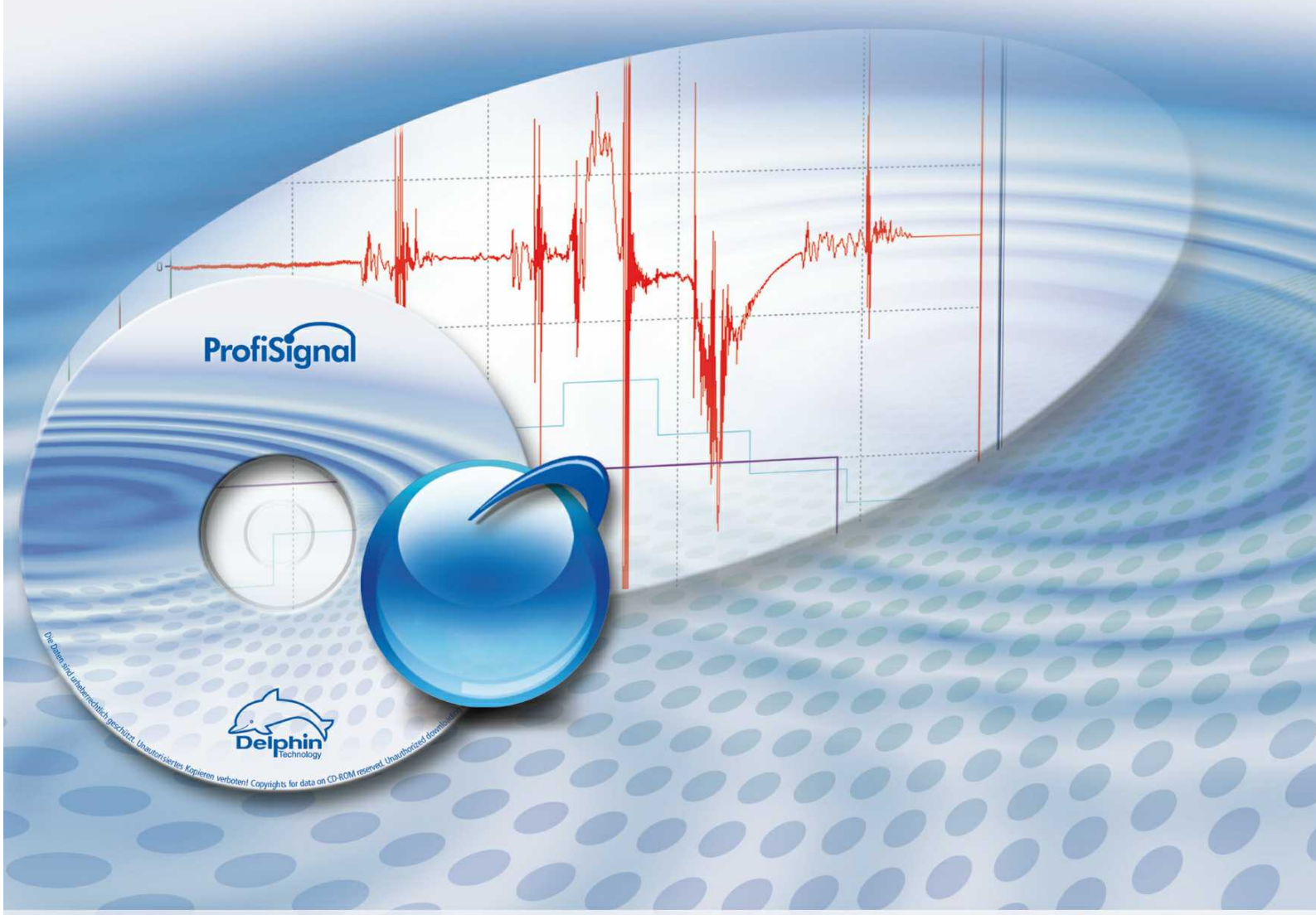
ProfiSignal Go

SOFTWARE MANUAL

ProfiSignal Go – User guide



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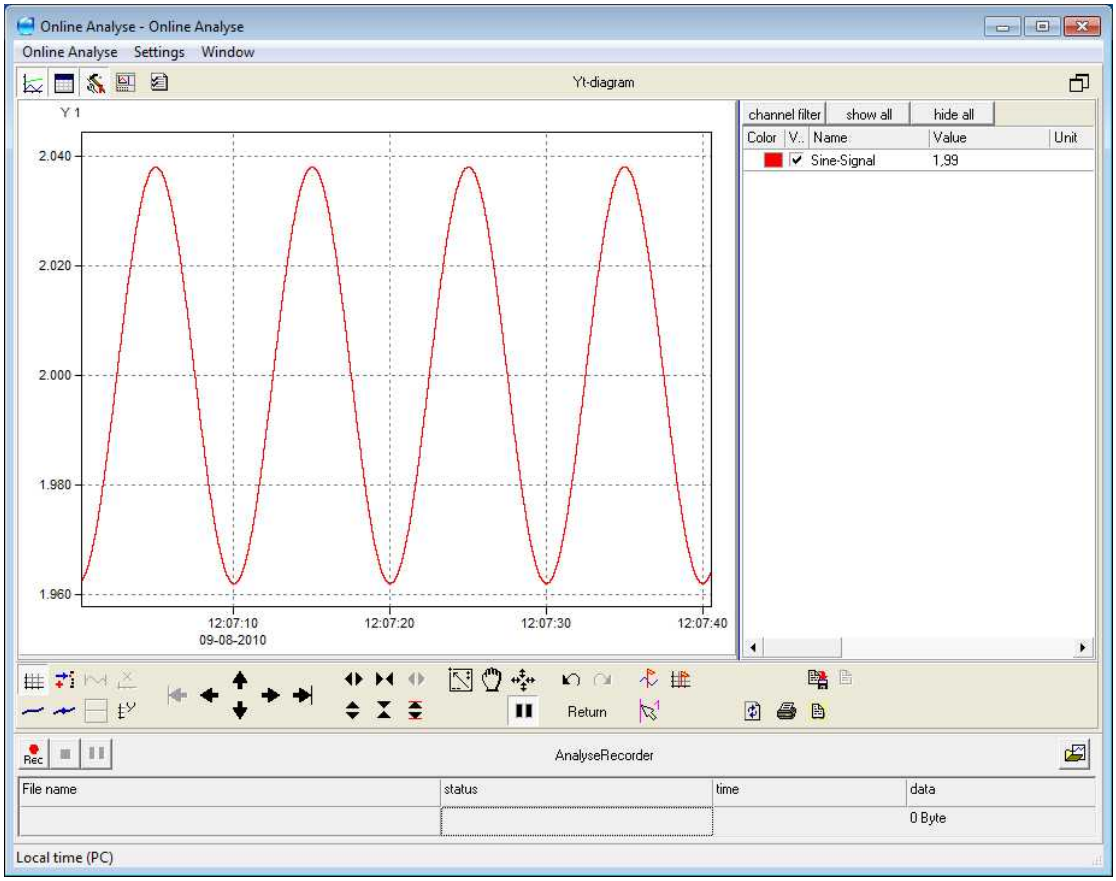
ProfiSignal Go manual

Discover ProfiSignal Go

- Measurement data acquisition and evaluation
- Export measurement data to other programs
- Trend diagrams, characteristic curves, logic diagrams
- Continuous data acquisition and evaluation of long-term data
- Measurement series data recording using predefined start/stop conditions
- Manual start/stop for data recording



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1 Product overview

Dear Customer,

In contrast to other products, which provide only basic measurement data acquisition functions, ProfiSignal Go gives users a comprehensive range of data acquisition and evaluation tools as well as access to historical data and historical data evaluation. In our view, ProfiSignal provides the simplest, fastest and most flexible way to fulfill such requirements.

The *Online Analysis* section shows the quickest way to visualize measurement data and to display the data as trends.

Upgrading to Basic or Klicks

You can upgrade to ProfiSignal Basic or ProfiSignal Klicks at any time.

ProfiSignal Basic is recommended when multiple processes are to be visualized. ProfiSignal Basic also provides static reporting functions.

ProfiSignal Klicks includes ProfiSignal Go and ProfiSignal Basic. ProfiSignal Klicks enables the automation of measurement procedures, test stands and processes as well as dynamic reporting functions.

Info:

The F1 key provides context relevant help, i.e. specific information on the system features currently being used.

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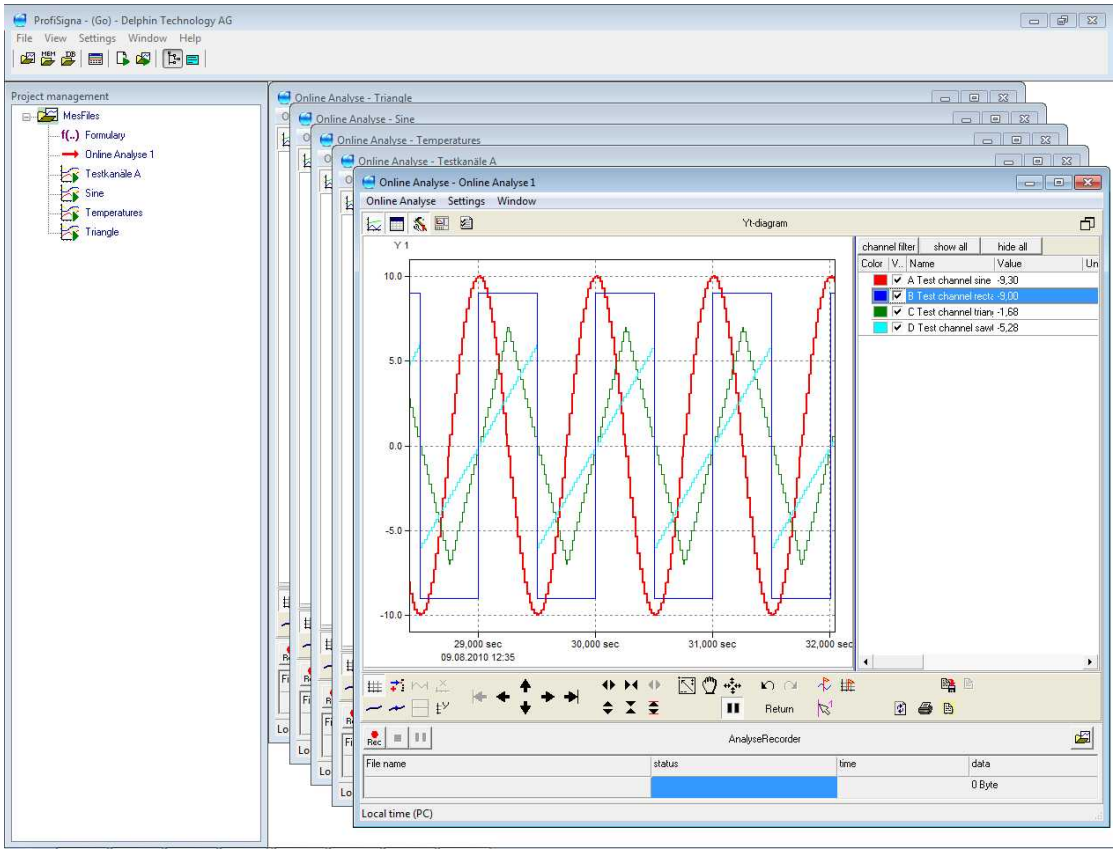
1.1 Benefits of Online Analysis

Online Analysis offers many unique features. The most important of these is the well-known and and fastest method to visualize measurement data on a screen, and the simplest method of analysing measurement data.

Online Analysis can run parallel to other system operations without affecting their functioning.



Online Analysis is typically used for: servicing, in mobile applications, fault detection, start-ups etc.

The following functions have a tried and tested record:

- Options for trend charts (Yt), characteristic curves (Yx) or logic diagrams.
- Online Analysiss can access historical data saved in the background.
- Measurement series can be automatically generated with predefined start/stop conditions.
- Measurement series can be manually started/stopped.
- Any number of Online Analysiss can be set up. A diagram is set up for each Online Analysis.
- Each Online Analysis is automatically assigned the user-defined configuration. Configuration data can be stored and used as a default for other Online Analysiss.

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- Multiple Online Analysiss can be run simultaneously.
- Individual Online Analysiss can be opened as required, the measurement data acquired and evaluated.
- Each Online Analysis can be assigned an individual name.

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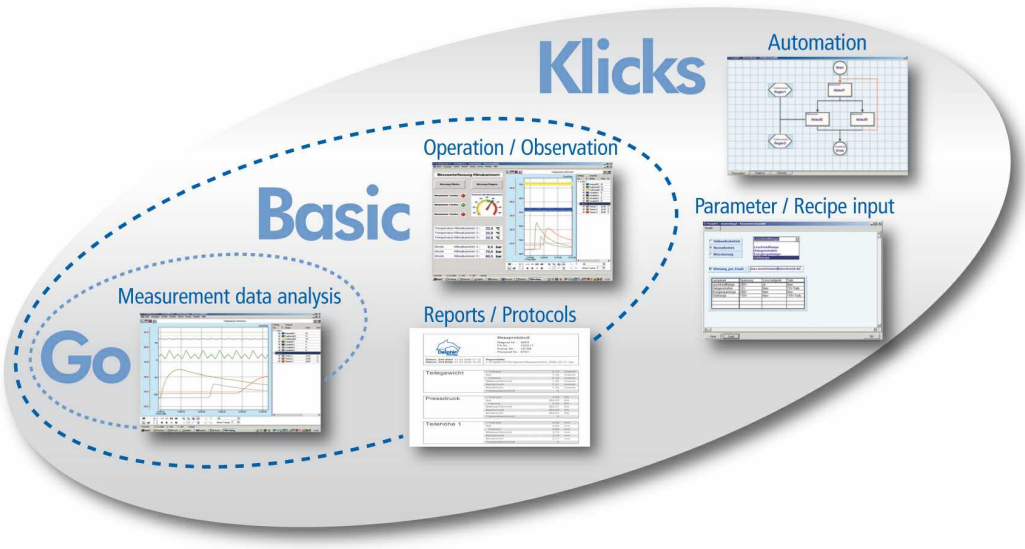
1.2 ProfiSignal product family

1. Overview

- ProfiSignal Go is first-level online analysis software for measurement data acquisition and evaluation.
- ProfiSignal Basic contains ProfiSignal Go and provides operating and monitoring objects as well as trend diagram and characteristic curve functions.
- ProfiSignal Klicks includes ProfiSignal Go and ProfiSignal Basic. It is equipped with the Klicks interactive, technician programming language that enables the automation of processes.

ProfiSignal Go can be upgraded to ProfiSignal Basic or ProfiSignal Klicks.

ProfiSignal Basic can be upgraded to ProfiSignal Klicks



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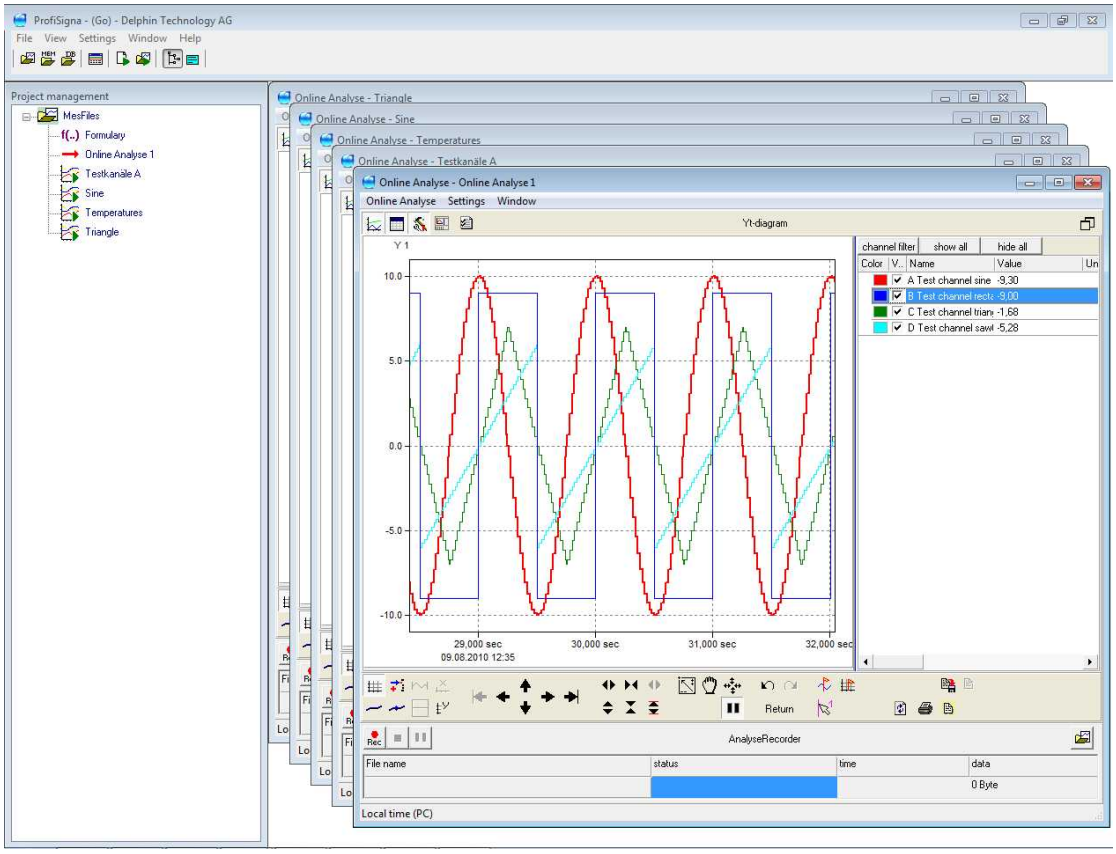
1.2.1 ProfiSignal Go

Online Analysis offers many unique features. These include the fastest and well-known method for visualizing measurement data on the screen as well as the simplest method for analysing measurement data.

Online Analysis can run parallel to other system operations without affecting their functioning.

Online Analysis is therefore ideal for servicing, mobile applications, fault detection, start-ups etc.



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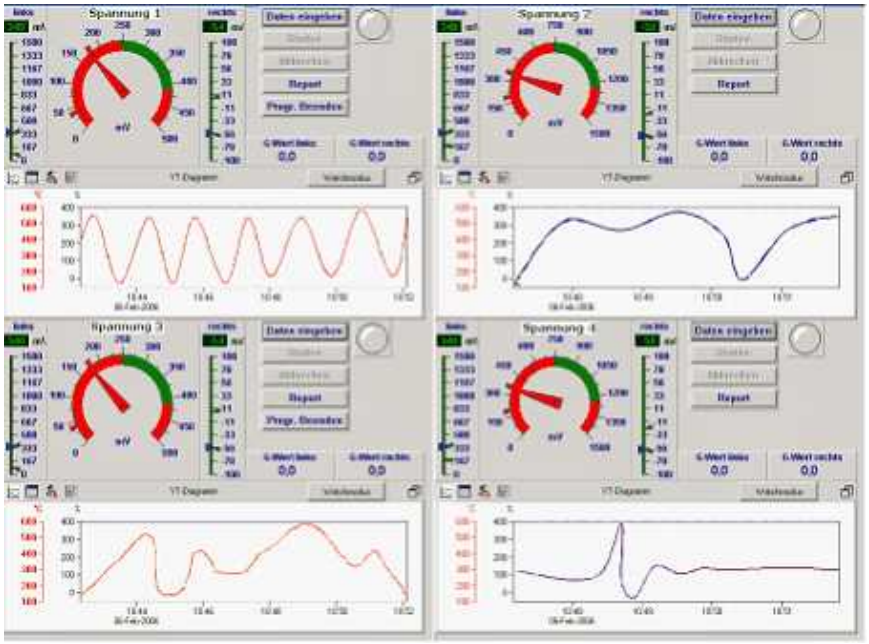
1.2.2 ProfiSignal Basic

Process visualization (known as ProzessVisu or Visu for short) is the software module for process operation, observation and monitoring.

