middle sector area** on page 260
- ⇒ **Lower sector area** on page 261

Scale color Displays or changes the color of the scale of the bargraph display.



Opens the drop-down list for changing the scale color.

Digits area

In the **Digits** area, you configure the display of an optional and additional digital display of the current measurement value.

- Show digits**
- ☒ In addition to the bargraph display, the current measurement value is displayed digitally.
 - ☐ The current measurement value is not displayed digitally in addition to the bargraph display.

No. of decimals Displays or changes the number of places after the decimal point.

Upper sector area

In the **Upper sector** area, you configure the division of the bargraph display and the alarm.

Needle color Displays or changes the color of the upper sector of the bargraph display (high measurement values).



Opens the drop-down list for changing the color.

Limit value Displays or changes the limit value starting at which the upper section begins. This limit value upper limit value for the alarm tone.
⇒ **Alarm signal** on page 258

Middle sector area

In the **Middle sector** area, you configure the division of the bargraph display.

Needle color Displays or changes the color of the middle sector of the bargraph display.

Lower sector area

In the **Lower sector** area, you configure the division of the bargraph display and the alarm.

Needle color Displays or changes the color of the lower sector of the bargraph display (low measurement values).



Opens the drop-down list for changing the color.

Limit value Displays or changes the limit value to which the lower sector reaches.

This limit value is also the lower limit value for the alarm signal.

⇒ **Alarm signal** on page 258

Title area

In the **Title** area, you configure the display of the title, which consists of the variable and unit.

Show title ☒ The title is displayed.
☐ The title is not displayed.

Alignment Displays or changes the position of the label (variable and unit).



Opens the drop-down list for changing the alignment.

Font Displays or changes the font of the title.



Opens the drop-down list for changing the font.

Font color Displays or changes the font color of the title.



Opens the drop-down list for changing the font color.

Label Displays the label.

The label consists of **Variable** and **Unit** from the **Online mode configuration** dialog.

⇒ **Variable** on page 247

⇒ **Unit** on page 247

Preview area

The **Preview** area displays how the display instrument will look in the **Online** window during the measurement.

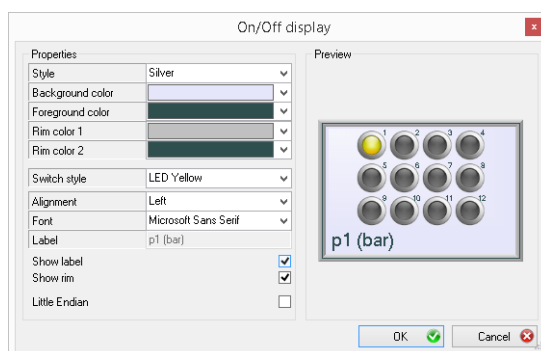
⇒ **Online window** on page 265

On/Off display dialog

EN

PROFESSIONAL

Menu > Instrument > Online mode > Display styles tab > On/Off display > Double-click



On the **On/Off display** dialog, you can configure the appearance of the on/off display.

Properties area








In the **Properties** area, you configure the on/off display.

Style Displays or changes the display style of the on/off display.

The display style is a color-adjusted combination of the fields **Background color**, **Foreground color**, **Rim color 1** and **Rim color 2**. You can also change these colors regardless of the display style.



Opens the drop-down list for changing the display style.

Background color	Displays or changes the background color of the on/off display. Opens the drop-down list for changing the background color.
	
Foreground color	Displays or changes the foreground color of the on/off display. Opens the drop-down list for changing the foreground color. The label is displayed in the foreground color. ⇒ Description on page 263
	
Rim color 1	Displays or changes the color of the frame. Opens the drop-down list for changing the frame background.
	
Rim color 2	Displays or changes the colored accent on the frame. Opens the drop-down list for changing the frame foreground.
	
Switch style	Displays or changes the display style of the display. Opens the drop-down list for changing the display style.
	
Alignment	Displays or changes the position of the label (variable and unit). Opens the drop-down list for changing the alignment.
	
Font	Displays or changes the font of the title. Opens the drop-down list for changing the font.
	
Description	Displays the label. The label consists of Variable and Unit from the Online mode configuration dialog. ⇒ Variable on page 247 ⇒ Unit on page 247

Show label ☒ The label is displayed.
 ☐ The label is not displayed.

Show rim ☒ The rim is displayed.
 ☐ The rim is not displayed.

Little Endian ☒ Multi-channels are displayed in descending order.
 ☐ Multi-channels are displayed in ascending order.

Preview area

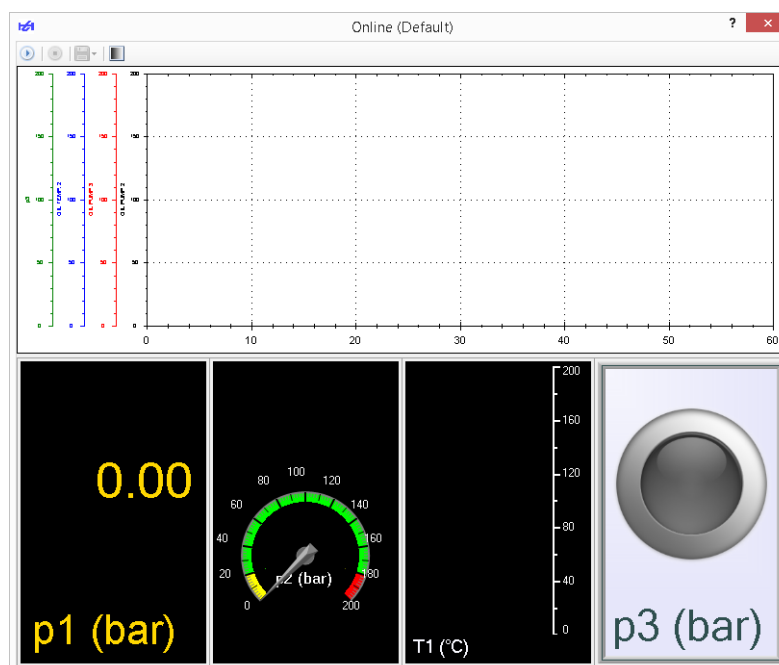
The **Preview** area shows how the display instrument will look in the **Online** window during the measurement.

⇒ **Online window** on page 265

Online window

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode > OK



The measurement values are displayed constantly in the **Online** window during measurement. You can record and save the measurement.

⇒ **Operating the instrument in online mode** on page 30

You configure the appearance of the **Online** window on the **Online mode configuration** dialog.

⇒ **Online mode configuration dialog** on page 243

Double-click on the display style in question to change the settings for the current online measurement.

⇒ **Digital display dialog** on page 250

⇒ **Analog display dialog** on page 252 (only for **PROFESSIONAL**)

⇒ **Bargraph display dialog** on page 257 (only for **PROFESSIONAL**)

⇒ **On/Off display dialog** on page 262 (only for **PROFESSIONAL**)

Start



Starts the online measurement and the recording.

If you have configured a line diagram or display instruments, the measurement values will be displayed as you have configured them.

Stop



Stops the online measurement and ends the recording.

Save



Opens the drop-down list for saving.

- **Save**

Saves the measurement without confirmation as MWF file. The file is named automatically according to the scheme *Onlyyyyymmtt_hhmmss.MWF*.

- **Save as**

Opens the **Save as** dialog.

⇒ **Save as dialog (for MWF files)** on page 269

Transparent



Activates the transparency mode.

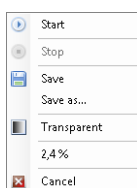
The frame of the Windows window is shown or hidden. In transparency mode, only the buttons, the line diagram and the display instruments can be seen if these are configured.

You deactivate the transparency mode on one of the **context menus** of the **Online** window.

⇒ **Context menu (buttons and display instruments)** on page 266

⇒ **Context menu (line diagram)** on page 268

Context menu (buttons and display instruments)



On this **context menu**, there are the same buttons available as in the **Online** window.

In addition, you can cancel the measurement on this **context menu** without saving.

Start



Starts the online measurement and the recording.

If you have configured a line diagram or display instruments, the measurement values will be displayed as you have configured them.

Stop



Stops the online measurement and ends the recording.

Save and Save as



Opens the drop-down list for saving.

- **Save**

Saves the measurement without confirmation as MWF file. The file is named automatically according to the scheme
Onlyyyyymmtt_hhmmss.MWF.

- **Save as**

Opens the **Save as** dialog.

⇒ **Save as dialog (for MWF files)** on page 269

The button can only be used if the **Specify file first** check box is not activated.

⇒ **Select file first** on page 245

Transparent



Activates or deactivates the transparency mode.

The frame of the Windows window is shown or hidden. In transparency mode, only the buttons, the line diagram and the display instruments can be seen if these are configured.

% Displays the progress of the measurement if a duration is configured for the measurement.

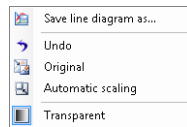
⇒ **Duration** on page 245

Cancel



Cancels the measurement without saving it.

Context menu (line diagram)



On this **context menu**, there are various buttons available for saving and adjusting the line diagram. You can also deactivate the transparency mode.

Save line diagram as



Saves the line diagram as graphics file.

Opens the Windows **Save as** dialog.

Undo



Undoes the last action on the line diagram.

Original



Scales the line diagram to the original size.

Use this function if you are dissatisfied with the scaling.

Automatic scaling



Uses rounded minimal and maxis of the variables as scaling limits. All values are displayed.

Transparent

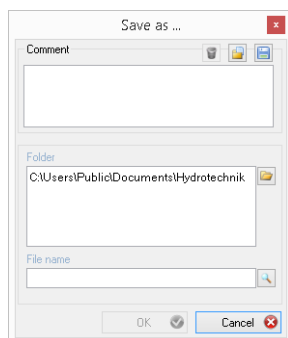


Activates or deactivates the transparency mode.

The frame of the Windows window is shown or hidden. In transparency mode, only the buttons, the line diagram, and the display instruments can be seen if these are configured.

Save as dialog (for MWF files)

PROFESSIONAL **ADVANCED** **BASE**
Menu > Instrument > Online mode > OK >  > Save as



On the **Save as** dialog, you can enter and save a comment about measurement data.

Comment area

In the **Comment** area, you can enter a free text. The comment is saved with the MWF file.

You can save and load comment texts as templates (text building blocks).

Delete these properties



Deletes the text building block used without confirmation.

Search for other property files



Loads a saved text building block as remark.

The comment is used exclusively for these MWF files.

Save these properties as file



Saves the current comment as text building block.

The comment is saved in an information file (*.inf).

Text field

Displays or changes the free text of the comment. The text is saved together with the measurement data.

File area

In the File area, you can change the file name and storage location.

Folder Displays the default folder for saving the measurement data.

Select another folder



Opens the [Search for folder](#) dialog.

File name Displays or changes the file name This field must be filled in.

Select existing file



Opens the Windows [Save as](#) dialog.

With this dialog you can select an existing file if you want to overwrite it.

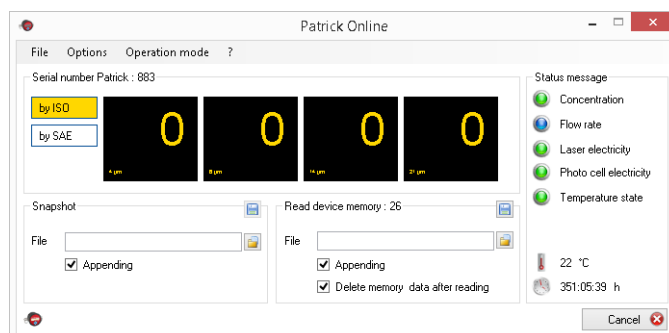
Patrick Online window

PROFESSIONAL | ADVANCED | BASE

Menu > Instrument > Online mode

If the software is connected to the Patrick particle counter, the **Patrick Online** window opens. If the software is connected to an instrument (e.g. MultiSystem or MultiHandy), the **Online mode configuration** dialog opens.

⇒ **Online mode configuration dialog** on page 243



On the **Patrick Online** window, you can display current measurement values, save them on your computer and delete the particle counter's memory.

⇒ **About the Patrick particle counter in online mode** on page 33

Menu bar

PROFESSIONAL | ADVANCED | BASE

The menu bar consists of the following menus:

- **File menu**
- **Options menu**
- **Operation mode menu**
- **? menu**

File menu

The **File** menu has the following functions.

- Log** Creates a log with the current measurement values either as PDF or TXT file.
- Cancel** Closes the dialog and returns to the main window.

Options menu

The **Options** menu has the following functions.

- Save classes** Displays or saves according to which standard for particle size classes the measurement values are saved.



Opens the drop-down list for changing the class selection saving.

- Flow control** Instead of the **Status messages** area, displays the **Flow rate (ml/min)** area.
⇒ **Status message area** on page 274
⇒ **Flow rate (ml/min) area** on page 275

- Delete device memory data** Deletes the history data saved in the particle counter.
The deletion of the instrument memory cannot be undone.

Operation mode menu

- Opens the **Operation mode** dialog.
⇒ **Operation mode dialog** on page 278

? menu

- Opens the online help.

Areas

PROFESSIONAL | ADVANCED | BASE

The areas on the **Patrick Online** window display measurement values and status and allow the saving of measurement values.

The **Patrick Online** window consists of the following areas:

- **Patrick serial number area**
- **Status message area**
- **Flow rate (ml/min) area**
- **Snapshot area**
- **Read device memory area**
- **Buttons area**

EN

Patrick serial number area

The **Serial number Patrick** area displays the measurement values per particle size class.

Serial number Patrick	Displays the serial number of the connected Patrick particle counter.
By ISO	Displays or changes that the particle size classes are displayed according to the ISO standard.
By SAE	Displays or changes that the particle size classes are displayed according to the SAE standard.
Display fields	<p>Displays the values of the last measurement per particle size class.</p> <p>Depending on the setting of the connected particle counter, these measurement values do not absolutely reflect the current status of the measurement (set measurement mode, measurement interval).</p>

Status message area

Here, either the **Status message** area or the **Flow rate (ml/min)** area is displayed.

⇒ **Flow control** on page 272

⇒ **Flow rate (ml/min) area** on page 275

In the **Status message** area, the current states of various device parameters are displayed.

Status messages are displayed for the following device parameters:

- Concentration
- Flow rate
- Laser electricity
- Photo cell electricity
- Temperature state

⇒ **Patrick operating instructions**

Too low



Displays the status of the device parameter in question as too low.

OK



Displays the status of the device parameter in question as OK.

Too high



Displays the status of the device parameter in question as too high.

Temperature



Displays the temperature of the Patrick particle counter.

The temperature is not measured in the oil, but on the electronics board. The measurement range is between -20 °C and 100 °C.

Hours of operation



Displays the operation of the Patrick particle counter.

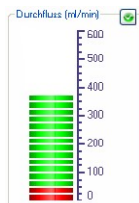
The hours of operation value is also present after a power failure. After the power failure, the counter starts counting at the last saved hours of operation value before the power failure.

Flow rate (ml/min) area

Here, either the **Status message** area or the **Flow (ml/min)** area is displayed.

⇒ **Flow control** on page 272

⇒ **Status message area** on page 274



The **Flow rate (ml/min)** area displays a bar chart with the current flow rate.

Close



Closes the **Flow rate (ml/min)** area and then displays the **Status message** area again.

Snapshot area

In the **Snapshot** area, you can save current measurement values of the Patrick particle counter.

Save



Saves the current measurement values as xMWF file with the file name that is in the **File** field in the default directory.

File

Displays or changes the file name of the measurement values file (*.xMWF).

Storage path



Opens the Windows **Save as** dialog.

Appending

☒ The current measurement values are appended to the selected, existing xMWF file.

☐ The selected xMWF file is overwritten.

If there is no xMWF file with the selected file name, this check box has no effect.

Read device memory area

In the **Read device memory** area, you can read out the device memory, the so-called history file of the particle counter, and delete the history file from the particle counter.

Save



Reads the device memory and saves its entire contents as Patrick history file with the file name that you have entered in the **File** field. If the **Delete memory data after reading** check box is activated, the device memory of the particle counter is also deleted after reading and saving the history file.

File

Displays or changes the file name of the Patrick history file (*.xMWF).

Storage path



Opens the Windows **Save as** dialog.

Appending

- ☒ The Patrick history file is appended to the selected and existing xMWF file.
- ☐ The selected xMWF file is overwritten.

If there is no xMWF file with the selected file name, this check box has no effect.

Delete memory data after reading

- ☒ The history is deleted from the Patrick particle counter after reading and saving.
- ☐ The history is not deleted from the Patrick particle counter after reading and saving.