Users can easily generate their own visualization views using operating and observation objects as well as trend diagrams and characteristic curves.

Visu is especially suited to experiments, testing procedures, test stands and production processes. Data and usage information can be acquired and evaluated.



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1.2.3 ProfiSignal Klicks

ProfiSignal Klicks includes ProfiSignal Go and ProfiSignal Basic.

ProfiSignal Klicks enables automation of experiments, testing procedures, test stands and production processes.

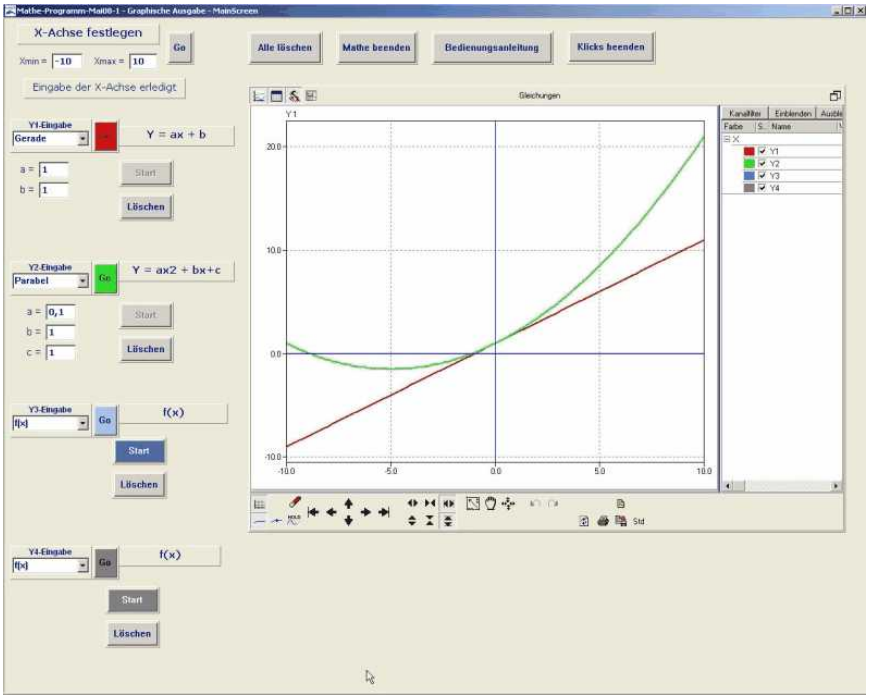
Klicks is a language developed for technicians, engineers and scientists that requires no IT specialist.

Klicks is a unique product because

- it requires no learning
- no lengthy familiarisation is required
- there is no requirement to learn a programming code or instruction set
- no typing up of program code is necessary
- programming maintenance is simple
- no specialist IT skills are required

Operation is extremely user friendly with programming instructions being selected from context menus. The typing in of programming code or the learning of a programming language is therefore unnecessary. This is a major difference to conventional programming languages.

ProfiSignal Klicks programs can therefore be said to be configured rather than written as in conventional programming techniques.



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1.3 Content overview

1. Software activation

Activating the ProfiSignal license. *ProfiSignal Go* comprises two programs: the *DataService Configurator* and Profisignal Go.

2. ProfiSignal Go - Outline

The hardware manuals provide information on hardware configuration. Configuration is a prerequisite for working with ProfiSignal.

Start the program via the desktop icon.

Integrating ProfiSignal into a network.

General settings for individual requirements.

Adapt ProfiSignal Go to your requirements when you wish to have alternatives to the default settings.

3. Online analysis

Online analysis provides acquisition, evaluation, storage and export of measurement data.

Any number of Online Analysiss can be set up. A diagram is set up for each Online Analysis. This can be a trend (Yt-diagram), a characteristic curve (YX-diagram) or a logic diagram.

Each Online Analysis is automatically assigned the user-defined configuration.

4. Trends, Yt-diagrams

Learn how to operate, configure, assign channels and evaluate measurement data using trend diagrams.

A trend can process large numbers of channels. Specific channels can be accessed using a hide/show function.

Up to four axes can be used. Channels can be assigned to the individual axes. Axes can be extended and compressed. Axes can be panned.

A trend diagram is assigned to an Online Analysis.

5. Storing measurement data from an Online Analysis

ProfiSignal Go enables continuous and batch data storage.

Data be recorded while measurement data files are being set up with start/stop settings. Data records can also be set up with manual start/stops.

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6. Measurement data analysis

An operating and analysis mode is available in ProfiSignal Go during runtime.

The operating mode runs online and provides access to the the most up to date data.

The analysis mode runs offline with online/offline switching available at the click of the mouse.

ProfiSignal Go has an extensive range of analysis functions. The functions are operated via toolbar buttons.

7. Appendix: Test channels

Test channels are channels that require no hardware.

When hardware is unavailable, test channels can be used instead of hardware channels.

These enable functions such as sinus, square and sawtooth to be assigned to the separate channels.

Test channels can be used to learn about the full capabilities of ProfiSignal.

Test channels are set up and configured within the DataService.

8. Appendix: ProfiSignal in networks

If you use the *TopMessage* or *Expert* hardware you have the option to integrate the hardware and software into an existing data network via a LAN interface.

If you use the *Expert* hardware you can can connect the devices to a PC via a USB and perform data evaluation on multiple PCs.

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2 ProfiSignal Go - Outline

Hardware manuals

The hardware manuals provide information on hardware configuration. Configuration is a prerequisite for working with ProfiSignal. All documentation is available from the start menu under:

Start/All Programs/ProfiSignal/...

This manual is based on the hardware manuals.

Info:

The hardware manuals explain:

- Hardware operation
- DataService installation
- USB or LAN connections
- Hardware configuration

Configuration data is permanently stored within the devices and therefore always available at each restart.

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Delphin hardware overview

Refer to the hardware manuals for detailed information

Message Series
Built-in model
LAN

Expert Key L
Tabletop, Wall mounting
USB, LAN

Expert Key C
Built-in model
USB, LAN

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2.1 Activating ProfiSignal Go

Activation of the ProfiSignal Go licence

Following installation and the first start of ProfiSignal, you will be prompted to activate the the ProfiSignal licences. Activation enables permanent and full use of the licensed software. Ignoring the activation procedure will prompt the issuing of regular reminders. Because of activation time limits that have been set for security reasons, we recommend that you carry out activation immediately .

The activation code for the procedure is available online via the **internet**, via **email**, **fax** or **post**.

Activation set up:

Start ProfiSignal ▶ *Select the* ***Help*** *tab from the main menu* ▶ *Activate licence*

(following successful activation the menu option will change to *Edit licence*)

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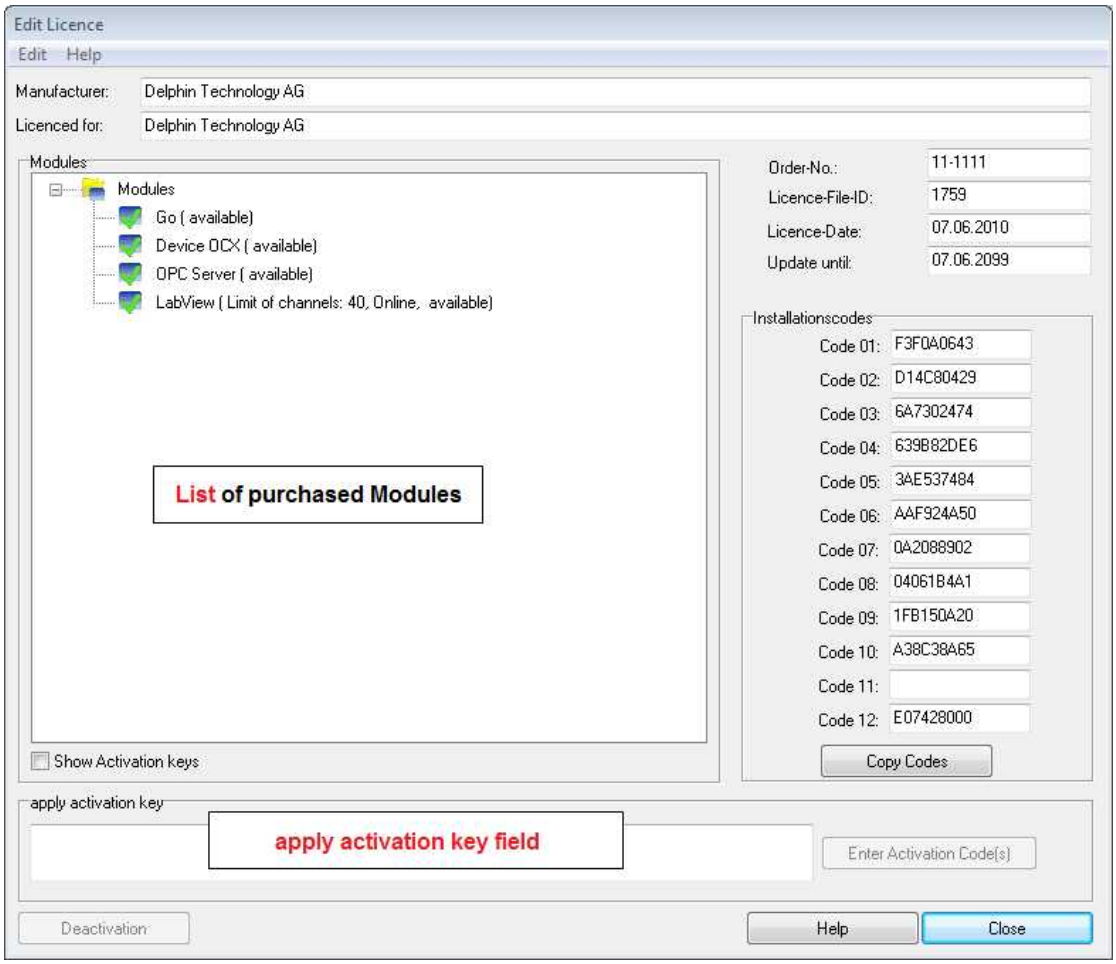
The **main dialogue** for activation code input opens:



A. Online registration

This activation procedure runs automatically. Select *Online-activation* from the main dialogue

Main dialogue▶ Online-activation▶ Activate now

B. Phone registration

Select *Phone-registration* from the main window. Dial the displayed telephone number to request the code. Input the code in the relevant *activation code* field (main dialogue). Confirm with *Enter Activation Code(s)*.

Main dialogue▶ Phone-activation ▶ Request code via telephone ▶ apply activation key ▶

Enter Activation Code(s)

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C. Mail activation

Select *Mail-activation* from the main dialogue. Input the registration data into the dialogue fields and confirm with *OK*. The activation code is then sent by Delphin Technology AG. Enter the sent code/key in *apply activation key* field. Confirm with *Enter Activation Code(s)*.

Main dialogue▶ Mail-activation ▶ Sending of code/key ▶ apply activation key ▶ Enter Activation Code(s)

D. Fax activation

Select *Fax-activation* from the main dialogue. Input the registration data into the dialogue fields and confirm with *OK*. A fax is automatically generated. Send the fax to + 49 2204 97685-85 (Delphin Technology AG). The sending of the activation code is then undertaken by Delphin Technology AG. Enter the sent code/key in *apply activation key* field. Confirm with *Enter Activation Code(s)*.

Main dialogue▶ Fax-activation ▶ Sending of code/key ▶ apply activation key ▶ Enter Activation Code(s)

Licence extension

There is always an option to extend an existing ProfiSignal licence to include more functions(refer to ProfiSignal-Product Range).

Delphin will then provide new codes/keys for any additional modules. Entering the key via the apply activation key field and clicking *Enter Activation Code(s)* writes the key to the licence file.

The new functions can then used following a ProfiSignal restart.

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2.2 Access via desktop icons

ProfiSignal Go comprises two programs: the *DataSevice Configurator* and *Profisignal Go*.

Desktop icons for ProfiSignal Klicks

The *DataService Configurator* icon starts the program.

The *ProfiSignal* icon starts the measurement data acquisition software. Either Go, Basic or Klicks can be installed.

DataService Configurator
The DataService / Configurator runs as a background program. It is called only for hardware configuration or database set up.

ProfiSignal Go
ProfiSignal Go performs your measurement requirements in the form of Online Analysiss.

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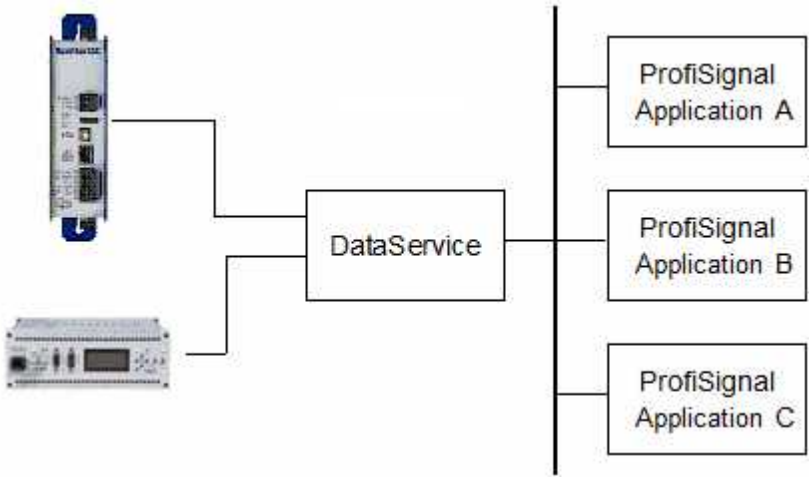
2.3 ProfiSignal in networks

There are a range of options for connecting measurement hardware to ProfiSignal:



Expert devices are equipped with an USB interface and a LAN interface.
Message devices are equipped with a LAN interface.

Info:

Information on using ProfiSignal within company networks is available in the ProfiSignal in networks section.

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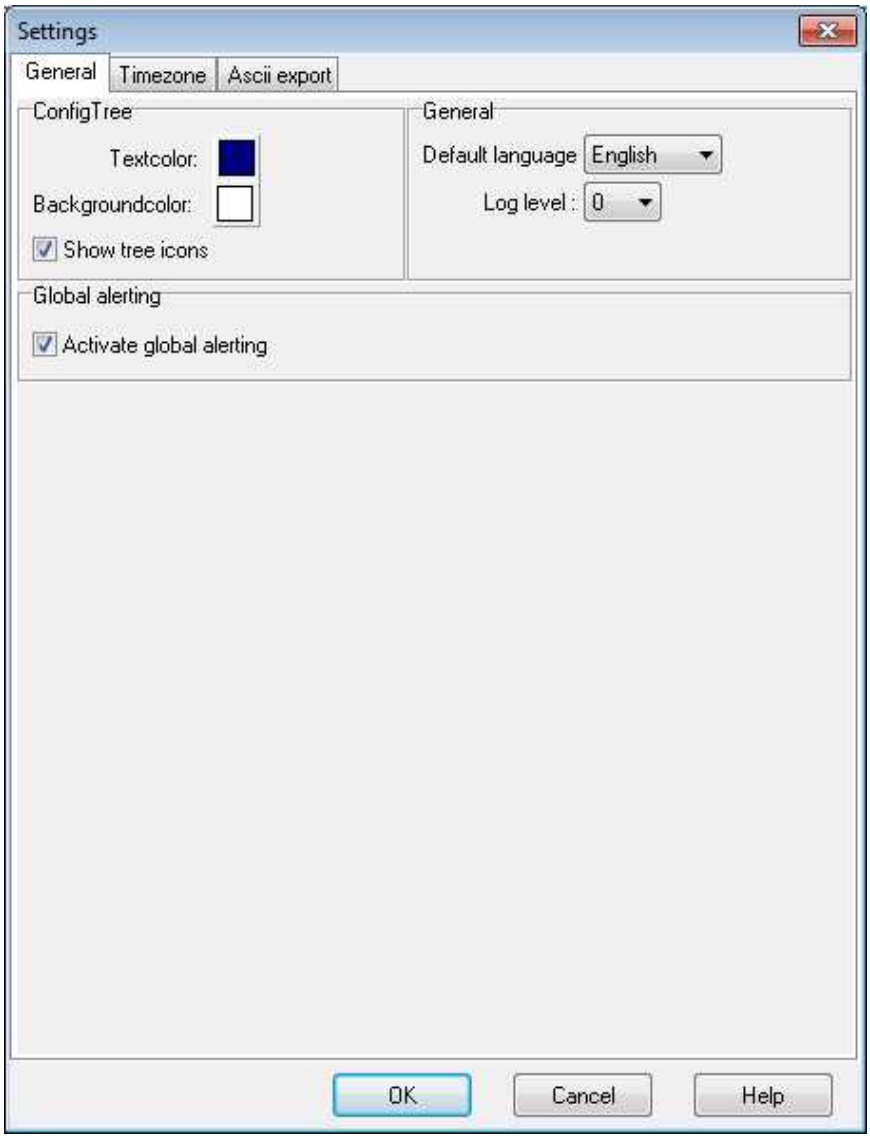
2.4 General settings

Access:

Edit mode / main screen/ menu bar ▶ Settings ▶ Global Settings ▶ General tab



ProfiSignal may be configured in many ways using the basic settings. For example, the latest project file being worked on can be automatically reopened at a restart.

Fonts and colors can be adapted to meet individual needs.

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3 Online Analysis

Online Analysis for acquisition and evaluation of measurement data.

Any number of Online Analysiss can be set up. Each Online Analysis generates a diagram. This can be a trend (Yt-diagram), a characteristic curve (YX-diagram) or a logic diagram.

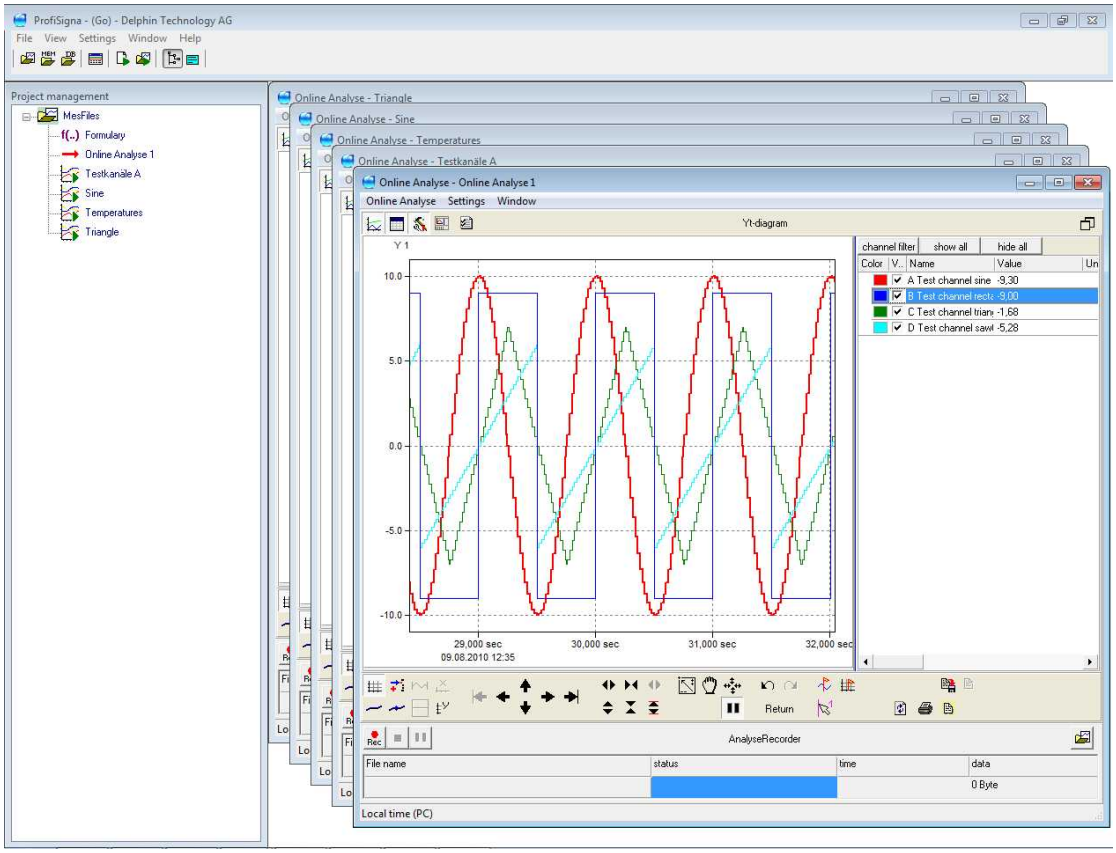
Each Online Analysis is automatically assigned the user-defined configuration.

Multiple Online Analysiss can be run simultaneously.

Each Online Analysis can be opened as required, and measurement data then acquired and evaluated.

You can assign a specific name to each Online Analysis.

The illustration shows multiple Online Analysiss, which can be accessed as required.



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3.1 Test channels

Setting up test channels is described in detail in the *Appendix: Test channels* section.

Test channels are channels that require no hardware.

When hardware is unavailable, test channels can be used instead of hardware channels.

These enable functions such as sinus, square and sawtooth to be assigned to the separate channels.

Test channels can be used to learn about the full capabilities of ProfiSignal.

Test channels are set up and configured within the DataService.

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3.2 The fast path from sensor to trend

Online Analysis is hallmarked by the simplicity of its operation. A minimum of effort is required to get your measurement data displayed on the screen.

Just five steps to display measurement data as a trend!

Requirements:

You have already configured your channels or are using software channels as described in the hardware manual.

Step 1
Start *ProfiSignal* via the desktop icon.

Step 2
Select *Create new Online Analysis view* from the symbol on the toolbar.

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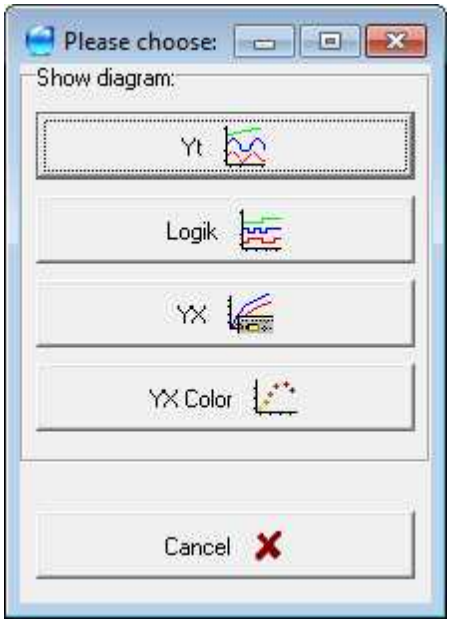
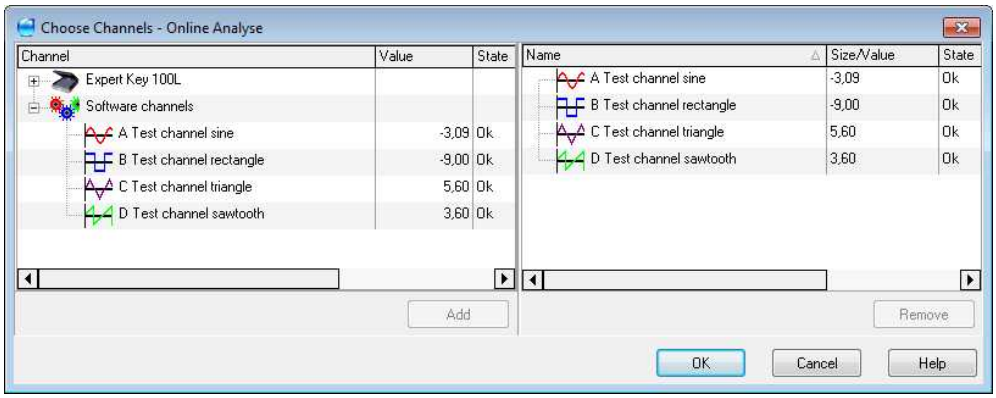
Step 3
The following dialogue opens. Click the *Yt-diagram* button.



Step 4
The following dialogue opens. On the left are the channels that you have activated according to the hardware manual. You can select single or multiple channels to be included in your Online Analysis.

Select the required channels (left) ▶ Left click on Add ▶ Confirm with OK

The channels will then appear on the right:



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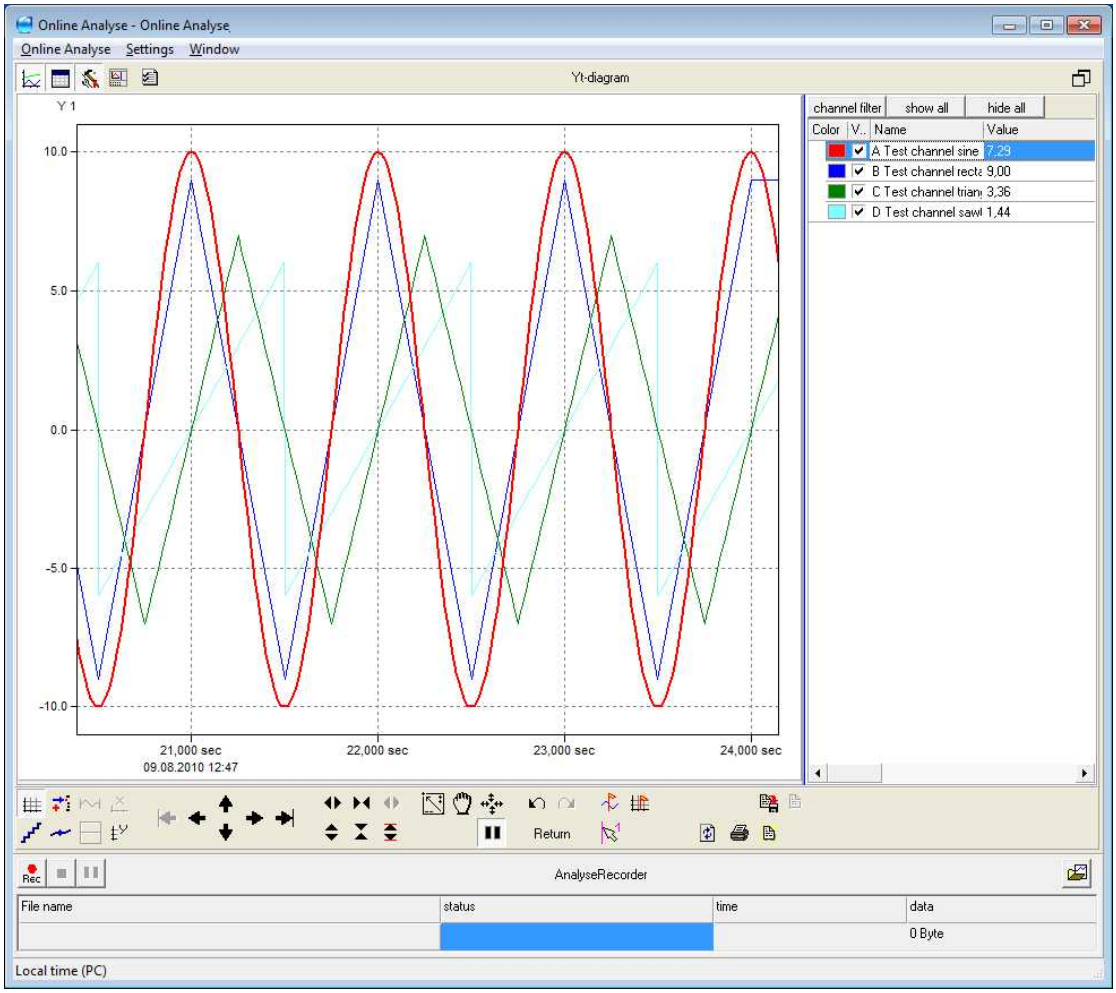
Step 5
The trend diagram opens automatically and displays the added channels. Using the trend diagram is explained in the following sections.



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3.3 Operation / observation of Online Analysis

Operation & observation is one of two modes within Online Analysis. The other mode, described in the *Analysing measurement data section* , concerns the analysis of data.

Operation and observation

Operation and observation takes place online, which means that the graphical portrayal is being continuously updated with the latest data.

Analysing measurement data

Measurement data analysis takes place offline. This means that the graphical portrayal is not being continuously updated with the latest data.
Measurement data can then be evaluated. The user can move backwards along the time axis - a unique feature within ProfiSignal.

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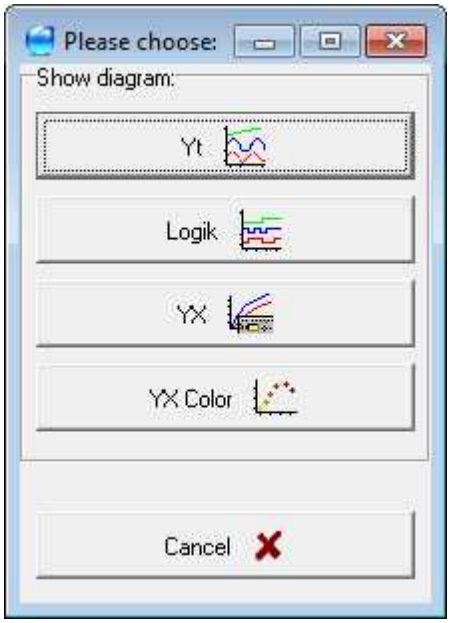
3.3.1 Creating a new Online Analysis

Creating a new Online Analysis

A dialogue opens with the following options:

- The *Yt* button opens a trend diagram
- The *YX* button opens a characteristic curve
- The *Logic* button opens a logic diagram



Description:

- **Yt-diagram (trend) :** Describes the most frequent application.
- **Yx - characteristic curve** The classic example is a tensile test on metal rods with tensile force being calculated along the way. In combustion engines, torque can be calculated from rpm.
- **Logic diagram:** Used, for example, in fault tracing in plant and machinery.

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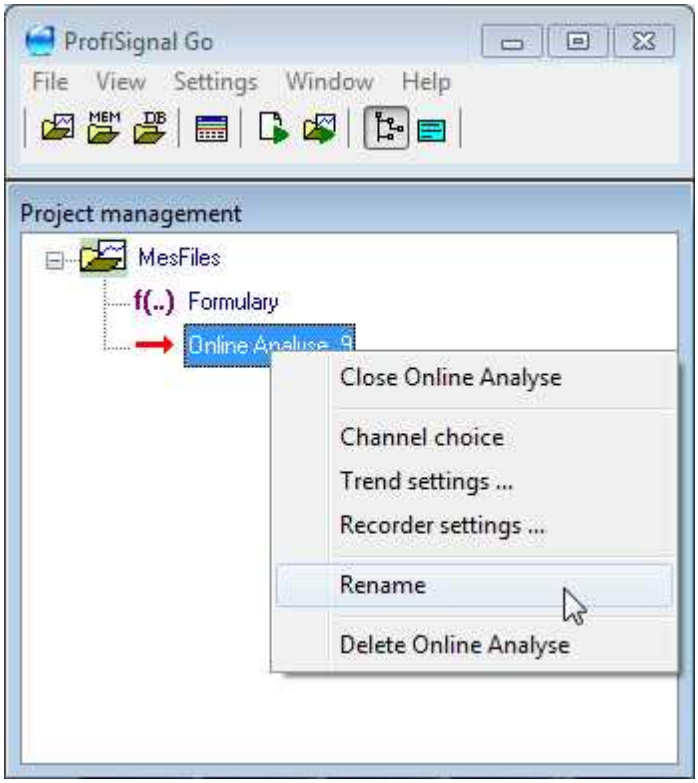
3.3.2 Assigning specific names

Right click the name ▶ Select Rename



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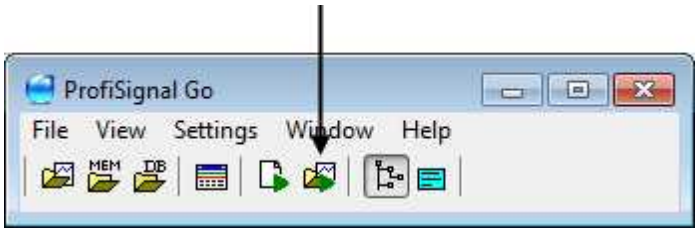
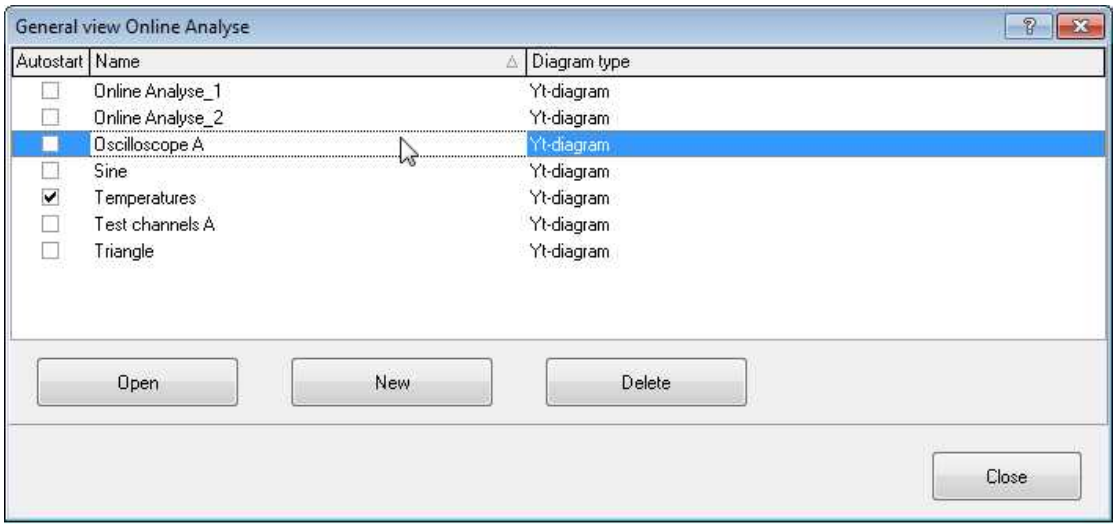
3.3.3 Open/delete existing Online Analysis

Open/delete existing Online Analysis



The following dialogue is displayed:



The following options are available:

- Select Online Analysis
- Open selected Online Analysis
- Delete selected Online Analysis
- Online Analysiss that are check-marked are automatically loaded on restarting

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4 Trends, Yt-diagrams in Online Analysis

Learn how to operate, configure, assign channels and evaluate measurement data using trend diagrams.

A trend can process large numbers of channels. Specific channels can be accessed using a hide/show function.

Up to four measurement axes can be used. Channels can be assigned to the individual axes. Axes can be extended and compressed and shifted against each other.

A trend diagram is assigned to each Online Analysis.

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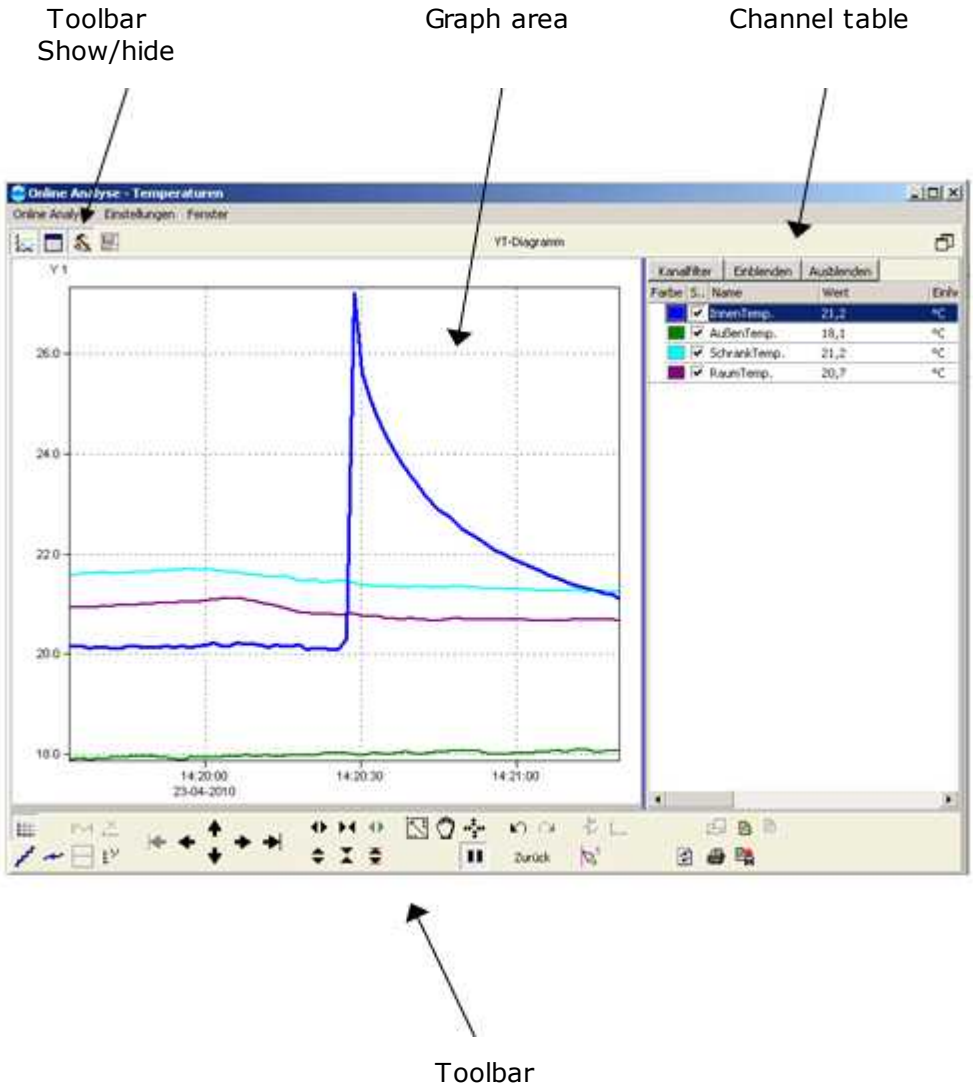
4.1 Trend diagram layout



The trend diagram is made up of three areas:

- Graph area
- Channel table
- Analysis tools

Channel colors are the same for the channel table and graph area.

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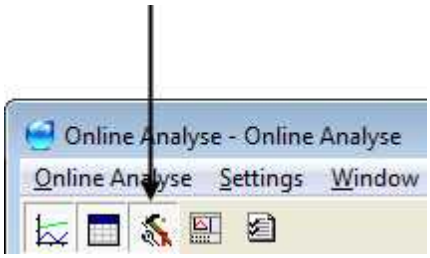
Click the toolbar icon to hide/show the toolbar.



The toolbar provides a wide range of evaluation functions.

The toolbar functions are described in detail in the *Analyse mode for trend diagrams* section.