The deletion of the instrument memory cannot be undone.

Buttons area

In the **Buttons** area, the connection status of the Patrick particle counter is displayed.

Connection status



Indicates that the Patrick particle counter is connected.

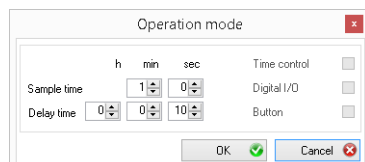


Indicates that the Patrick particle counter is not connected.

Operation mode dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Instrument > Online mode > Patrick Online window > Menu > Operation mode



The operation mode is a functionality of the Patrick particle counter. You set the operation mode directly on the particle counter.

⇒ **Patrick operating instructions**

Time control operation mode

In the **Time control** operation mode, the particle counter performs the measurement for the duration that is set under **Sample time**. Between measurements, the particle counter pauses for the duration set under **Delay time**. Both intervals, **Sample time** and **Delay time** are repeated in alternation.

- Time control**
- ☒ The **Time control** operation mode is active.
 - ☐ The **Time control** operation mode is not active.

Sample time Displays or changes how long the particle counter conducts a measurement.

You can make the following settings:

- **Min.**
Displays or changes minutes of the **Sample time**.
- **Sec.**
Displays or changes seconds of the **Sample time**.

EN

Delay time Displays or changes how long the particle counter pauses between measurements.

You can make the following settings:

- **H**
Displays or changes the hours of the **Delay time**.
- **Min.**
Displays or changes the minutes of the **Delay time**.
- **Sec.**
Displays or changes the seconds of the **Delay time**.

EN

Digital I/O operation mode

In the **Digital I/O** operation mode, the measurement lasts as long as there is a signal on the digital signal input.

The digital signal input is active as soon as it is connected to the ground. Then a current of $I = (U - 1,1 \text{ V}) / 5600 \Omega$, with U = supply voltage is applied.

- Digital I/O**
- ☒ The **Digital I/O** operation mode is active.
 - ☐ The **Digital I/O** operation mode is not active.

Button operation mode



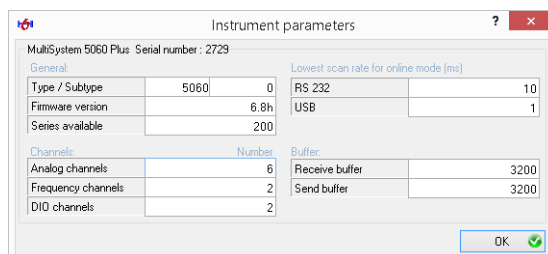
In the **Button** operation mode, you begin and end a measurement with the **DEL** button on the Patrick particle counter.

- Button**
- ☒ The **Button** operation mode is active.
 - ☐ The **Button** operation mode is not active.

Instrument parameters dialog

PROFESSIONAL **ADVANCED**

Menu > Instrument > Instrument parameters



If an instrument is connected to the software, you can display information about the instrument.

⇒ **Instruments** on page 26

Title Displays the name of the instrument and its serial number.

General area

The **General** area displays the following information.

- Type/Subtype** Displays the type and subtype of the instrument.
- Firmware version** Displays the firmware version of the instrument.
- Series available** Displays the free storage capacity (number of possible measurement series).

Channels area

The **Channels** area displays the following information.

- Analog channels** Displays the number of analog channels of the instrument.
- Frequency channels** Displays the number of frequency channels of the instrument.
- DIO channels** Displays the number of channels for the digital signal input.

Lowest scan rate for online mode (ms)

The **Lowest scan rate for online mode (ms)** displays the following information.

RS 232 Displays the minimum possible scan rate for RS 232 connections.

USB Displays the minimum possible scan rate for USB connections.

Buffer area

The **Buffer** area displays the following information.

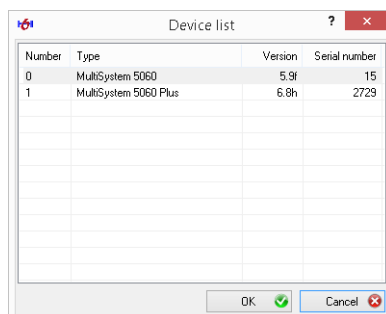
Receive buffer Displays the size of the data buffer used for the incoming connection to the software.

Send buffer Displays the size of the data buffer used for the outgoing connection to the software.

Device list dialog

PROFESSIONAL | **ADVANCED**

Menu > Instrument > Device list



You can connect several instruments to the software simultaneously, but only operate one at a time.

On the **Device list** dialog, you select the desired instrument.

⇒ **Instruments** on page 26

Number Displays the sequence in which the instruments are connected automatically. Instruments with lower numbers are connected first automatically.

Name Displays the name of the instrument.

Version Displays the firmware version of the instrument.

Serial number Displays the instrument's serial number.

EN

Dialogs for the Extras menu

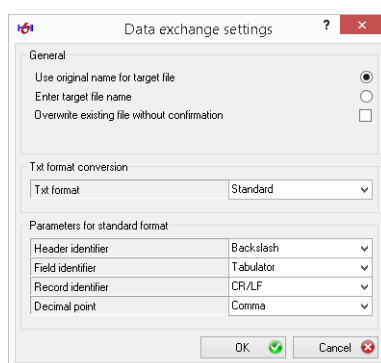
This section contains the description of the dialogs for the **Extras** menu.

Data exchange settings dialog

EN

PROFESSIONAL | **ADVANCED**

Menu > Extras > Data exchange > Format



With the software, you can export measurement value files in the text, CSV, or XML format in order to use these in other programs (e.g. spreadsheet programs). Furthermore, you can import measurement value files from text, CSV, or XML files.

⇒ **About measurement data exchange** on page 105

On the **Data exchange settings** dialog, you configure formats and parameters for text files for data exchange.

For CSV and XML files, you do not have to configure any formats and parameters.

Use original name for target file

The name of the original file is used for the exported file. The file extension changes depending on the desired export format. The file is saved in the same directory as the original file.

Enter target file name

During the export, the Windows **Save as** dialog opens.

The name and storage location of the export file can be selected at will. The file extension changes depending on the desired export format.

Overwrite existing file without confirmation

- ☒ Any existing file with the same name will be overwritten without confirmation.
- ☐ A warning message is displayed before the overwriting if there is a file with the same name.

Txt format conversion

In the [Txt format conversion](#) area, you change the default setting for the TXT conversion.

Txt format

Displays or changes the format for the export or import of text files.



Opens the drop-down list for changing the format.

The following formats are available for selection:

- **Standard**

This format is suitable for most applications and for the reimport into the software.

In the [Parameters for standard format](#), you can configure parameters for this format.

⇒ [Parameters for standard format area](#) on page 285

- **Special**

No settings are possible in the [Parameters for standard format](#) area.

- **DiaDem**

No settings are possible in the [Parameters for standard format](#) area.

The format is integrated for compatibility reasons with an older **HYDROcom** version. For Diadem there is a plug-in that allows the reading in of MWF files without conversion.

Parameters for standard format area

You can specify four parameters for the **Standard** text format.

⇒ **Text format conversion** on page 284

Check the requirements of the desired target application for the import of text files. Or adjust these settings to the text files that you would like to import.

If you have selected a format for text files other than standard, the **Parameters for standard format** area cannot be edited.

EN

Header identifier

Displays or changes which character marks header information.



Opens the drop-down list for changing the header identifier.

Field identifier

Displays or changes which character separates fields and table cells from one another.



Opens the drop-down list for changing the field formatting.

Record identifier

Displays or changes which character marks a record end.



Opens the drop-down list for changing the record identifier.

Decimal point

Displays or changes the decimal point.

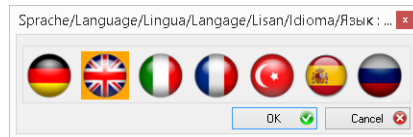


Opens the drop-down list for changing the decimal point.

Language dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Language



The **Language** dialog displays or changes the operation language of the software.

Click the flag symbol for the desired operation language, then click **OK**.

After a restart of the software, the selected operation language will be available.

If no language is selected, the following operation language will be used:

1. The default language of the operating system.
2. If the software does not support the default language of the operating system, English will be used.

EN

License dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > License

The **License** dialog displays the license information. You can apply for a license and transfer a software license purchased.

⇒ **Request license** on page 13

Current version area

For a licensed version, the **Current version** area displays the licensed program version and edition.

Version Displays the precise version of the software.