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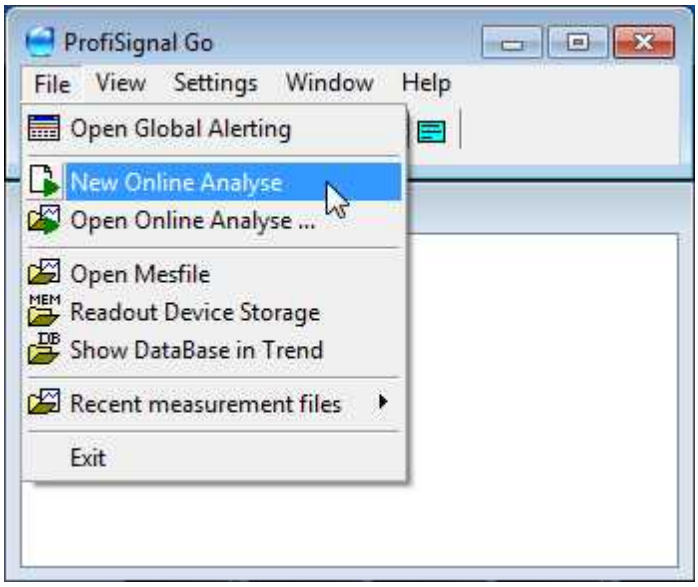
4.2 Creating a new Online Analysis

File ▶ New Online Analysis



Creating a new Online Analysis

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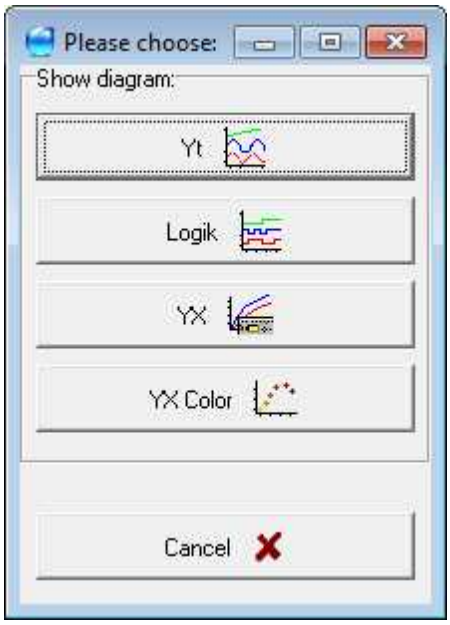
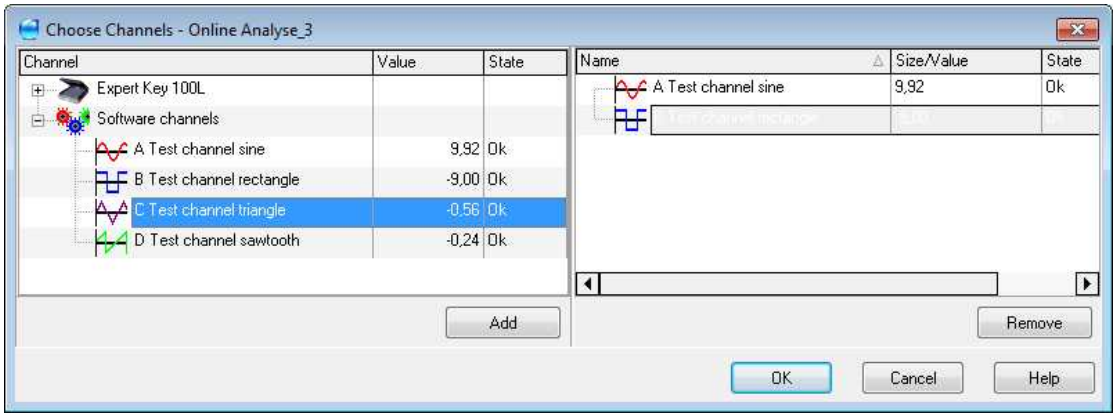
The following dialogue is displayed: Select Yt-diagram.



This displays the following dialogue.



You can now select the channels for your Online Analysis as previously described. The Yt-diagram then opens automatically.

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4.2.1 Edit X-axis (time axis)

Multiple options are available.

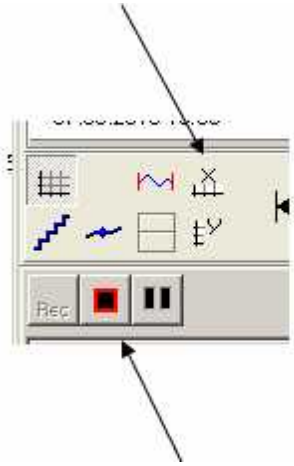
In online mode

Right click the time axis. A numerical time period can then be set.
This applies to online mode and can be altered via the analyse mode (offline) (refer to the *Online / Offline* section).

In record mode

While measurement data is being written to an *. hds file, you can switch between relative and absolute times using the time axis button.

Time axis button



Recording on

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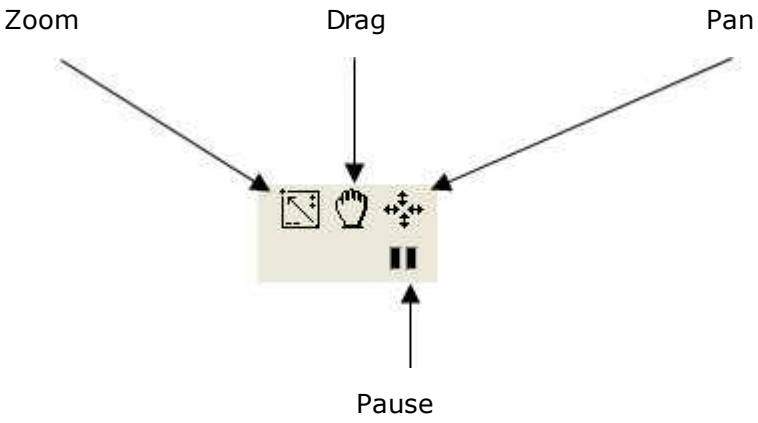
In offline mode

Refer to the *Analyse mode for trend diagrams* section

In offline mode, you can use the *zoom*, *pan* and *drag* buttons to adjust the time (and value) axes.

These settings are saved when you exit the analyse (offline) mode using the pause button.



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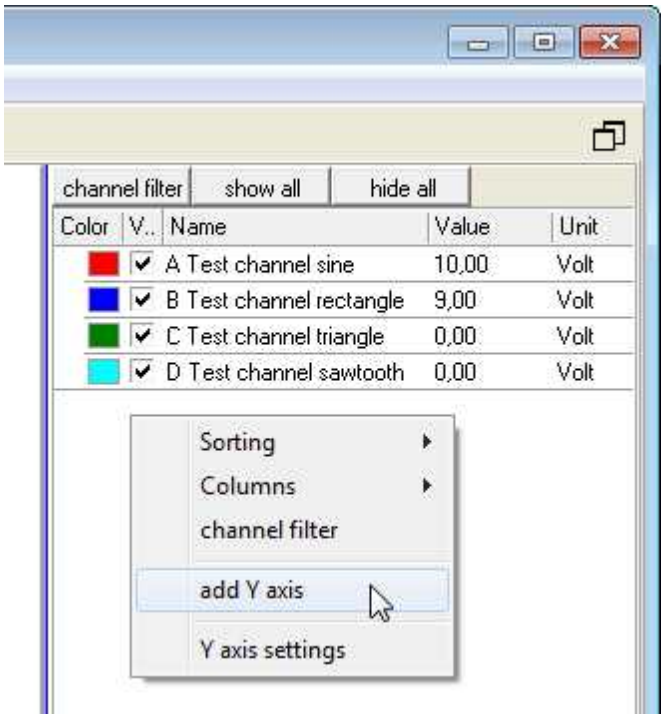
4.2.2 Add Y-axis

Up to four Y-axes can be used. The Y-axes can be positioned to the left and right of the curves.

Move the cursor to the channel table and right click.

This opens the following dialogue

Select: ▶ *add Y-axis*



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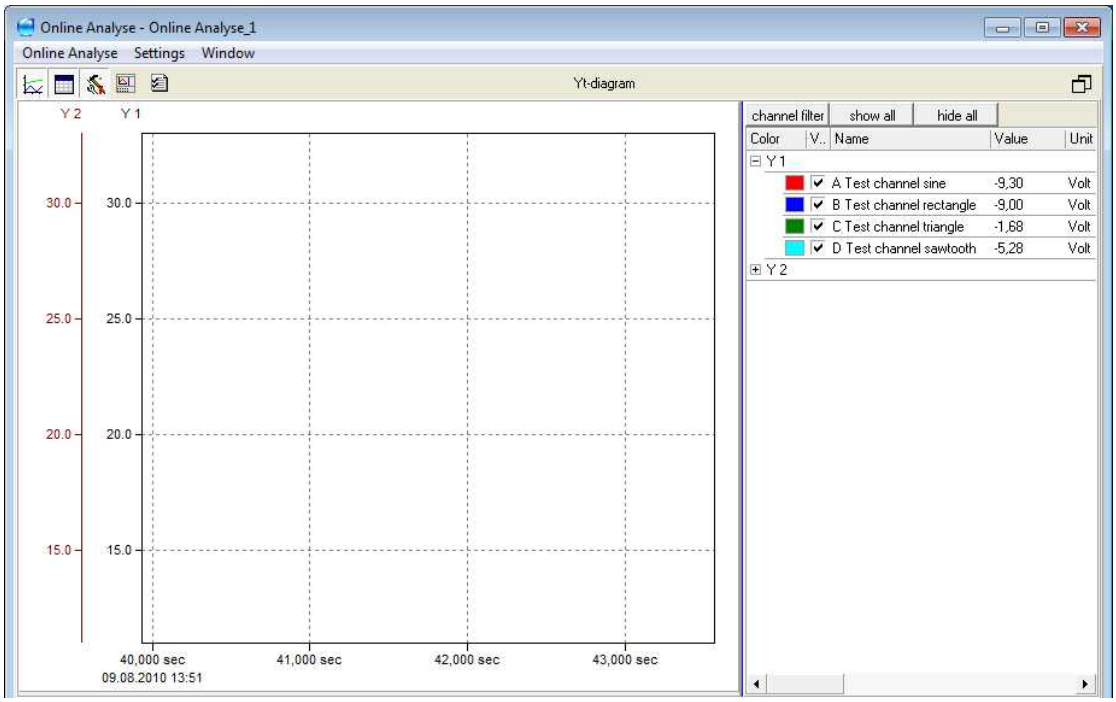
This adds an additional Y-axis.



The added Y-axis with the default name *Y2* is also displayed in the channel table. This Y-axis has not yet been assigned to a channel.

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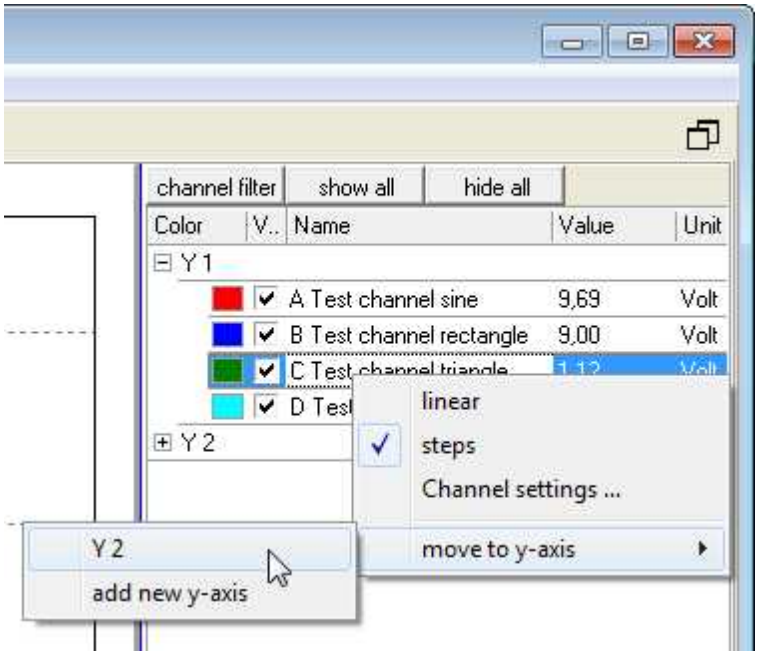
4.2.3 Assigning channels to a Y-axis

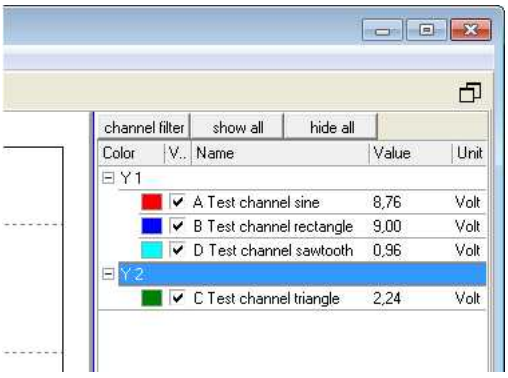
From the channel table, select the channel that you wish to assign to the Y-axis.

Right clicking opens the following dialogue. This enables the selected channel to be assigned to the Y2 axis.



A dialogue is displayed that lists the current Y-axes to which channels can be assigned.

In the example the *Y2*-axis is assigned to the *Test channel triangle* channel.



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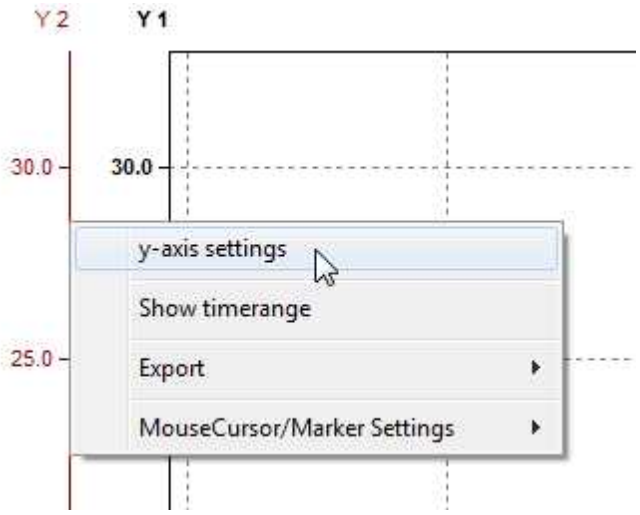
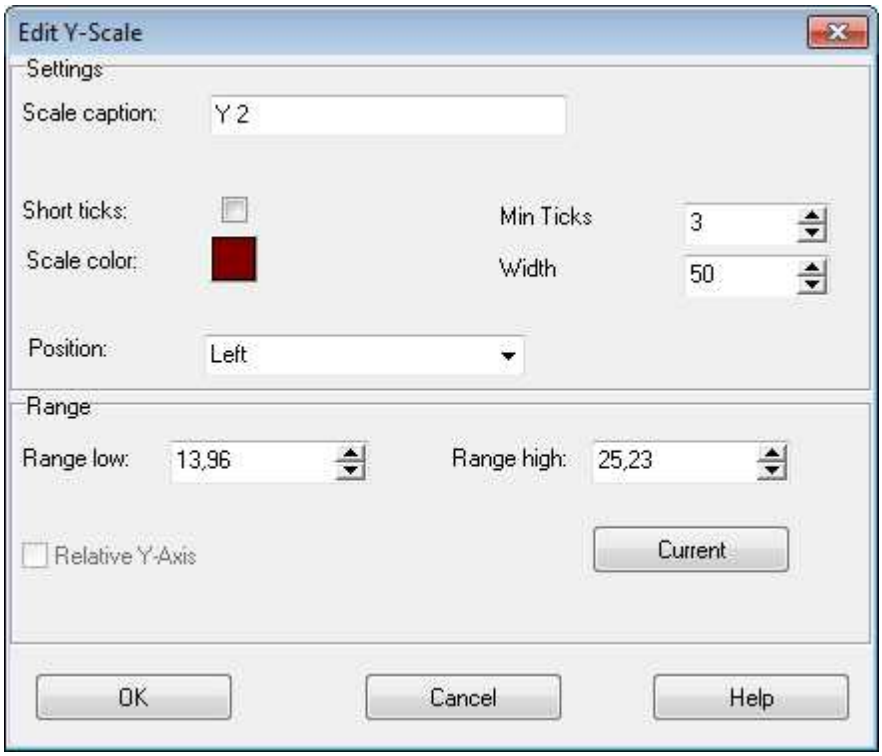
4.2.4 Y-axes configuration

Click the axis you wish to configure. Select *y-axis settings*:



After selecting *y-axis settings,* the following dialogue is displayed.



The axis can now be configured as required.

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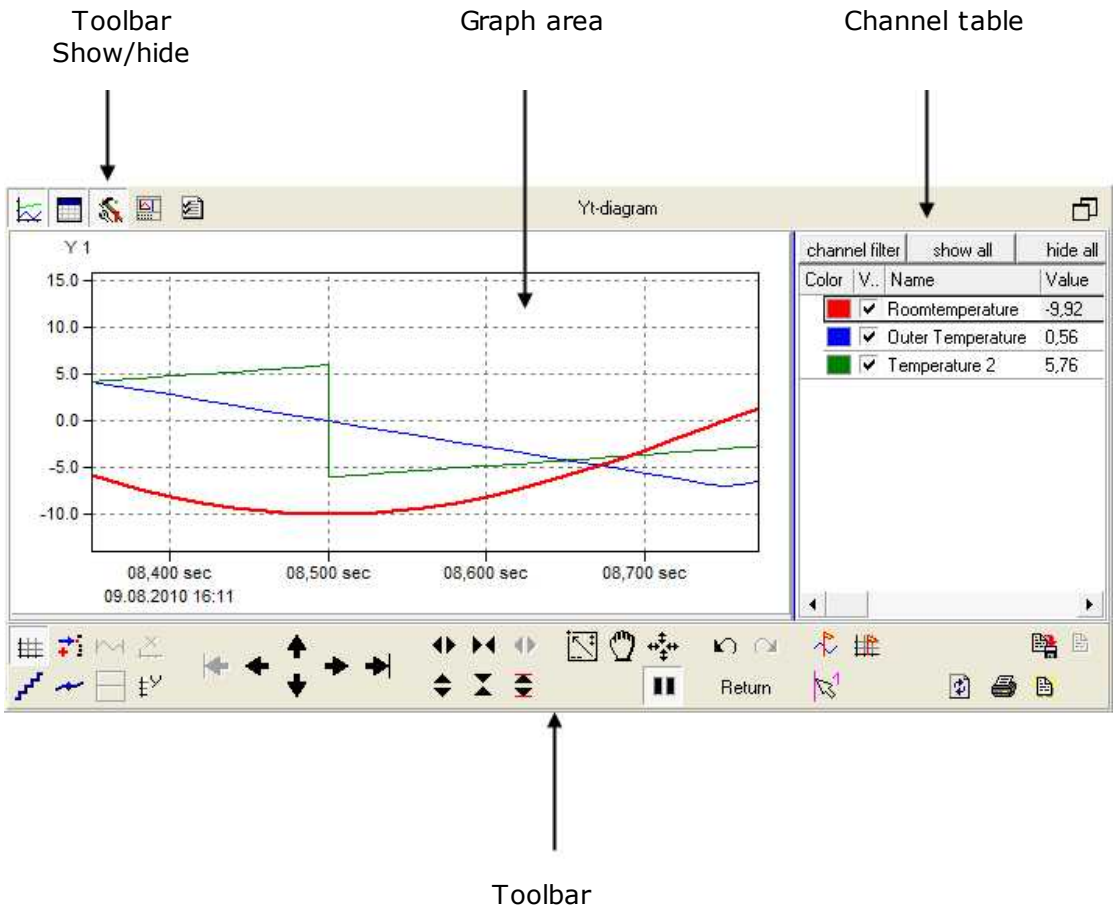
4.3 Using trend diagrams in Online Analysis

Trend diagram layout



The trend diagram is made up of three areas:

- Graph area
- Channel table
- Toolbar

Click the toolbar icon to hide/show the toolbar.

Info:
The channel table is described in the *Using the channel table* section.
The toolbar functions are described in the *Measurement data analysis* section.