Base Indicates that the software is licensed in the edition **BASE**.

Advanced Indicates that the software is licensed in the edition **ADVANCED**.

Professional Indicates that the software is licensed in the edition **PROFESSIONAL**.

Request license area

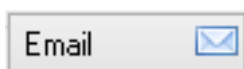
In the **Request license** area, you enter the data required for requesting a license. For the request, you can choose between **Email** and **Print**.

Flow of the license request

With the purchase, you decide in favor of the edition **ADVANCED** or **PROFESSIONAL** and you receive a serial number for the appropriate edition. You use this serial number of request a license on the **License** dialog.

From the serial number and hard disk ID, HYDROTECHNIK generates the license key. With the license key, you activate the software in the edition you have purchased.

Email



An e-mail is generated in the default e-mail program that automatically contains the information required for the license. You can add personal comments and send the e-mail.

Print



A document is generated that automatically contains the information required for the license. It is printed out automatically via the computer's default printer.

Name Displays or changes the name of the licensee.

The Windows user name is read out automatically. You can change the name.

This field must be filled in.

Company Displays or changes the company that is the licensee.

The license is issued to this company name. The company name is read out automatically if possible.

This field must be filled in.

The company name can be used for the header or footer lines of the printout.

⇒ **Print logo** on page 292

Email Displays or changes the licensee's e-mail address.

The license key will be sent to this e-mail address.

This field must be filled in.

- Telephone** Displays or changes the licensee's telephone number.
This field is optional for any questions.
- New serial number** For entry of a new serial number for a new license.
A serial number is required for the licensing.
This is not the serial number of the instrument, but rather the serial number of the edition of the software that you have purchased.
- Current serial number** Displays or changes the current serial number of an existing license.
This is required for an upgrade from the edition **ADVANCED** to **PROFESSIONAL**, for example.
- Hard disk ID** Displays an automatically-generated identification number.
This is a number read out automatically that is required for individualized licensing.

License area

You can enter the license key or import it from a file. To execute the licensing, click the **Check** button.

Check



Checks a license key and activates the licensed version and edition.

Click this button after you have imported a license key from a file or entered one in the **License key** field.

Open file



Opens the Windows **Open** dialog and imports a license key from an XML license key file.

The license key file will be sent to you and you can save it anywhere on your computer.

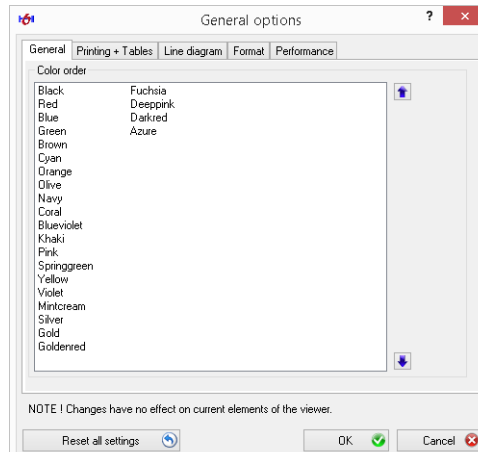
Click **Check** after you have imported the license key file.

- License key** Displays the imported or entered license key.

Options dialog

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options



The **Options** dialog has the following tabs:

- **General tab**
- **Printing + Tables tab**
- **Line diagram tab**
- **Formatting tab**
- **Performance tab**

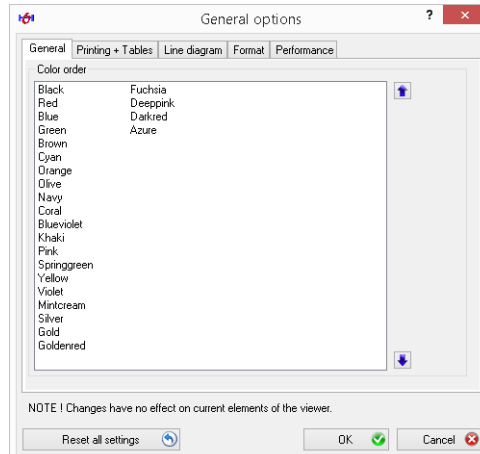
Buttons

Reset all settings Moves all configuration files (*.xml) into the recycle bin and reset the software to the delivery state.

General tab

PROFESSIONAL | **ADVANCED** | **BASE**

Menu > Extras > Options > General



In the **General** area, you can change the sequence of the colors that are available for the formatting of line and axis elements.

Deleting or adding colors is not possible.

up



Moves the marked color up in the sequence.

down



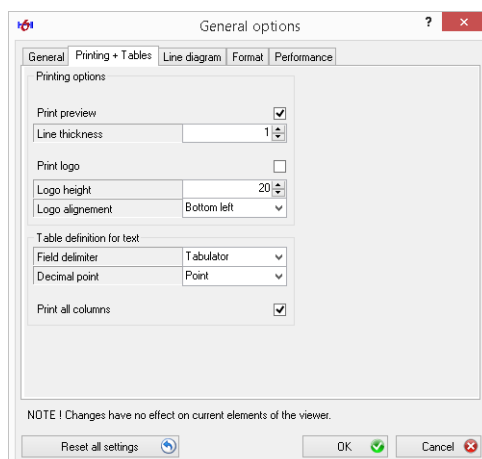
Moves the marked color down in the sequence.

EN

Printing + Tables tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > Printing + Tables



On the **Printing + Tables** tab, you configure default settings for printouts and parameters for the text output of tables.

Printing options area

In the **Printing options** area, you configure general default settings for printouts.

- | | |
|-----------------------|--|
| Print preview | <input checked="" type="checkbox"/> Before the actual printing begins, a print preview is displayed.
<input type="checkbox"/> Printing begins immediately. |
| Line thickness | Displays or changes the line thickness when printing graphics, diagrams, statistical information, etc. |
| Print logo | <input checked="" type="checkbox"/> Prints the company name that was entered under <i>Menu > Extras > License</i> .
<input type="checkbox"/> Does not print the company name.
⇒ Company on page 288 |

Logo height Displays or changes the height of the company name on the printout.

Logo alignment Displays or changes the position of the company name on the printout.



Opens the drop-down list for changing the logo alignment.

Table definition for text area

In the [Table definition for text](#) area, you define parameters for the text output of tables.

Field identifier Displays or changes how individual channels are separated.

Decimal point Displays or changes the decimal point.

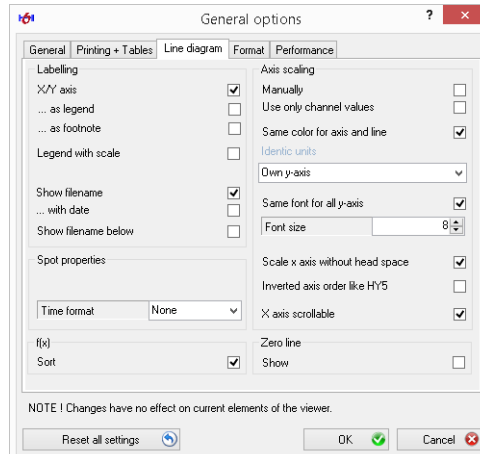
Print all columns

- ☒ All columns of a table in a presentation are printed, including those that are not visible in the presentation.
- ☐ Only such columns of a table are printed that are visible in the presentation.

Line diagram tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > Line diagram



On the **Line diagram** tab, you configure the display of line diagrams.

The settings can be overwritten with a configuration file.

⇒ **Configuration files** on page 86

Labelling area

In the **Labelling** area, you configure the labeling of the axes and possible legends.

- X/Y-axis**
- ☒ The Y-axis is visible and labeled in the display.
 - ☐ The Y-axis is not visible and labeled in the display.

- ...as legend**
- ☒ Displays *Measurement channel* and *Scaling* above the line diagram.
 - ☐ Does not display *Measurement channel* and *Scaling* above the line diagram.

If this check box and the **...as footnote** check box are not activated, *Measurement channel* and *Scaling* are not displayed.

- ...as footnote**
- ☒ Displays *Measurement channel* and *Scaling* below the line diagram.
 - ☐ Does not display *Measurement channel* and *Scaling* below the line diagram.

If this check box and the **...as legend** check box are not activated, *Measurement channel* and *Scaling* are not displayed.

- Legend with scale**
- ☒ In the legend of the line diagram, the measurement range of the channels is also displayed.
 - ☐ In the legend of the line diagram, the measurement range of the channels is not displayed.

- Display**
- ☒ The file name of the measurement series is displayed as title of the line diagram.
 - ☐ The file name of the measurement series is not displayed as title of the line diagram.

- ...with date**
- ☒ The file date is displayed in addition to the file name as title of the line diagram.
 - ☐ The file date is not displayed as title of the line diagram.

- Display file name bottom left**
- ☒ The file name of the measurement series is displayed at the bottom left of the line diagram window.
 - ☐ The file name of the measurement series is not displayed at the bottom left of the line diagram window.

Spot properties

In the **Spot properties** area, you configure the display of spots.

Time format Displays or changes how the time values on spot lines are displayed.



Opens the drop-down list for changing the time format display.

You have the following selection possibilities:

- **None**
Does not display any time values.
- **Only time**
Displays only the time.
- **Date + Time**
Displays date and time.
- **Offset**
Displays the distance of the time value from the zero point (beginning of the measurement).

Area f(x)

In the **f(x)** area, you configure the automatic sorting of measurement values.

- Sort**
- ☒ The measurement series are sorted automatically if a channel instead of the time is displayed on the X-axis.
 - ☐ The measurement values are not sorted automatically.

Axis scaling area

In the **Axis scaling** area, you configure the scaling of the line diagram.

- Manual**
- ☒ When generating a new line diagram, the manual input of the scaling is queried.
 - ☐ The manual input of the scaling is not queried.
- Use only channel values**
- ☒ The settings of the measurement channel are used for axis scaling.
 - ☐ The settings of the measurement channel are not used for axis scaling.

Identic units Displays or changes the behavior of the software if several measurement variables in a line diagram have the same units.



Opens the drop-down list for changing **Identical units**:

- **Own Y-axis**
All measurement variables receive their own Y-axes with individual scaling.
- **Own Y-axis same scale**
All measurement variables receive their own Y-axes. All Y-axes with the same unit have the same scaling. The scaling arises from the minimal and maximal value of all measurement variables with the same unit.
- **Joint Y-axis**
All measurement variables with the same unit are displayed on a Y-axis.

Same font for all Y-axes ☒ The same font is used for the labeling of all Y-axes. If you change a labeling, all other Y-axes will be changed automatically.
☐ The same font is not used for the labeling of all Y-axes.

Font size Displays or changes the font size of the axis labeling.

Scale X-axis without head space ☒ The X-axis is scaled up to the end of the measurement.
☐ The X-axis is scaled up to the next full scale value. The curve can end previously and there may be head space at the end of the line diagram.

Inverted axis order like HY5 ☒ The sequence of the Y-axes is displayed as in **HYDROcom 5**.
The **last** channel is displayed closest to the diagram.
☐ The sequence of the Y-axes is not displayed as in **HYDROcom 5**.
The **first** channel is displayed closest to the diagram.

X-axis scrollable ☒ If the scaling of the line diagram is larger than the viewer window, scrollbars are displayed and you can scroll horizontally.
☐ No scrollbars are displayed.

Zero line area

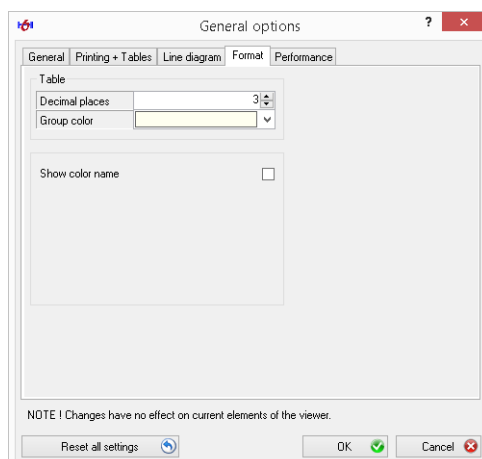
In the **Zero line** area, you configure whether the zero line is displayed on the line diagram for each channel. The zero line is displayed in the same color as the curve of the channel with narrow line width.

Show ☒ The zero line is displayed.
☐ The zero line is not displayed.

Formatting tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > Formatting



On the **Formatting** tab, you configure formatting settings that are valid globally for the software.

Decimal places Displays or changes the number of places after the decimal point.

Group color Displays or changes the color with which the groups are identified.
This color is used on the **Details** and **Statistics** tabs of the Explorer.
⇒ **Details tab** on page 149
⇒ **Statistics tab** on page 150



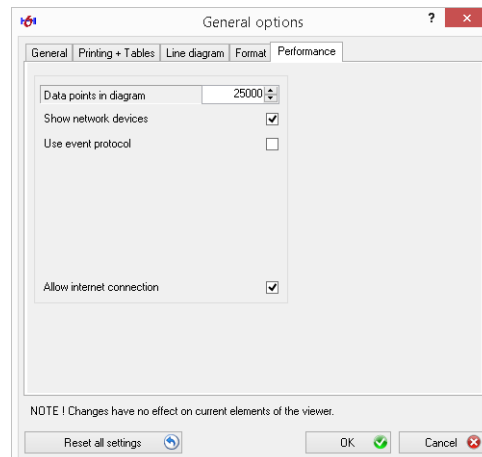
Opens the drop-down list for changing the group color.

Show color name ☒ In drop-down lists where you can select colors, the names of the colors are also displayed.
☐ In drop-down lists where you can select colors, only the colors are displayed.

Performance tab

PROFESSIONAL **ADVANCED** **BASE**

Menu > Extras > Options > Performance



On the **Performance** tab, you configure settings that may make the software perform better.

Data points in diagram

Displays or changes the number of data points per channel from which a line diagram should be drawn.

The smaller the value, the faster the line diagram will be created. This filter can be switched on and off using the context menu of the line diagram (**Optimized display** option).

⇒ **Optimized display speed** on page 116

Show network devices

- ☒ The Explorer searches for network devices.
- ☐ The Explorer does not search for network devices.

If no network devices are required, you can deactivate this check box. This makes the Explorer display faster.

Use event protocol

- ☒ Writes a log file that can be used for troubleshooting with customer service.
- ☐ Does not write a log file.

You must only activate this check box after you have been asked to do so by customer service.

Allow internet connection

- ☒ The software can establish connections with the Internet.
- ☐ The software cannot establish connections with the Internet.

Via an Internet connection the software can search for new versions of the software itself or for new firmware versions for connected instruments.

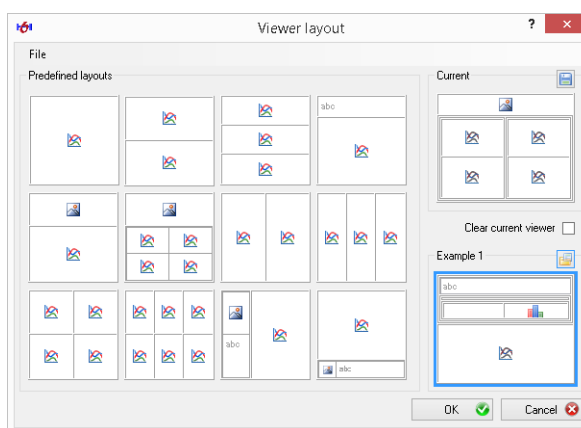
Dialogs for the Viewer menu

This section contains a description of the dialogs for the **Viewer** menu.

Viewer layout dialog

PROFESSIONAL | ADVANCED

Menu > Viewer > Layout



On the **Viewer Layout** dialog you configure the layout and combination of various displays, such as tables and diagrams.

You can save the current viewer layout as default or as configuration file.

⇒ **About the viewer, layouts, and presentations** on page 24

File menu

On the **File** menu you have various possibilities for saving viewer layouts and restoring factory settings.

Save current viewer



Opens the Windows **Save as** dialog.

Saves the current layout in a configuration file (*.xHYL).

Save as default



Saves the currently-displayed viewer layout as default viewer layout.

All new viewer receive this viewer layout.

Delete the current default setting



Deletes the saved default viewer layout. The factory settings are used.

Predefined layouts area

In the **Predefined layouts** area, 12 default viewer layouts are displayed.

Select one of these layouts.

EN

Current area

The **Current** area displays the currently-active layout of the viewer.

Save these properties as file



Opens the Windows **Save as** dialog.

Saves the current layout in a configuration file (*.xHYL).

Clear current viewer

- ☒ For the takeover of the new layout, all existing layout areas including content are deleted.
- ☐ For the takeover of the new layout, the content is distributed to the areas of the new layout.