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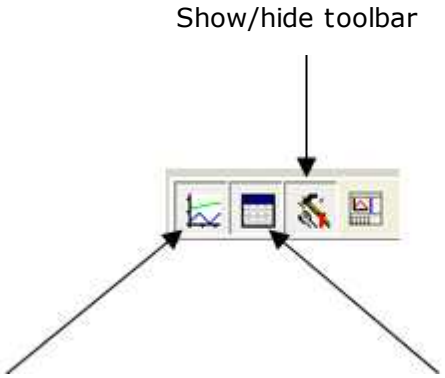
4.3.1 Global operating buttons

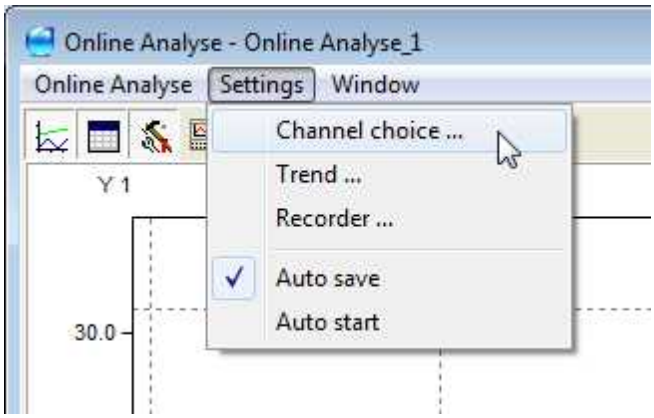
This toolbar is located at the top left of the diagram.



4.3.2 Assigning channels to a trend

Channels can be added / deleted at any time. This takes place via a menu in Online Analysis.

Online Analysis ▶ *Settings*▶ *Channel choice*



This opens a *Choose Channels* dialogue. You can now amend the channels selected for Online Analysis.
The channels displayed on the right are those assigned to Online Analysis.

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4.3.3 Using the channel table

Hide / show channels and filtering

These functions enable you to focus on those channels that you are currently interested in. All other channels are then hidden.

Show / hide specific channels

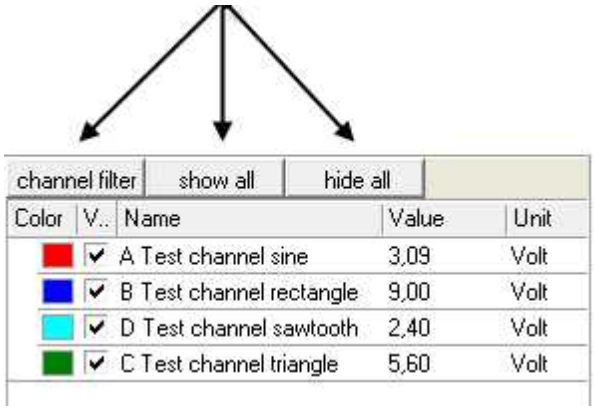
Channels are displayed when active (check-boxed). Left clicking the field hides / shows the channel.

Show / hide all channels

The *show all* and *hide all* buttons enable all channels to be displayed or hidden.

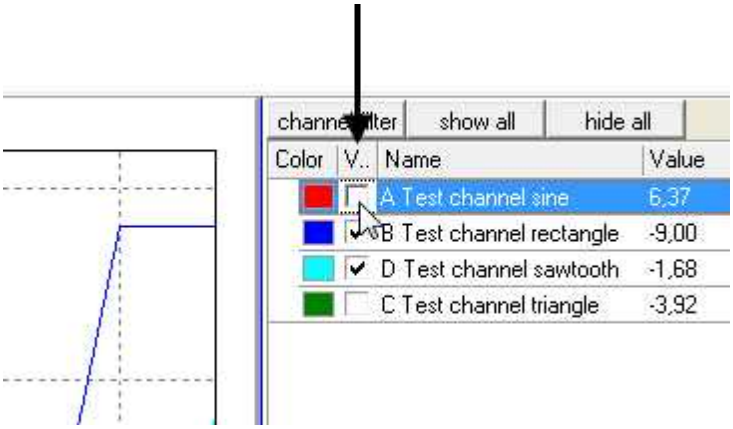
Removing hidden channels from the channel table

The *channel filter* button or *channel filter* context menu (right clicking the channel table) enables non-active channels to be removed from the channel table.



4.3.3.1 Show / hide specific channels

You can show / hide channels in the graph area by checking / unchecking the channel in the channel table. Deactivating (unchecking) a channel hides it.



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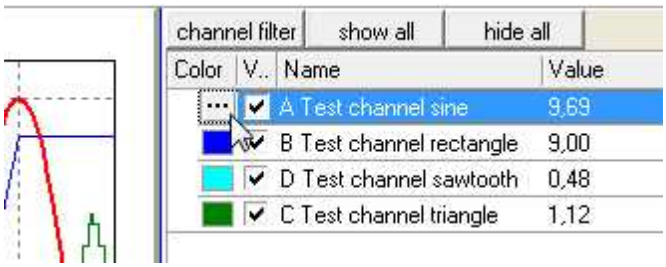
4.3.3.2 Amending channel color

Left click the channel in the channel table to enable the channel color to be amended.



This opens the color palette. A new color can now be assigned to the channel.

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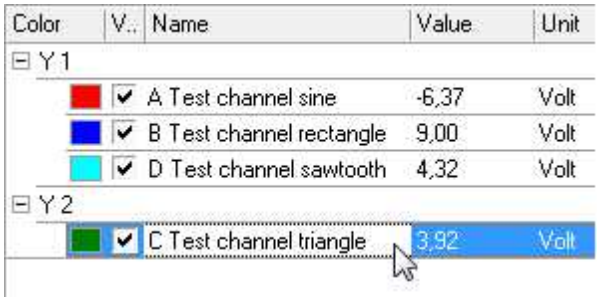
4.3.3.3 Highlighting channels and channel groups

Highlighting a channel

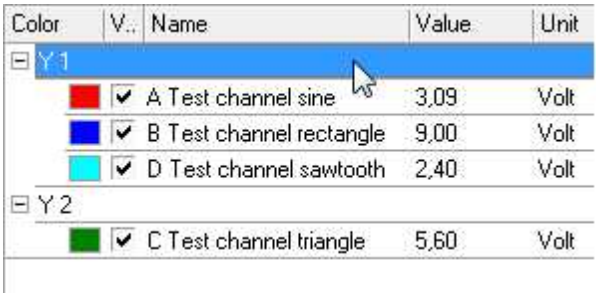
Select a channel from the channel table to activate it. The curve in the graph area is then highlighted and brought into the foreground.

A further click cancels the highlight.



Highlighting channel groups

Selecting a Y-axis from the channel table highlights the Y-axis and its accompanying channels in the graph area. A further click cancels the highlight.



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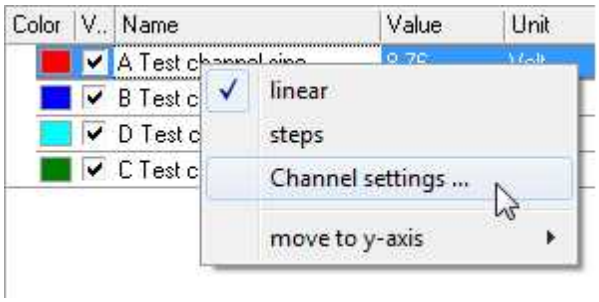
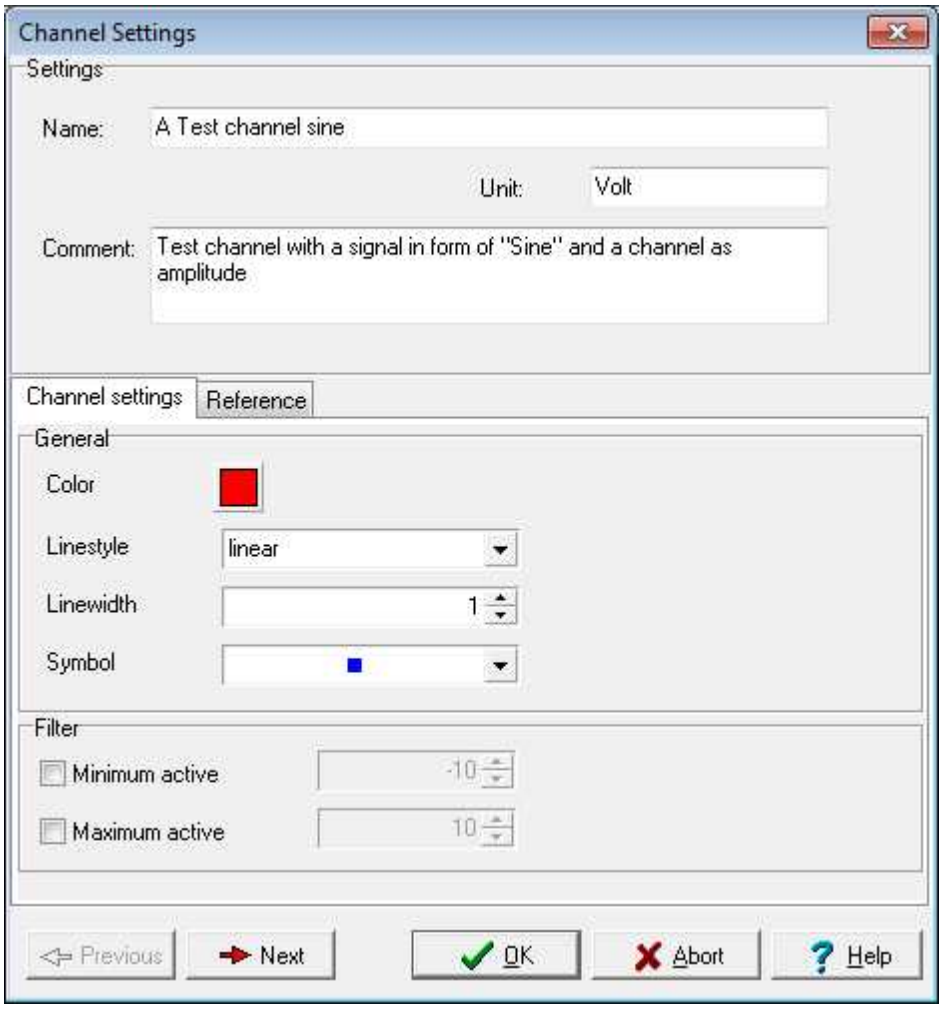
4.3.3.4 Amending line thickness of the graph

The line width can be amended by right clicking *Channel / Channel settings...* .



This opens the "Channel Settings" dialogue.



Amend the line width value. The default value is "1".

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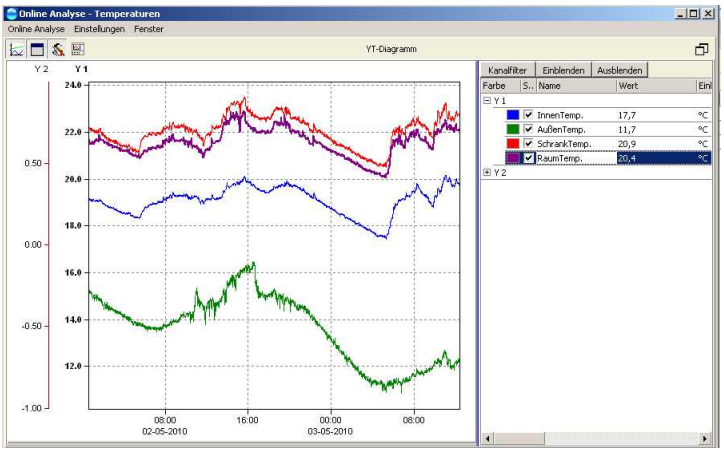
5 Recording measurement data in Online Analysis

ProfiSignal Go enables continuous and batch data recording.

Measurement data files can be set up with start/stop settings at the same time as data is being permanently recorded as a background service. Data records can also be set up with manual start/stop settings.

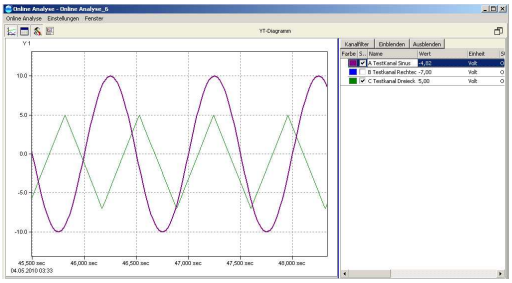
Continuous data recording

Important for the monitoring of plant and machinery, for continuous production processes, for the acquisition of quantities, endurance testing etc.



Batch data recording (recorder files)

Important for experimental trials, fault data acquisition, fault detection, the monitoring of plant and machinery, production processes etc.



Info:

A combination of recording methods can be used. Batch recording can be performed at the same time as continuous data is being recorded.

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No data recording

With no database and no current batch files, there is then no recording of measurement data.

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5.1 Continuous data recording

In continuous data recording, data is recorded to the DataService on a channel basis. Measurement databases can be set up. Measurement data can be portrayed in the required trend diagram.

The data can be accessed by any application connected to the DataService. Measurement data is recorded independently from applications. Data is therefore acquired and recorded even when there are no applications running.

This recording method means that movement can be made along trend diagram time axes from the current measurement value back to anywhere in the past. Data is displayed immediately, without any delay.

Use

Important areas of application are in the monitoring of plant and machinery, in continuous production processes, in mass data acquisition, endurance testing etc.

Database set up in DataService

For continuous data recording, database set up is required within the DataService. Measurement data within the databases is then available to any Online Analysis.

In continuous data recording, data is recorded to the databases so that historical data is available to Online Analysis.

Info:

Data is recorded to the database when the DataService program is running. When the DataService is not running there will be interruptions in the continuous data recording.

Benefits:

A special feature of the DataService is that large masses of data can be processed at a high level of data resolution. The data can then be displayed at high-speed onto the screen.

No online/offline restrictions for trend portrayal

Delphin's DataService removes the restrictions on online/offline processing. This is a first for the DataService and distinguishes it from other products. You can move along the trend time axis from the current time back to any time in the past. A zoom function provides high-resolution portrayal of historical data.

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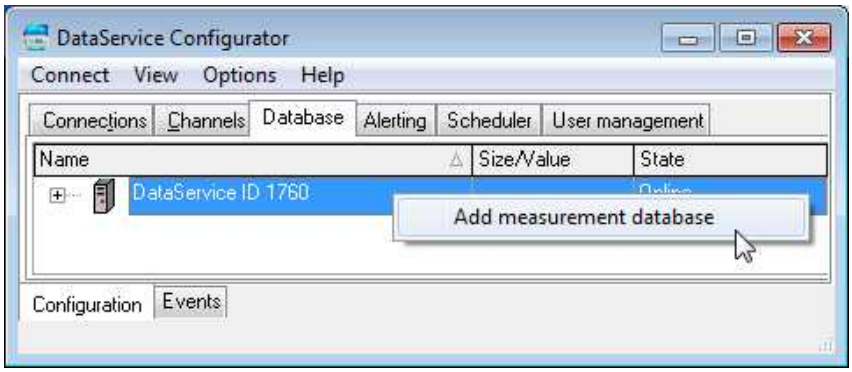
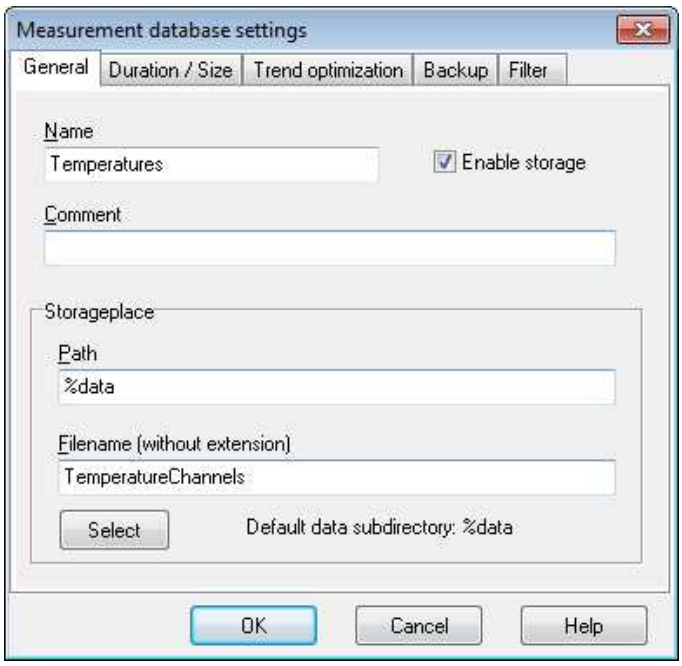
5.1.1 Database set up

The following example describes the setting up of a database and the assigning of channels to the database:

- Run the *DataService Configurator*.
- Click the *Database* tab.
- Right click *DataService...* from the displayed tree.
- Click *Add measurement database*.



This opens the *Measurement database settings* dialogue.



- Input a *Name*, e.g. *Temperatures*.
- Enter a *Filename*, e.g. *TemperatureChannels*.
- Confirm with "OK".

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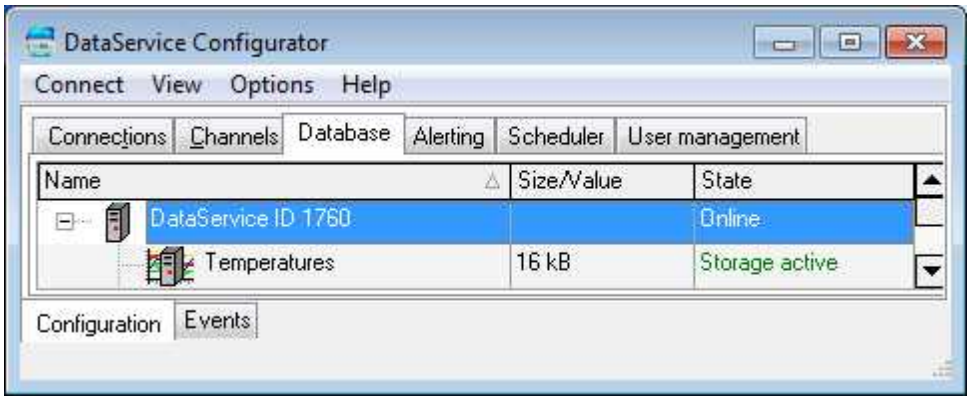
A "Temperatures" database now appears on the right of the Configurator dialogue.

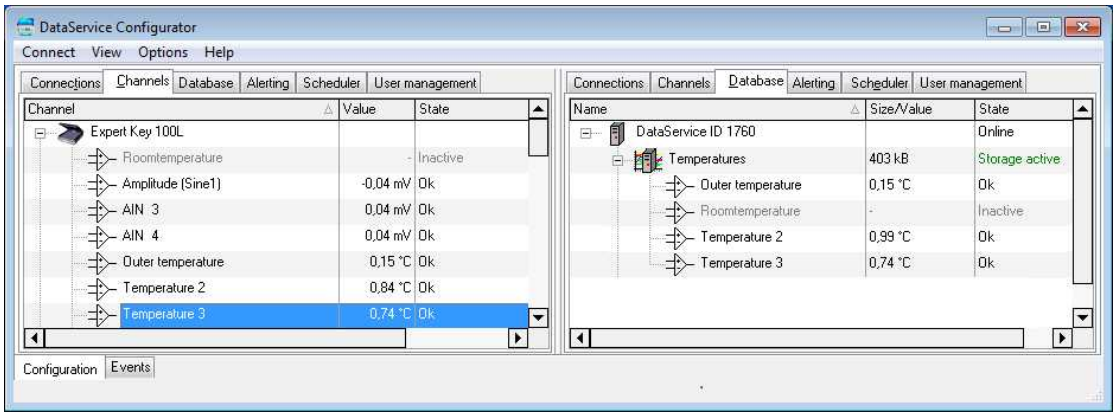


5.1.2 Assigning channels to a database

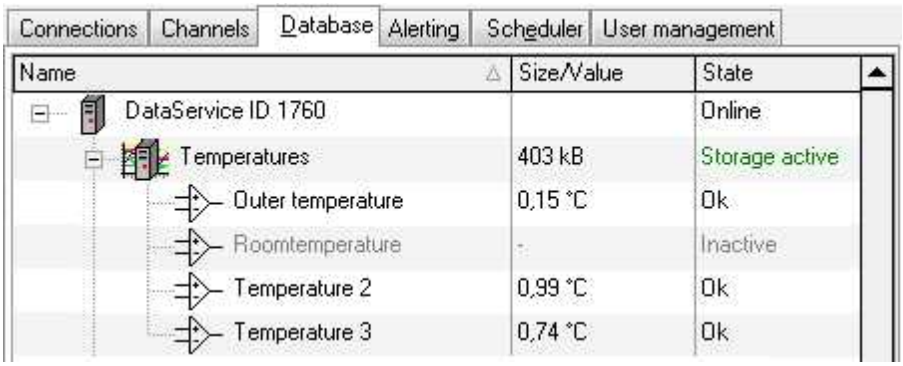
From the left menu bar ▶ Select channels

To assign channels to the *Temperatures* database, channels are moved using drag&drop from the left to the icon for the *Temperatures* database on the right.