Select from file area

In the **Select from file** area, you can load a viewer layout from a configuration file. A preview displays the loaded viewer layout.

Search for other property files



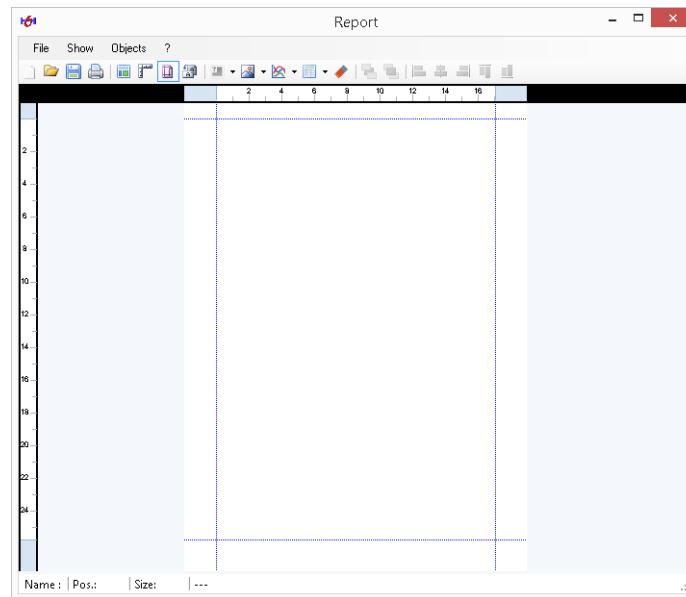
Opens the Windows **Open** dialog.

Loads a viewer layout from a configuration file (*.xHYL).

Report Application

PROFESSIONAL

Menu > Report



With the **Report** application, you can create visually-appealing reports from one or several presentations.

Compiling a report

PROFESSIONAL

In order to compile a report, perform the following steps:

- **Set up work area**
- **Inserting an element**

EN

Set up work area

PROFESSIONAL

Begin creating a report by setting up the work area.

Setting up the work area includes the following activities:

- **Set up page**
- **Displaying ruler, side margins and grid**

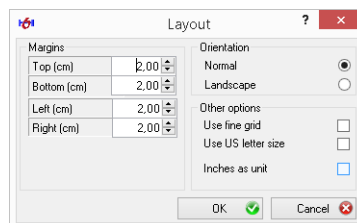
Set up page

PROFESSIONAL

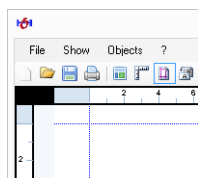
On the [Layout](#) dialog, you can specify dimensions, page size, orientation of the page, and dimension units.

→ How to set up the page

- 1 Select **Report application > Menu > View > Layout**.

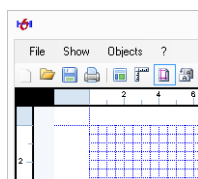
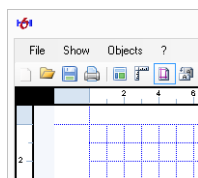


- 2 For narrower or wider margins, change the margins to the desired dimension.



- 3 For a report in landscape format, change the orientation.
- 4 For a narrow grid, activate the **Narrow Grid** tick box.

The grid is an aid for aligning the elements. The **Narrow Grid** option allows a narrow alignment with this aid.



- 5 For a report in an imperial page format instead of in a metric and one and with imperial measurement units, activate the **US Letter** tick box and the **Inch as Unit** tick box.



Displaying ruler, side margins and grid

PROFESSIONAL

The ruler, side margins and grid are aids for aligning the elements.

→ How to display the ruler, side margins and grid

- 1 To display the ruler, select [Report application > Menu > View > Ruler](#).



Indicates that the ruler is displayed.

- 2 To display the side margins, select [Report application > Menu > View > Side Margins](#).

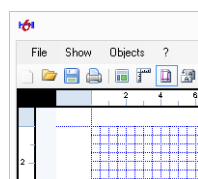
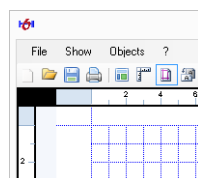


Indicates that the side margins are displayed.

- 3 To display the grid, select [Report application > Menu > View > Grid](#).



Indicates that the grid is displayed.



The ruler, side margins and grid are displayed.



Inserting an element

PROFESSIONAL

You can insert the same elements into a report as into presentations.

There are the following possibilities for inserting elements into reports:

- **Inserting element from an open presentation**
- **Inserting new text**
- **Inserting a new picture**

Line diagrams, histograms, classifications and tables can only be inserted from a presentation.

Texts and pictures can be inserted from a presentation or created as new elements directly in the report.

Report as template

If the **Overwrite** tick box is activated, elements of the report will be replaced with new information. You can use an existing report as a template.

⇒ **Overwrite** on page 137

⇒ **Saving a report** on page 323

Inserting element from an open presentation

PROFESSIONAL

If you have already created a presentation, you can take over elements from the presentation into the report.

➔ How to insert an element from an open presentation using drag & drop

- 1 Place the main window with the presentation and the **Report** window next to one another on your screen.
- 2 While holding down the **Ctrl** key, use drag & drop to drag an element from the presentation into the report.

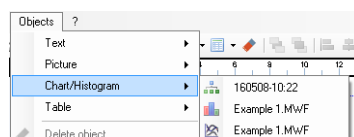


→ How to insert an element from an open presentation using menu commands

1 Select *Report application > Menu > Objects*:

- *Text*
- *Picture*
- *Line Diagram/Histogram*
- *Table*

2 If the presentation contains one of the desired elements, this is indicated on the appropriate submenu.



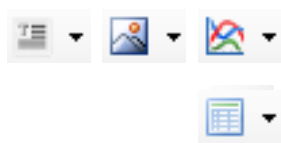
3 Click the desired element to insert it.

4 If necessary, change the display or position of the element.

⇒ **Editing functions** on page 310

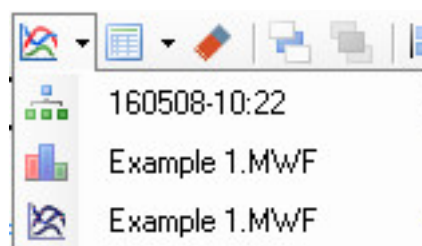


→ How to insert an element from an open presentation using the buttons



1 Click the drop-down lists for the **Text**, **Picture**, **Line Diagram/Histogram**, or **Table** buttons to insert an element.

2 If one of the desired elements is included in the presentation, it is displayed on the appropriate drop-down list.



3 Click the desired element to insert it.

4 If necessary, change the display or position of the element.

⇒ **Editing functions** on page 310



Inserting new text

PROFESSIONAL

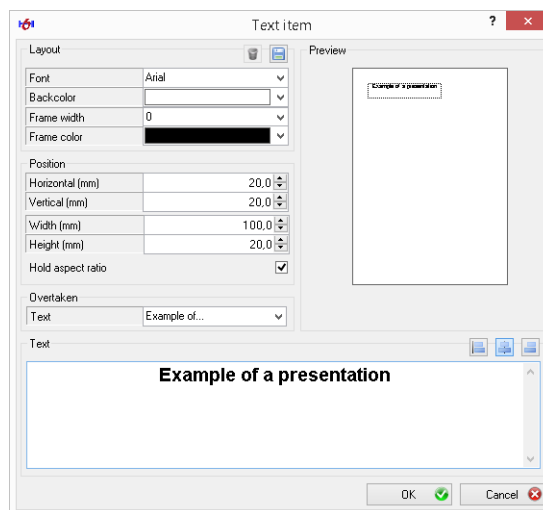
You can insert a text into the report and specify the display of the text.

→ How to insert a new text



- 1 Click the **Text** button.

The **Text Element** dialog opens.



- 2 Enter your text in the **Text** area.
- 3 If necessary, change the display and position of the text.
⇒ **Changing a text element** on page 312
- 4 Click **OK** to insert the element.



Inserting a new picture

PROFESSIONAL

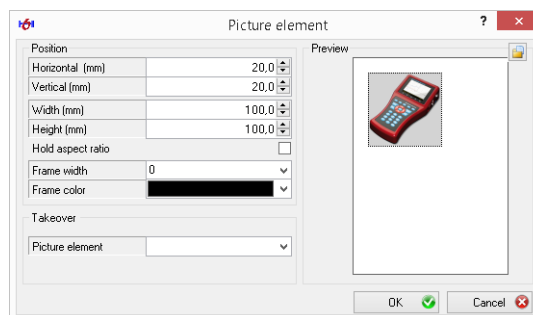
You can insert a picture into the report and specify the display of the picture.