Copies of the channels are then installed within the database.



You should now see the display below-on your computer screen.



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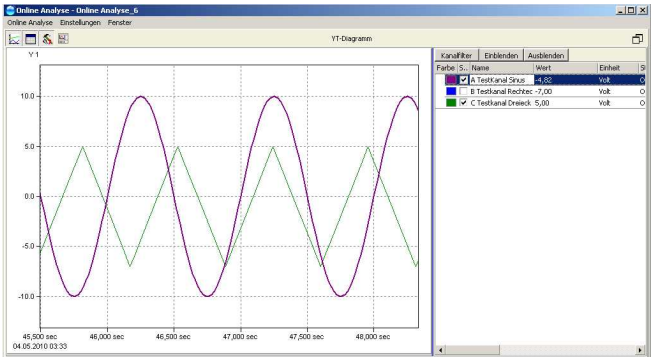
5.2 Batch data recording (recorder files)

Batch processes are distinguished by having a finite duration with start /stop conditions. Manual start / stops are also a feature.

The recorder is the ProfiSignal Go software component responsible for storage. The data is stored to a recorder file.

Important application areas for batch recording are experimental trials, fault data acquisition, fault detection, the monitoring of plant and machinery, production processes etc.

Recorder files are located in a folder with the Online Analysis name with which they were created.



Info:

Batch recording can be performed at the same time as continuous data is being recorded to databases.

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5.3 Configuring recorder files

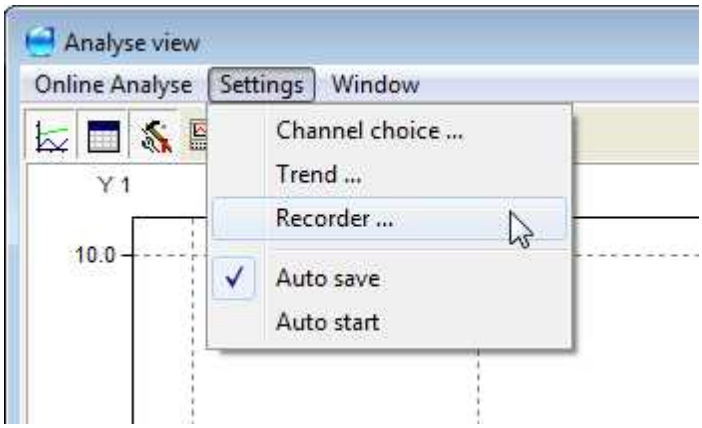
A range of settings can be made in order to achieve optimal results.

Recorder files are located in a folder with the Online Analysis name with which they were created.

Access:

From the main menu of the Online Analysis

Select ▶ Recorder from the Settings tab.



This opens the Settings - Recorder.AnalyseRecorder dialogue.

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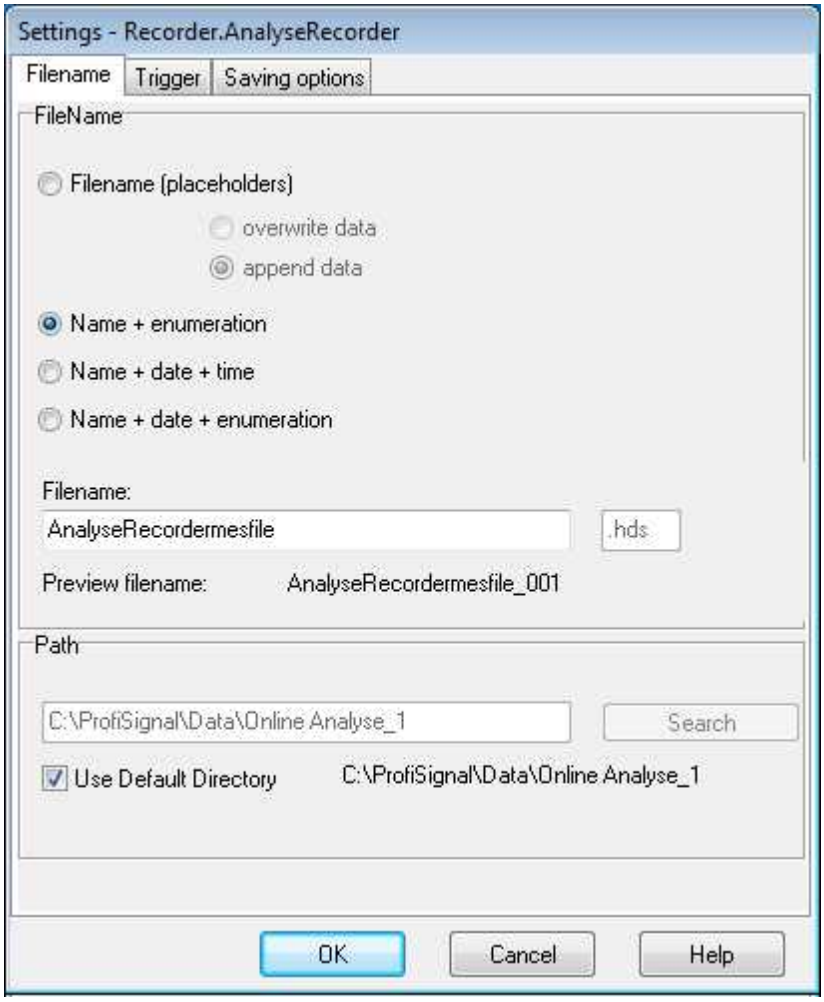

The *Filename* tab enables individual names to be automatically assigned to files. This is especially important for experiment series.

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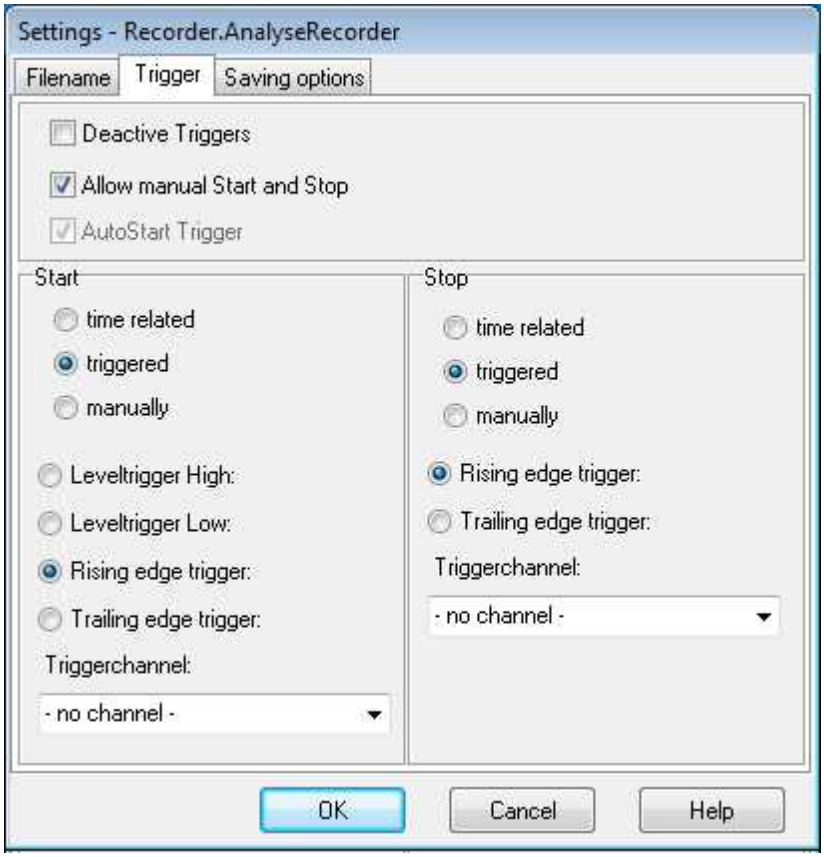
The *Trigger* tab enables trigger conditions to be set for the automatic generation of trigger files.
Triggers can be time related or associated with a specific channel.



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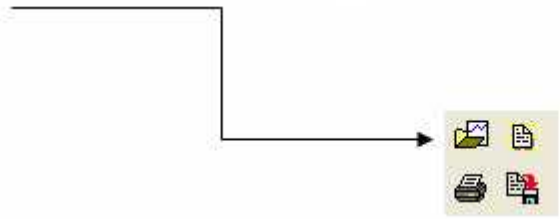
5.4 Loading recorder files

A batch process can be loaded offline by loading one of its recorder files into a new trend, which is then automatically generated. All the functions from Online Analysis are then available for evaluating the batch process.

Load the "*.hds" recorder file type.



Clicking this button opens the folder in which the recorder files for the Online Analysis are located. You can then select the required data from the list.

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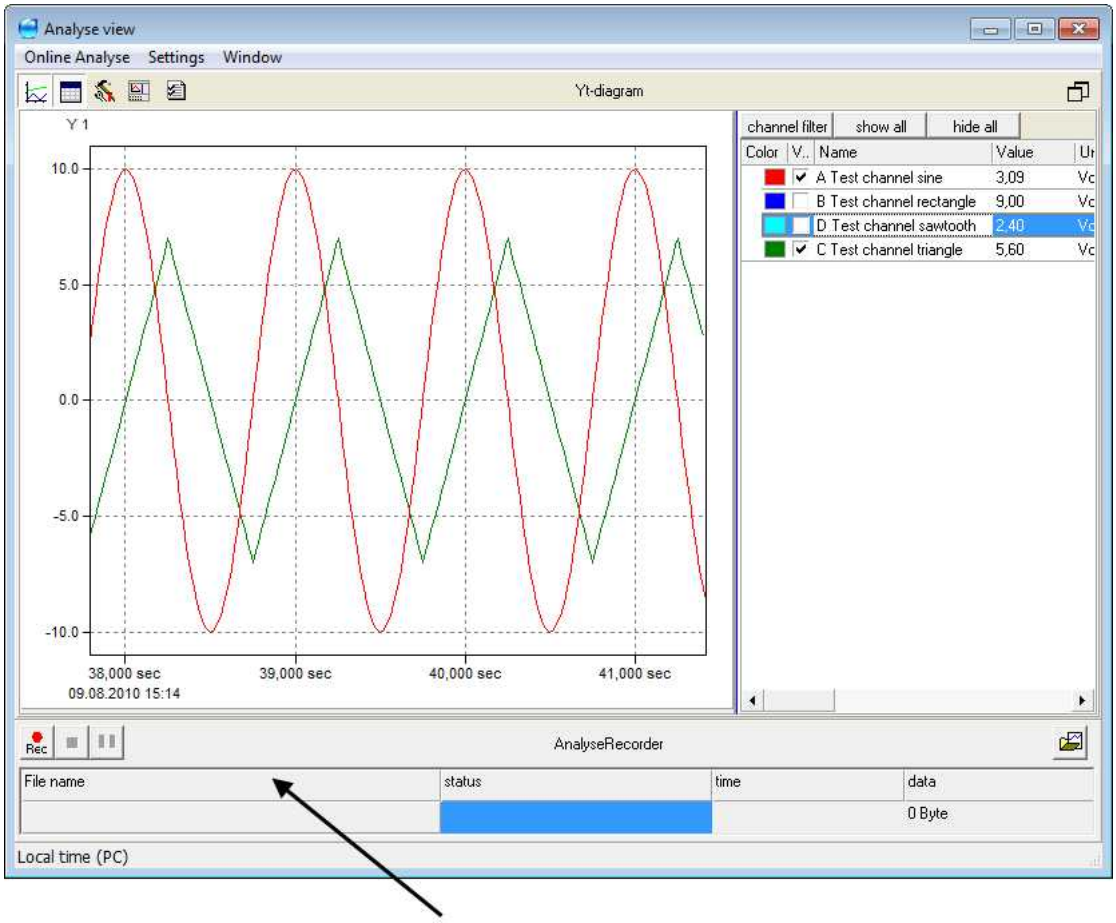
5.5 Recorder data information

Recorder data information is displayed continuously in the recorder bar at the bottom of the screen.

It contains information on the recording and enables a recording to be:

- manually started
- interrupted (paused)
- ended.



The recorder bar contains information on recordings and enables the manual start / stopping of a recording.

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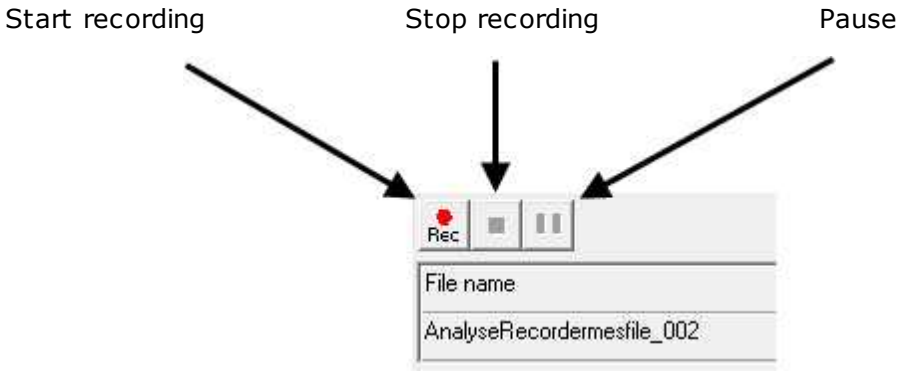
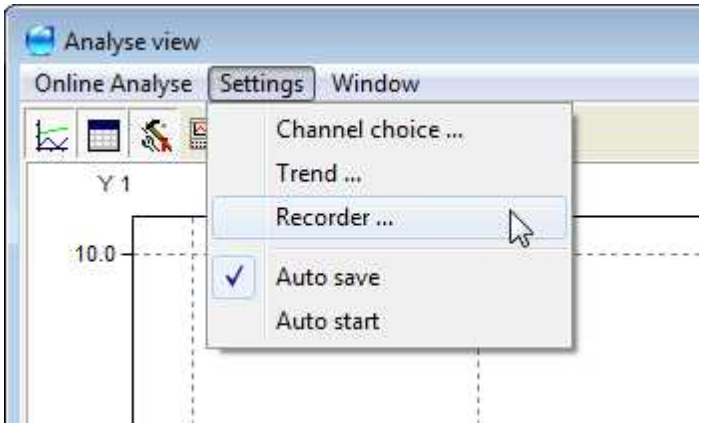
5.6 Recording manual start / stop



Input recorder file names.



Recorder file names can be assigned using the recorder settings. The name can be a specific name.

Info:

Subsequent recordings overwrite the original file.

Multiple, automatically generated, sequential file names are available for data recording which then avoids the overwriting of data. These files are saved to a directory with the name of the Online Analysis.

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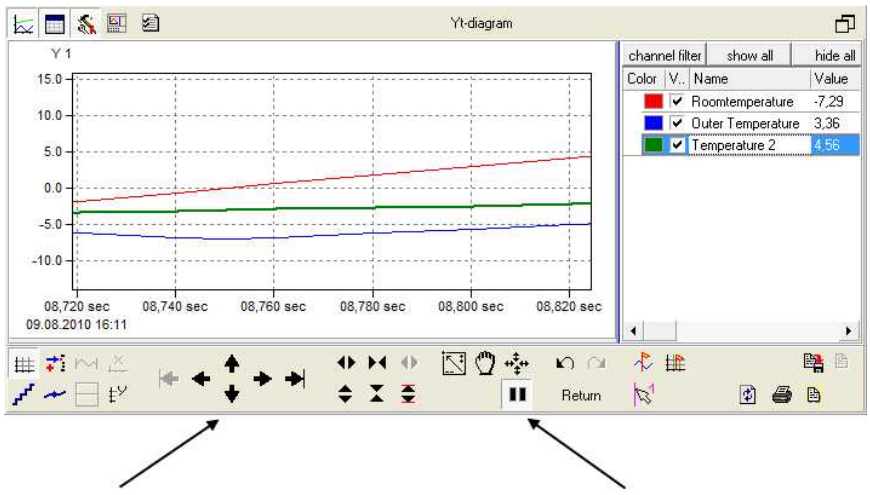
6 Measurement data analysis

Operating and analysis modes are available in ProfiSignal.

The operating mode runs online and provides access to the most recent data. The analysis mode runs offline with online/offline switching available at the click of the mouse.

ProfiSignal has an extensive range of evaluation tools. The functions are operated via toolbar buttons.

In this section, functions are described for the toolbar buttons. Operation and observation of an Online Analysis takes place online. Measurement data is analysed and evaluated offline (analysis mode).



Toolbar functions for analysis mode

Button for switching between online/ offline

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6.1 Online / offline

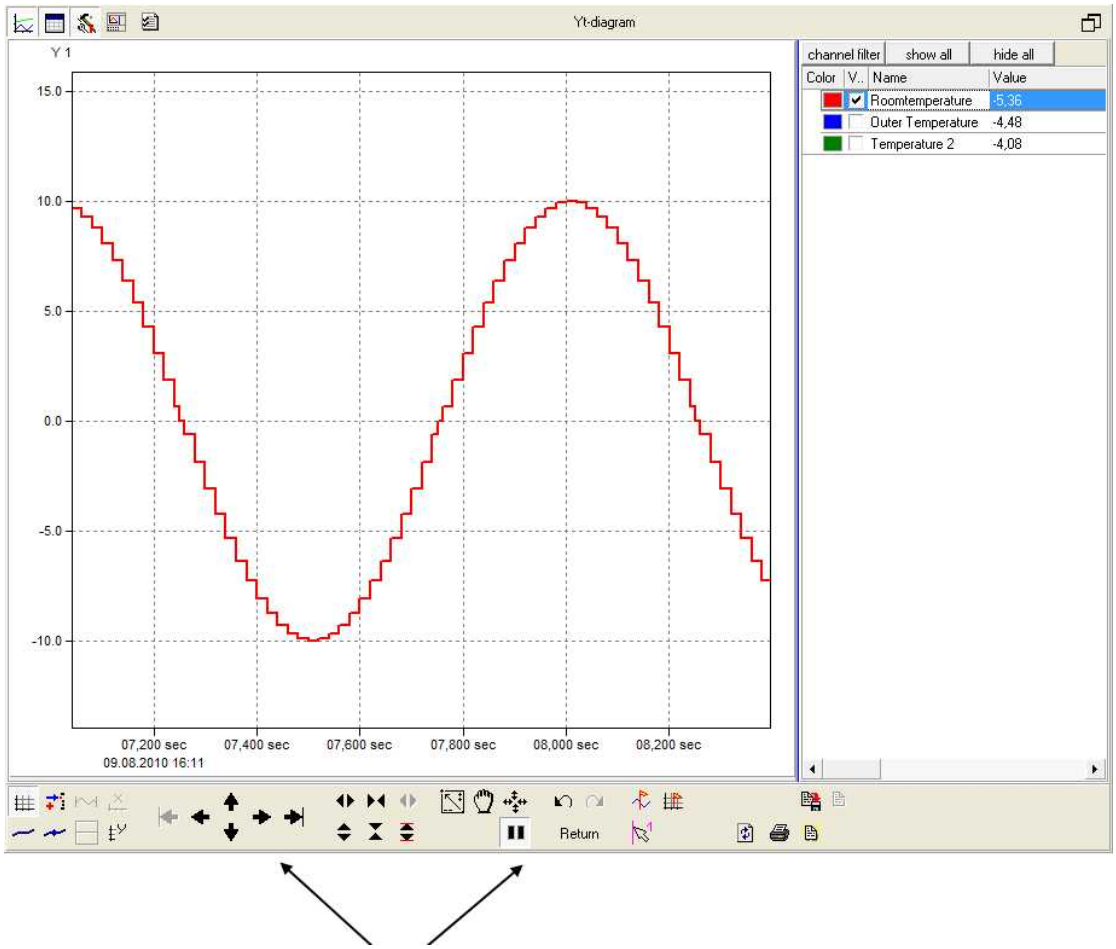
This is a central function of analysis and evaluation under ProfiSignal.

Online (operating and observing mode)

The *online* status is characterized by the continuous input of new measurement data into the graphical portrayal. You are now in the observation mode (watch mode) and are able to observe what is currently taking place.

Offline (analysis mode)

The *offline* status is characterized by the graphical portrayal receiving no new measurement data. An extensive range of evaluation tools are available via buttons on the toolbar.



Toolbar

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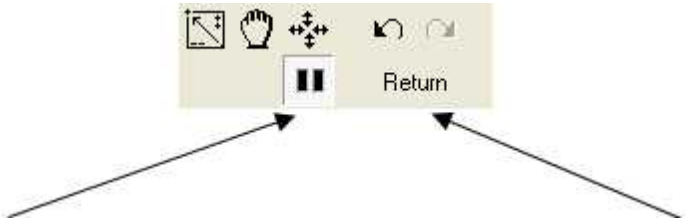
6.1.1 Switching between online and offline

The pause key enables you to switch between online and offline.

Clicking on the pause key puts you in analysis mode (offline).

Clicking off the pause key puts you in watch mode (online).



Pause key

Online/offline

Return key
Return to online mode

The return key is an alternative key to move from offline to online status.

Switching from offline to online using the pause or return keys has differing effects:

Function when switching using the pause key

The offline settings for the time and value axes remain. When the time period in *offline* is set to the past, the online time period will be moved to the present. In this way new data is included without any interruption.

Function when switching using the return key

The offline settings for the time and Y-axes are reset to the original online settings. The observation mode is therefore reset to its previous values.

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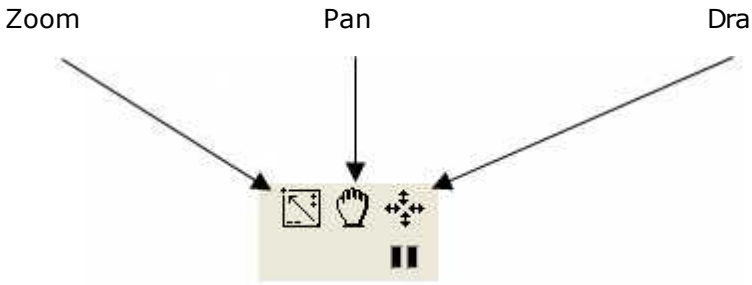
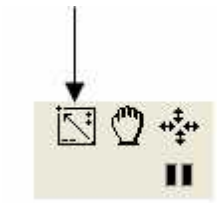
6.2 Overview of the most common functions

Zoom, *Pan* and *Drag* are the most commonly used functions.

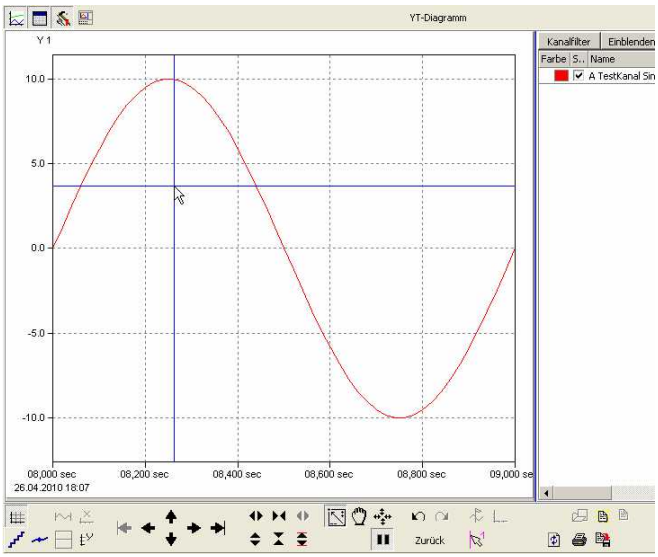


6.2.1 Zoom using the mouse

Zoom on/off



Clicking the zoom key (arrowed), or double clicking on the graphic will display cross-hairs on the graph area. You can now mark an area using the left mouse key. Releasing the mouse key will enlarge this area to the full graphic size.



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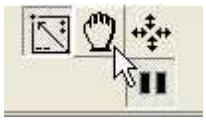
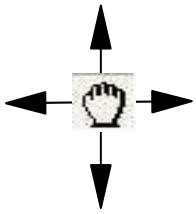
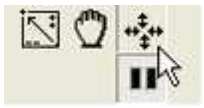
6.2.2 Uninterrupted panning using the mouse



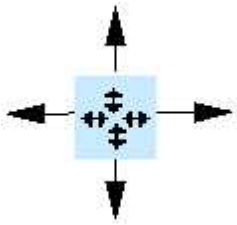


Use the pan key (fist) to smoothly pan along the time and Y-axes.

6.2.3 Uninterrupted expansion / compression of curves (dragging)



Expand or compress (drag) the time and Y-axes using this symbol.

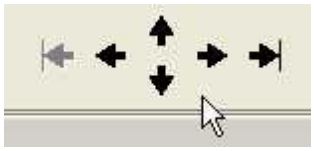


6.2.4 Switching between pan and drag

By double clicking one of the buttons enables switching between pan and drag modes.

This can be extremely useful. With more experience, the user will become aware of its practicality. Double clicking makes working procedures easier.

6.2.5 Panning the axes in steps



These symbols enable left/right and up/down step panning along the time and Y-axes.

The left and right symbols bring you to the beginning or end of the measurement file. The grey left symbol is available only for offline batch processes.

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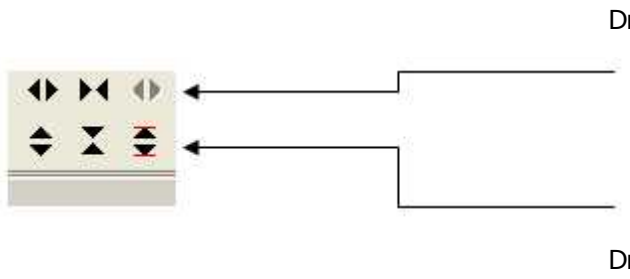
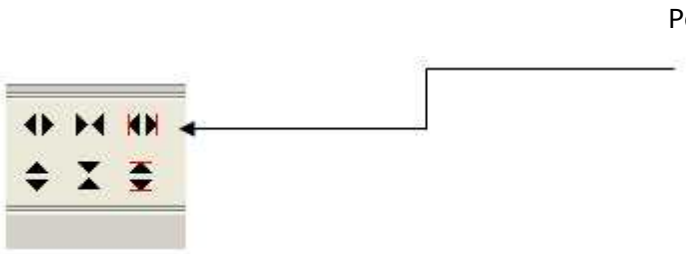
6.2.6 Dragging the axes in steps



These symbols enable step dragging of the time axis (upper row) and Y-axis (lower row).



The symbol on the upper right is available only for offline batch processes. It enables portrayal of the entire recorder file. The batch process can then be visualized as a whole.

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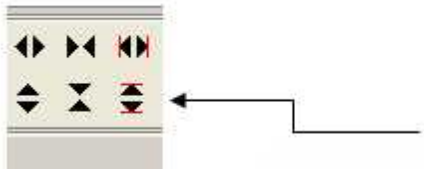
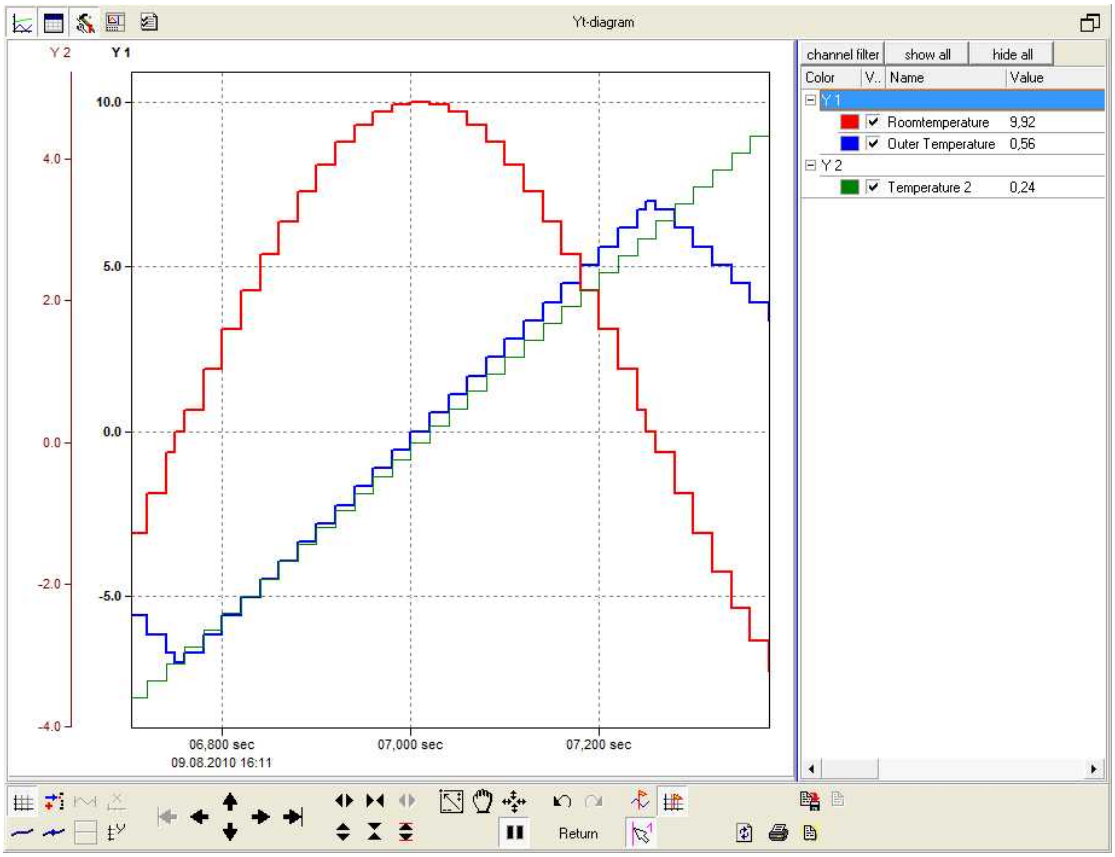
6.2.7 Autoscaling



Autoscaling

The **Autoscaling** symbol (arrowed) sets minimum / maximum values for curves, channels and Y-axes. The minimum / maximum values for the curves are visually portrayed.



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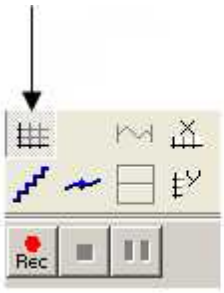
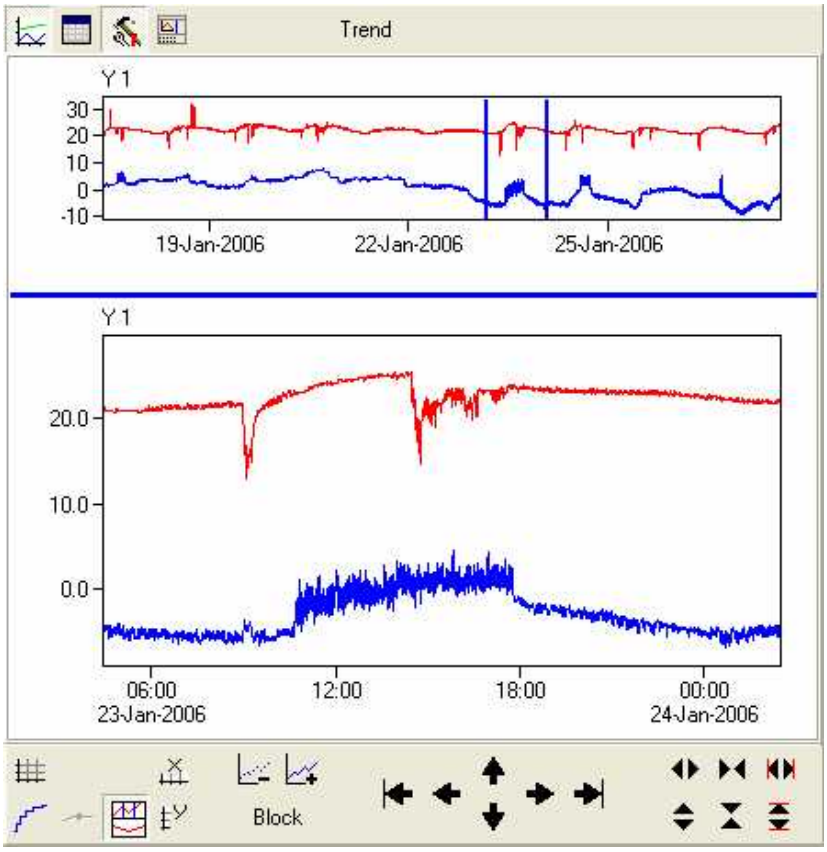
6.2.8 Show/hide gridlines

Show/hide gridlines



6.2.9 Magnify function

The magnifying glass function in the right illustration is available only for opened measurement files (type "*.hds"). Activating the magnify function splits the trend into two sections. The lower section can be operated as normal. The upper sections displays the entire measurement file. The blue lines show the area displayed in the lower section.



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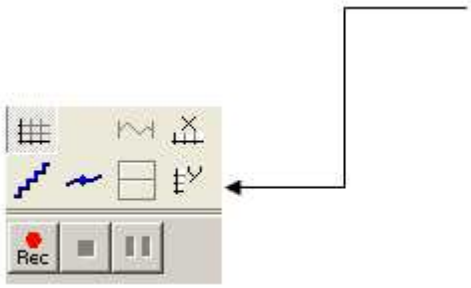
6.2.10 Relative / absolute settings for the Y-axes

These can be switched between values and percentages.

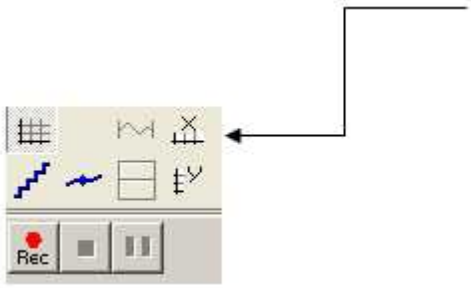
Switching between absolute values/ percentage values



6.2.11 Relative / absolute settings for the X-axes

These can be switched between values and percentages.

Switching between absolute values/ percentage values



Info:

Relative time axes are available in the recorder mode. This is the case when data recorder is running online or a recorder file (*.hds file) has been loaded into a trend.

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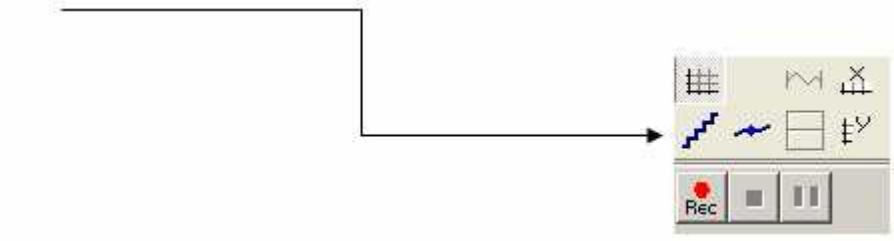
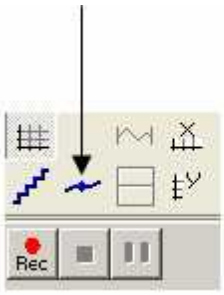
6.2.12 Measurement curve portrayal

Stepped or smooth joining of measurement points



This button enables the joining of measurement points either as a smooth curve or a stepped curve. Smooth joining is the default setting. Stepped joining is necessary when the individual points require measuring out.

Mark measuring points



This button enables measuring points along the measurement curve to be marked with a small cross. The measurement points can be portrayed as joined or non-joined.

6.2.13 Undo function

These buttons are used to undo previous actions.

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6.2.14 Return to online status

Returning from offline mode to online mode

Use the *Return* key to revert to the online mode.

The Return key is an alternative key to the Pause key to switch from offline to online modes. Switching from offline to online using the Pause or Return keys has different effects.

(Refer to Switching between online and offline)

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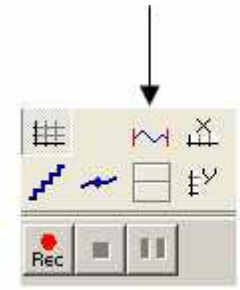
6.3 Oscilloscope mode

The oscilloscope mode enables a static portrayal of high-speed signals.

Oscilloscope on/off



You can set the time range for the static portrayal. All measurements occurring during this period are then portrayed.

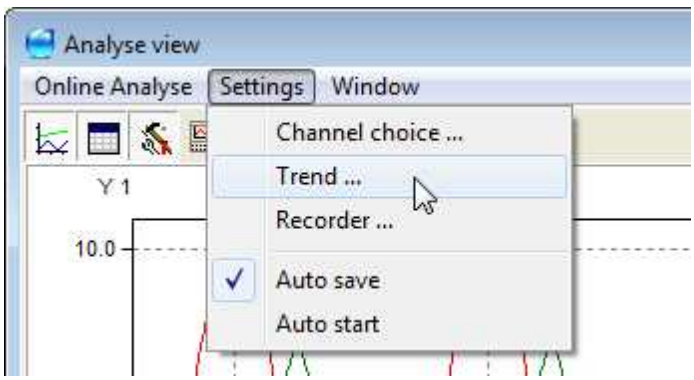
Synchronizing the time period with the measurement signal frequency will create a static portrayal. This means that the time period must correspond to the signal frequency; or be a multiple of it.

Example:

If the signal frequency is 10 Hz and you set a time period of 1 second, then the static portrayal will have 10 oscillations.

Time settings

Diagram menu



Select from the Analyse view ▶ Settings ▶ Trend

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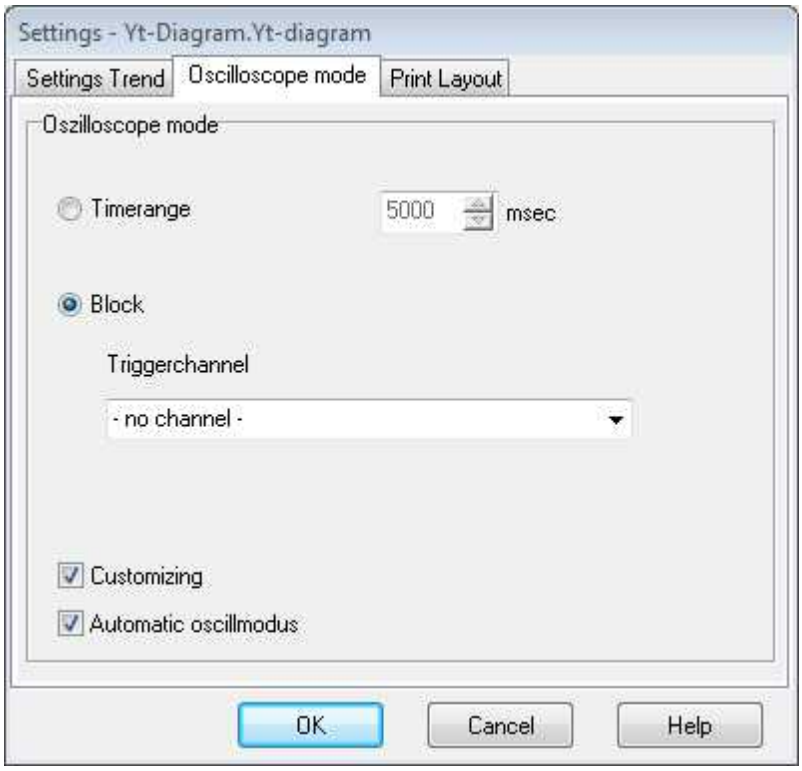
Oscilloscope mode tab

The following dialogue is displayed, in which you can adjust the time period.