→ How to insert a new picture



- 1 Click the **Picture** button.

The **Picture Element** dialog opens.



- 2 Click the **Open** button to select a picture file.

The Windows **Open** dialog opens.

- 3 Select a picture file.

The selected picture is displayed in the **Preview** area.

- 4 If necessary, change the display and position of the picture.

⇒ **Changing a picture element** on page 315

- 5 Click **OK** to insert the element.



Editing functions

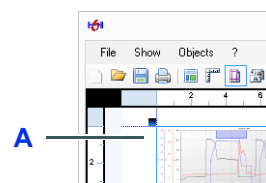
PROFESSIONAL

You can scale, position, and adjust elements in the report.

Scaling and shifting elements

PROFESSIONAL

After you have placed an element in the report, you can click it. Handles appear at the corners of the element.



A Handle

→ How to scale and shift an element

- 1 Mark an element with the mouse.
- 2 Scale or shift the element with the mouse.



Positioning elements exactly

PROFESSIONAL

The grid or the fine grid is helpful for exact positioning.

⇒ **Displaying ruler, side margins and grid** on page 305

Aligning elements on the side margins

PROFESSIONAL

When you align elements on the side margins, you leave a space up to the edge of the sheet.

You specified the side margins when setting up the page.

⇒ **Set up page** on page 303

→ How to align an element on the side margins

- 1 Click the element to mark it.
- 2 Select *Report application > Menu > Objects:*
 - *Align Left* – **Home** key
 - *Align Middle* – **F6** key
 - *Align Right* – **End** key
 - *Align Top* – **Page Up** key
 - *Align Bottom* – **Page Down** key



Aligning elements with the arrow keys

PROFESSIONAL

You can shift elements with the **arrow** keys on the keyboard

→ How to shift an element with the arrow keys

- 1 Click the element to mark it.
- 2 Press the appropriate **arrow** key multiple times in order to shift the element.

Use the grid as an alignment aid.



Changing elements

PROFESSIONAL

You can change the positioning and display of each element.

Changing a text element

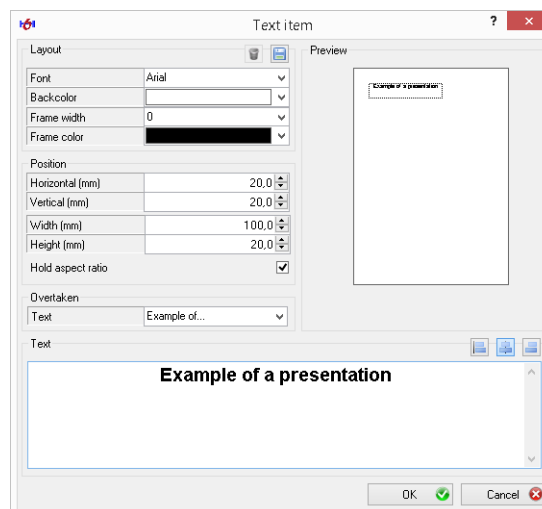
PROFESSIONAL

You change the positioning and display of text elements on the **Text Element** dialog.

→ How to change a text element

- 1 Click the element to mark it.
- 2 Select *Report application > Menu > Objects > Properties*.

The **Text Element** dialog opens.



- 3 Adjust the settings
- 4 Click **OK** to confirm the dialog.

■

Layout area

In the **Layout** area, you define the display of the text element.

Delete this property



Deletes the saved default properties. The factory settings will be used.

All new text elements are assigned the factory settings.

Save these properties as default



Saves the current properties as default.

All new text elements are assigned these properties.

Font

Displays or changes the font.



Opens the drop-down list for changing the font.

Background Colour

Displays or changes the background colour of the text element.



Opens the drop-down list for changing the background colour.

Frame Width

Displays or changes the width of the frame around the element.



Opens the drop-down list for changing the frame width.

With a value of 0, no frame is displayed.

Frame Color

Displays or changes the color of the frame.



Opens the drop-down list for changing the frame color.

Position area

in the **Position** area, you define the position of the element.

Horizontal (mm)

Displays or changes the horizontal position of the left top corner of the element with respect to the left top corner of the side.

Vertical (mm)

Displays or changes the vertical position of the left top corner of the element with respect to the left top corner of the side.

Width (mm)

Displays or changes the width of the element.

Height (mm)

Displays or changes the height of the element.

Keep Aspect Ratio

☒ In case of size changes, the ratio of width to height is retained.

☐ In case of size changes, the ratio of width to height is not retained. The element can thus be distorted.

Apply area

In the **Apply** area, you can select a text for the open presentation. The text of the element is replaced with the one selected.

Text Displays or changes the text of the open presentation.



Opens the drop-down list for selection of the text.

Preview area

The **Preview** area shows how the text will look in the report.

Text area

In the **Text** area, you change the text and specify the horizontal alignment.

Align left



Aligns the text left-flush.

Align middle



Aligns the text so it is centred.

Align right



Aligns the text right-flush.

Changing a picture element

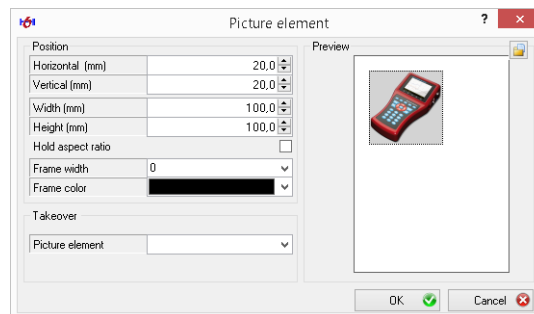
PROFESSIONAL

You change the positioning and display of picture elements on the **Picture Element** dialog.

→ How to change a picture element

- 1 Click the element to mark it.
- 2 Select *Report application > Menu > Objects > Properties*.

The **Picture Element** dialog opens.



- 3 Adjust the settings
- 4 Click **OK** to confirm the dialog.



Position area

In the **Position** area, you define the alignment, frame colour and frame width of the element.

- Horizontal (mm)** Displays or changes the horizontal position of the left top corner of the element with respect to the left top corner of the side.
- Vertical (mm)** Displays or changes the vertical position of the left top corner of the element with respect to the left top corner of the side.
- Width (mm)** Displays or changes the width of the element.
- Height (mm)** Displays or changes the height of the element.

- Keep Aspect Ratio**
- ☒ In case of size changes, the ratio of width to height is retained.
 - ☐ In case of size changes, the ratio of width to height is not retained. The element can thus be distorted.

Frame Width Displays or changes the width of the frame around the element.



Opens the drop-down list for changing the frame width.

With a value of 0, no frame is displayed.

Frame Colour Displays or changes the colour of the frame.



Opens the drop-down list for changing the frame colour.

Apply area

In the **Apply** area, you can select a picture from the open presentation. The picture of the element is replaced with the one selected.

Picture element Displays or changes the picture from the open presentation.



Opens the drop-down list for changing the picture.

Preview area

The **Preview** area shows how the picture will look in the report.

Open



Opens the Windows **Open** dialog.

Loads a picture from a file.

Changing a line diagram/histogram/classification element

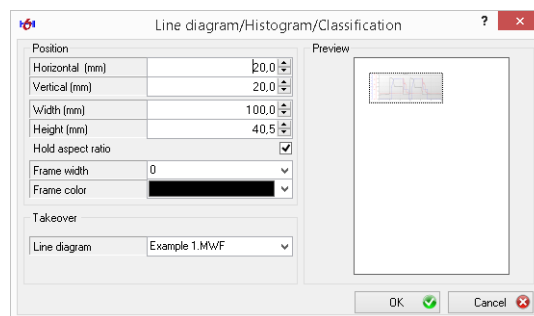
PROFESSIONAL

You change the positioning and display of line diagrams/histograms/classification element on the **Line Diagram/Histogram/Classification** dialog.

→ How to change a line diagram/histogram/classification element

- 1 Click the element to mark it.
- 2 Select *Report application > Menu > Objects > Properties*.

The **Line Diagram/Histogram/Classification** dialog opens.



- 3 Adjust the settings
- 4 Click **OK** to confirm the dialog.



Position area

In the **Position** area, you define the position, frame colour, and frame width of the element.

- Horizontal (mm)** Displays or changes the horizontal position of the left top corner of the element with respect to the left top corner of the side.
- Vertical (mm)** Displays or changes the vertical position of the left top corner of the element with respect to the left top corner of the side.
- Width (mm)** Displays or changes the width of the element.
- Height (mm)** Displays or changes the height of the element.

- Keep Aspect Ratio**
- ☒ In case of size changes, the ratio of width to height is retained.
 - ☐ In case of size changes, the ratio of width to height is not retained. The element can thus be distorted.

Frame Width Displays or changes the width of the frame around the element.



Opens the drop-down list for changing the frame width.

With a value of 0, no frame is displayed.

Frame Colour Displays or changes the colour of the frame.



Opens the drop-down list for changing the frame colour.

Apply area

In the **Apply** area, you can select a line diagram, histogram, or classification for the open presentation. The line diagram, histogram, or classification of the element is replaced by the selected object.

**Line Diagram/
Histogram/
Classification** Displays or changes the line diagram, histogram, or classification of the open presentation.



Opens the drop-down list for changing the line diagram, histogram, or classification.

Preview area

The **Preview** area displays how the line diagram, histogram, or classification will look in the report.

Changing a table element

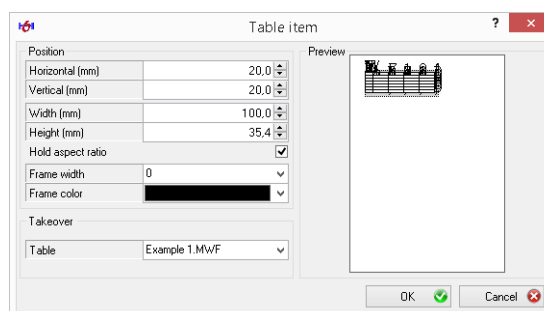
PROFESSIONAL

You change the positioning and display of table elements on the **Table Element** dialog.

→ How to change a table element

- 1 Click the element to mark it.
- 2 Select *Report application > Menu > Objects > Properties*.

The **Table Element** dialog opens.



- 3 Adjust the settings
- 4 Click **OK** to confirm the dialog.

■

Position area

In the **Position** area, you define the position, frame colour, and frame width of the element.

- Horizontal (mm)** Displays or changes the horizontal position of the left top corner of the element with respect to the left top corner of the side.
- Vertical (mm)** Displays or changes the vertical position of the left top corner of the element with respect to the left top corner of the side.
- Width (mm)** Displays or changes the width of the element.
- Height (mm)** Displays or changes the height of the element.

- Keep Aspect Ratio**
- ☒ In case of size changes, the ratio of width to height is retained.
 - ☐ In case of size changes, the ratio of width to height is not retained. The element can thus be distorted.

Frame Width Displays or changes the width of the frame around the element.



Opens the drop-down list for changing the frame width.

With a value of 0, no frame is displayed.

Frame Colour Displays or changes the colour of the frame.



Opens the drop-down list for changing the frame colour.

Apply area

In the **Apply** area, you can select a table for the open presentation. The previous table is replaced with the selected element in the report.

In the **Apply** area, you can select a table for the open presentation. The table of the element will be replaced with the selected one.

Table Displays or changes the table of the open presentation.



Opens the drop-down list for changing the table.

Preview area

The **Preview** area shows how the table will look in the report.

Printing a report

PROFESSIONAL

After you have created a report, you can print out the report.

→ How to print a report

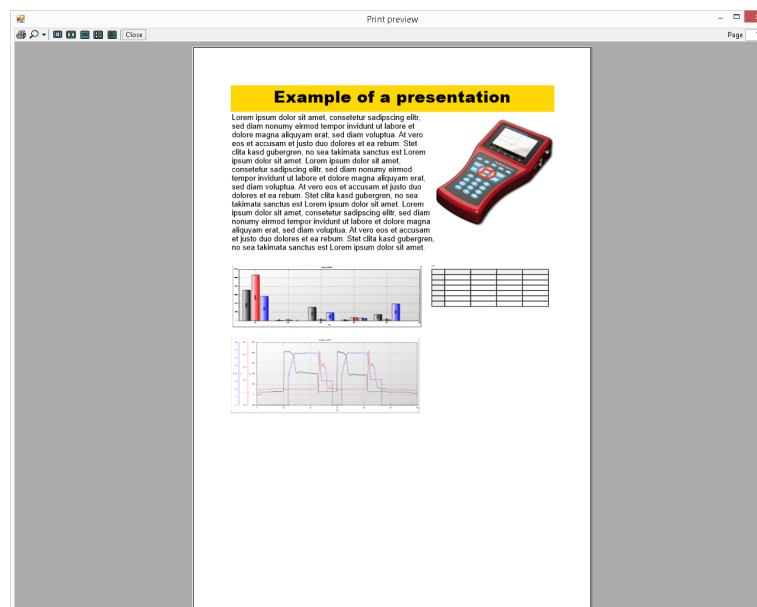
- 1 Select **Report application > Menu > File > Print**.

The Windows **Print** dialog appears.

- 2 If necessary, change settings on the Windows **Print** dialog.

- 3 Select **Print** on the Windows **Print** dialog.

The **Page View** window opens and shows a print preview.



- 4 Check the print preview.



- 5 To send the report to the printer, click **Print**.

- 6 Close the **Page View** window.



Print



Sends the report to the printer that you have selected previously on the Windows **print** dialog.

Zoom



Enlarges the print preview on the **Page View** window.

One Page



Displays each page individually in the **Page View** window.

Two Pages



Displays pages in pairs in the **Page View** window.

Three Pages



Displays three pages at once in the **Page View** window.

Four Pages



Displays four pages at once in the **Page View** window.

Six Pages



Displays six pages at once in the **Page View** window.

Close Closes the **Page View** window.

Page Displays the selected page in the **Page View** window.

Saving a report

PROFESSIONAL

After you have created a report, you can save the report as native *HPT file* or as *PDF file*:

- *HPT files* can only be opened with the *Report* application. HTP files can be edited in the **Report** application.

This format is suitable as template for reports.

⇒ **Report as template** on page 306

- *PDF files* can be viewed on computers with reader software. PDF files cannot be edited with the **Report** application.

This format is suitable for archiving or forwarding reports.

➔ How to save a report as a HPT file

- 1 Select *Report application > Menu > File > Save*.

The Windows **Save as** dialog opens.

- 2 Select a folder and specify a file name.

The report is saved as HPT file.



➔ How to save a report as PDF file

- 1 Select *Report application > Menu > File > Save as PDF*.

The Windows **Save as** dialog opens.

- 2 Select a folder and specify a file name.

The report is saved as PDF file.



List of the buttons in the Report application

PROFESSIONAL

The buttons offer quick access to frequently-used functions.

New



Creates a new, empty report.

Any open report is lost if you do not save it before closing.

Open



Opens a report file (*.hpt).

Save



Saves the report as HPT file.

⇒ **Saving a report** on page 323

Print



Prints the report.

⇒ **Printing a report** on page 321

Layout



Opens the Layout dialog.

⇒ **Set up page** on page 303

Ruler



Displays ruler.

⇒ **Displaying ruler, side margins and grid** on page 305

Show margins



Shows helper lines that mark the side margins.

⇒ **Displaying ruler, side margins and grid** on page 305

Landscape format



Changes the orientation of the report between portrait and landscape format.

Text



Inserts new text or inserts text from an open presentation.

⇒ **Inserting new text** on page 308

⇒ **Inserting element from an open presentation** on page 306

Picture



Inserts a new picture or inserts a picture from an open presentation.

⇒ **Inserting a new picture** on page 309

⇒ **Inserting element from an open presentation** on page 306

Line Diagram/Histogram



Opens the **Line Diagram/Histogram/Classification** dialog or inserts a line diagram, histogram, or classification from an open presentation.

⇒ **Inserting element from an open presentation** on page 306

⇒ **Changing a line diagram/histogram/classification element** on page 317

Table



Opens the **Table Element** dialog or inserts a table from an open presentation.

⇒ **Inserting element from an open presentation** on page 306

⇒ **Changing a table element** on page 319

Delete Object



Deletes an object from the report.

In the Background



Places an object in the background.

In the Foreground



Retrieves an object into the foreground.

Align Left



Aligns an object on the left margin.

Align Middle



Centres an object horizontally.

Align Right



Aligns an object on the right margin.

Align Top



Aligns an object on the top margin.

Align Bottom



Aligns an object on the bottom margin.