Ensure that the *Customizing* and *Automatic oscillmodus* fields are check-boxed.

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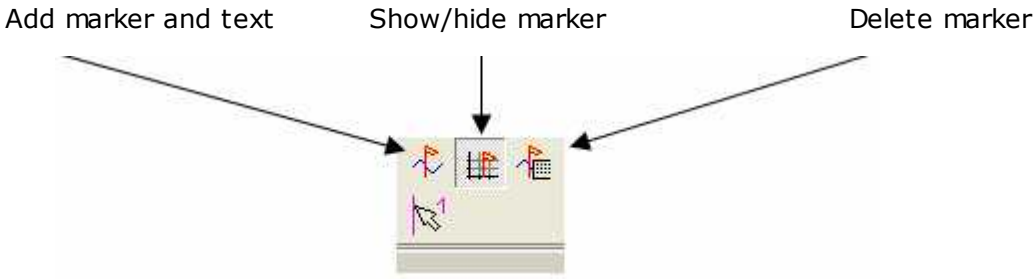
6.4 Markers

Markers are an important tool to evaluate and document properties along the measurement curve.

With *Markers*, you can set time markers at any point required. Text can then be assigned to the time markers. Markers can be stored so that they appear with a subsequent evaluation of the measurement files.

Markers may also be exported to other programs.

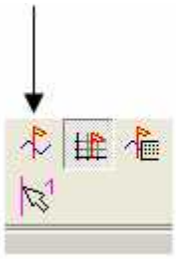
6.4.1 Marker overview



The functions for the separate buttons are described in the following sections.

6.4.2 Assigning text to a marker

Assigning text to a marker



- Left clicking the symbol will display a cross-hair.
- Position the vertical cross-hair at the time value where the marker is to be displayed.
- Confirm by left clicking. The following dialogue appears to enter the marker settings.

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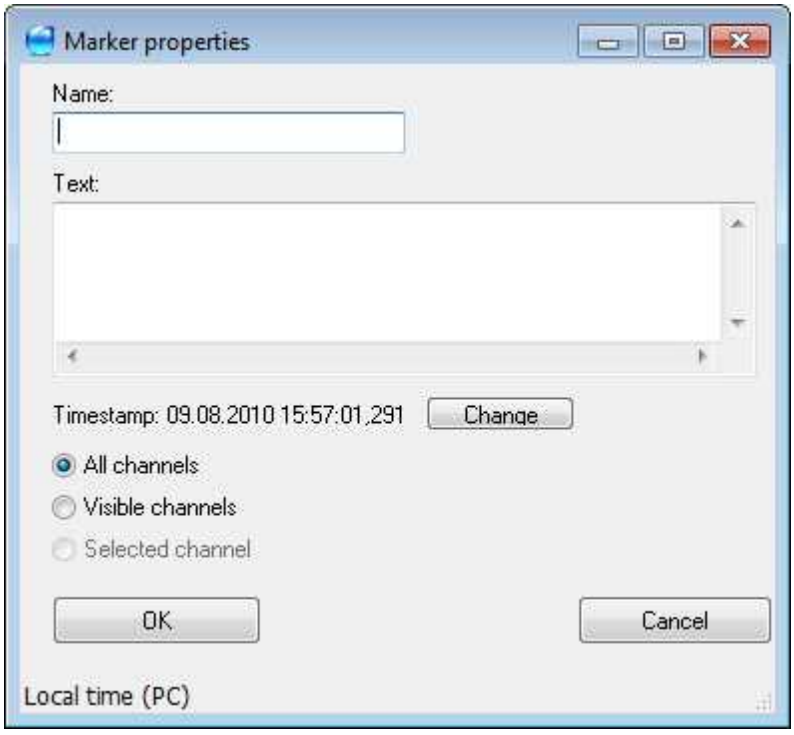
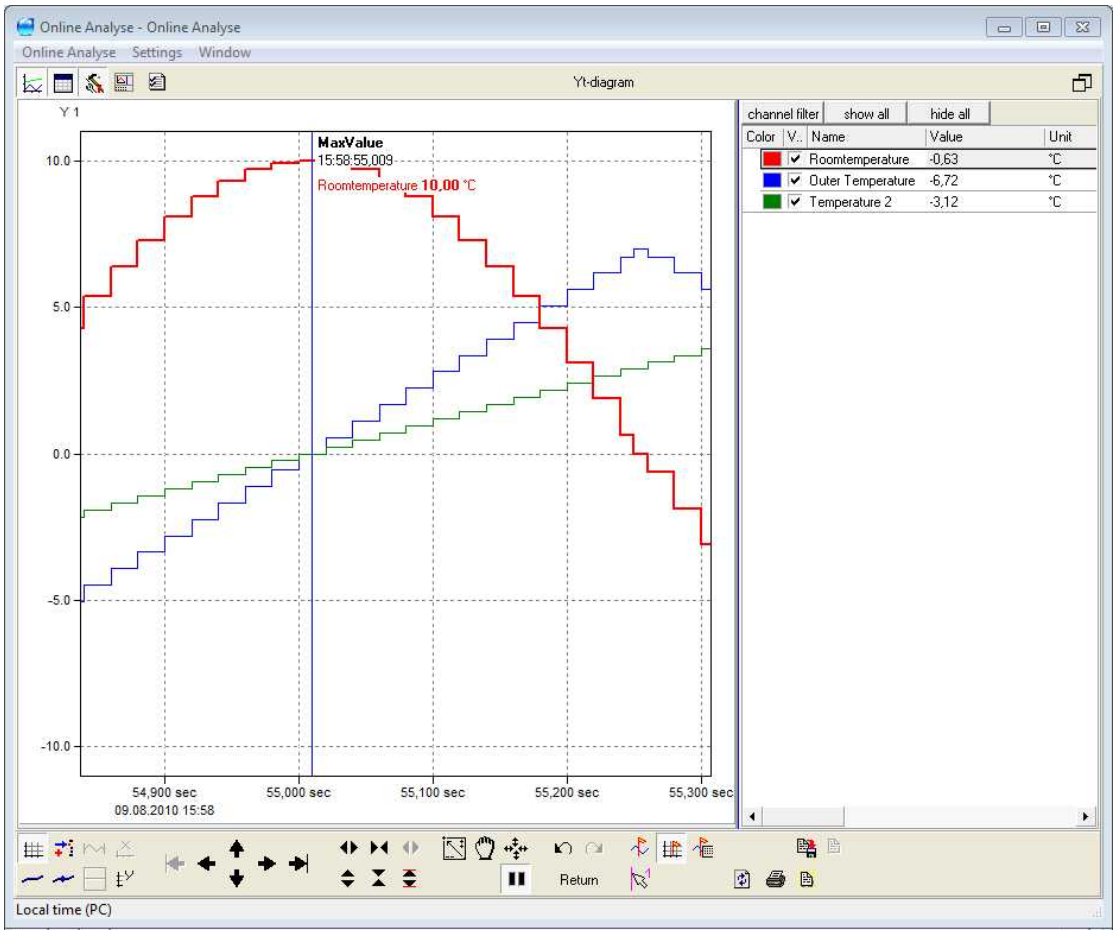


Set markers



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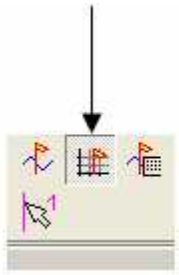
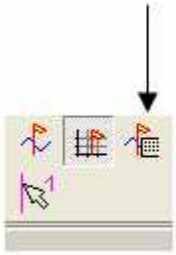
6.4.3 Show / hide marker with text field

Show / hide marker with text field

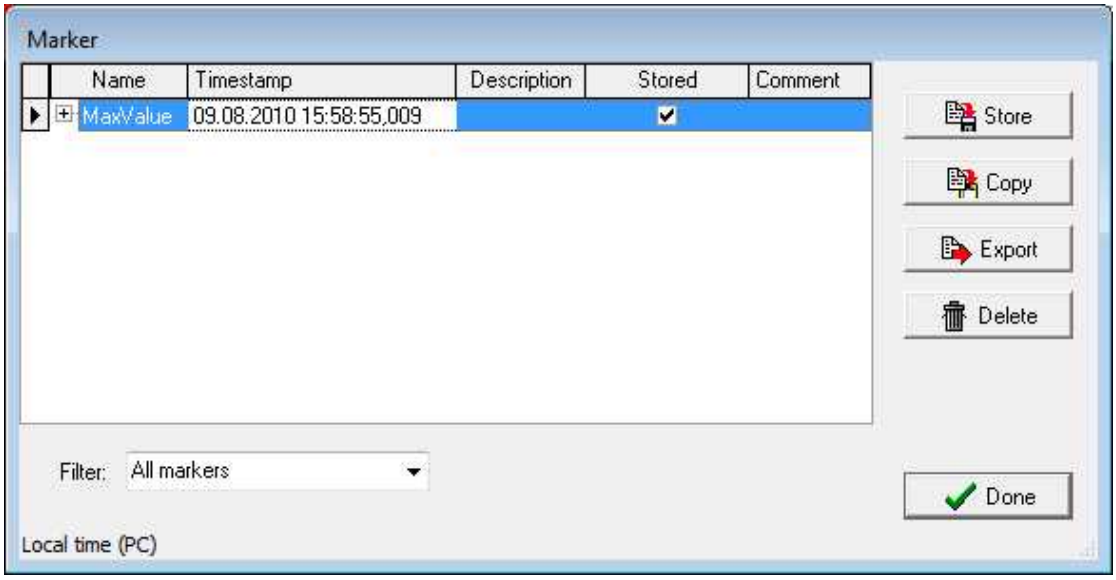


6.4.4 Deleting marker with text

Deleting marker with text



Left clicking the symbol displays a dialogue that enables markers to be deleted. With multiple markers, select the marker to be deleted.



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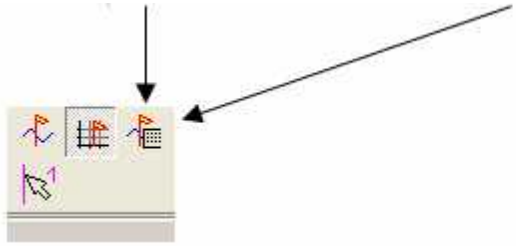
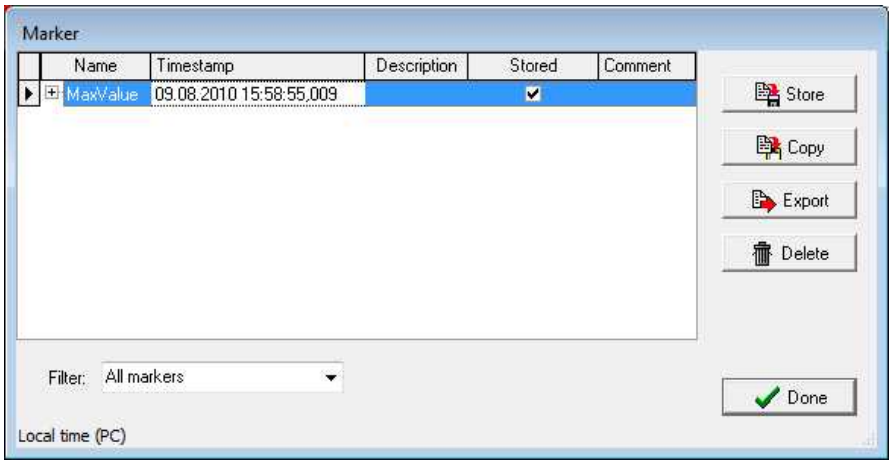
6.4.5 Saving markers and copying to the clipboard

Save marker Copy marker to the clipboard



This opens the following dialogue



Copying
The *Copy* button copies the marker data to the Windows clipboard.

Deleting
Select the required marker.
The *Delete* button deletes the selected marker.

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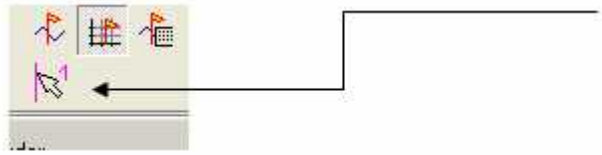
6.5 Mouse cursor

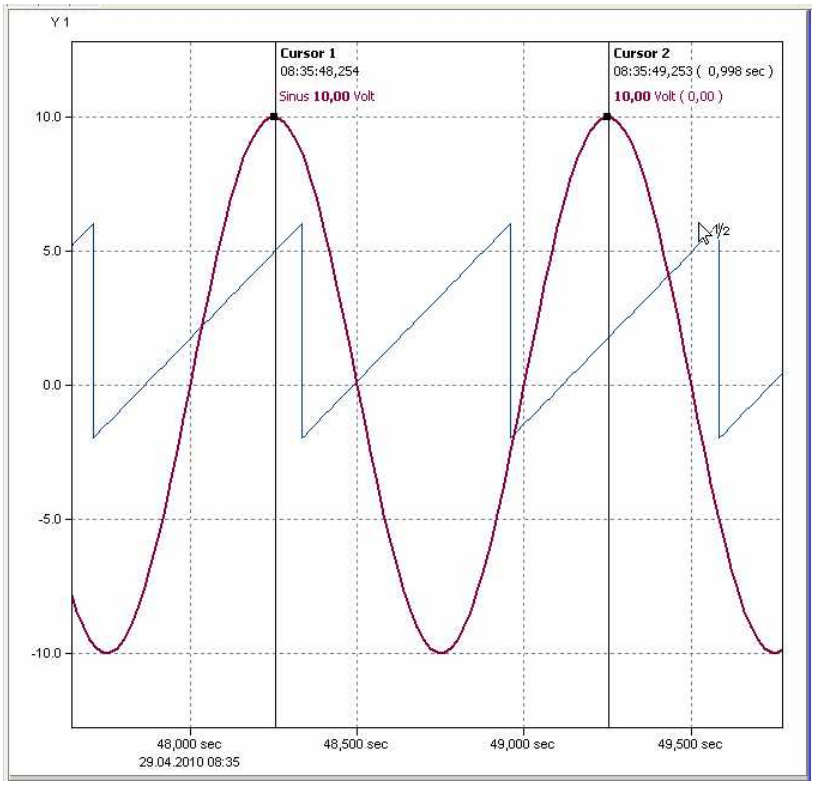
The mouse cursor is an important tool to set, evaluate and document time periods along measurement curves.

The mouse cursor enables you to set time periods at any point. You can then evaluate this period, store the data to an *.hds file or export it into other programs (for example Word).

Setting the mouse cursor



Clicking the *Mouse cursor* displays two vertical cursor lines on the graph area. Position the mouse pointer on the cursor line you wish to move. Move the cursor line to the desired position by left clicking.



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6.5.1 Evaluation

Time difference

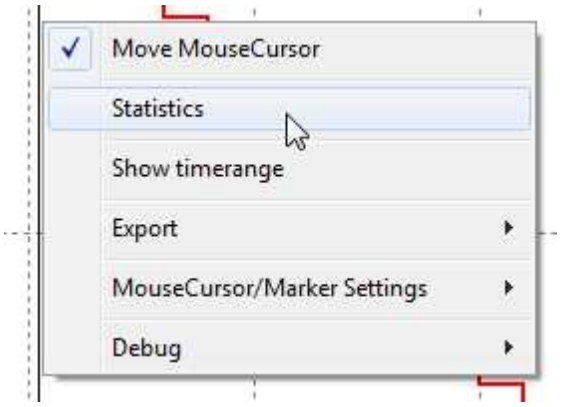
Move the cursor lines with the mouse and the time difference will be displayed at the cursor lines.

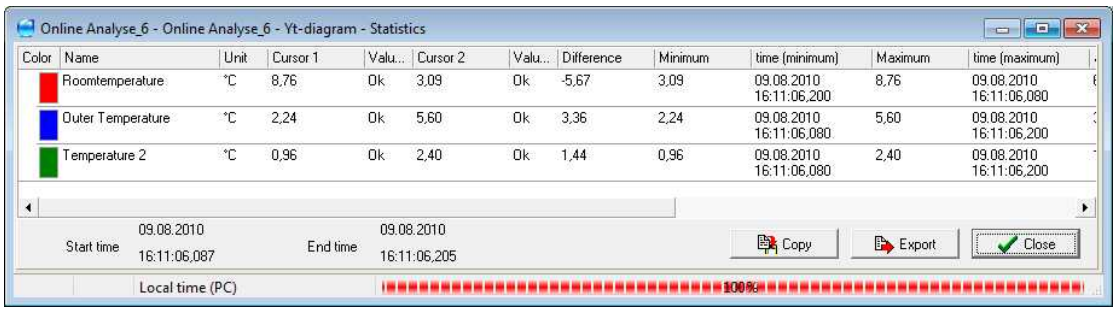
Channel values

Selecting a single channel from the channel table displays its values at both cursor lines. You are then able to measure this specific channel. If no channels are selected, every channel is then displayed that is visible within the graph area.

Statistics

Right clicking between the cursor lines enables statistics to be displayed.





Copying to the clipboard

The *Copy* button enables the area to be copied to the clipboard and inserted into other programs (e.g. Word).

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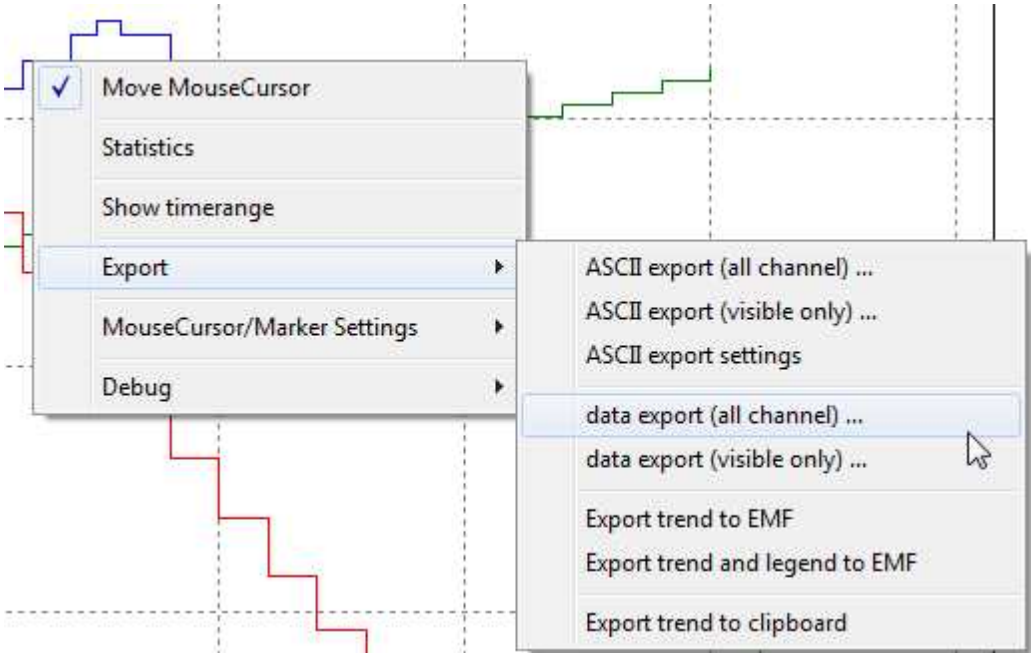
6.5.2 Saving to a measurement file (*.hds file)

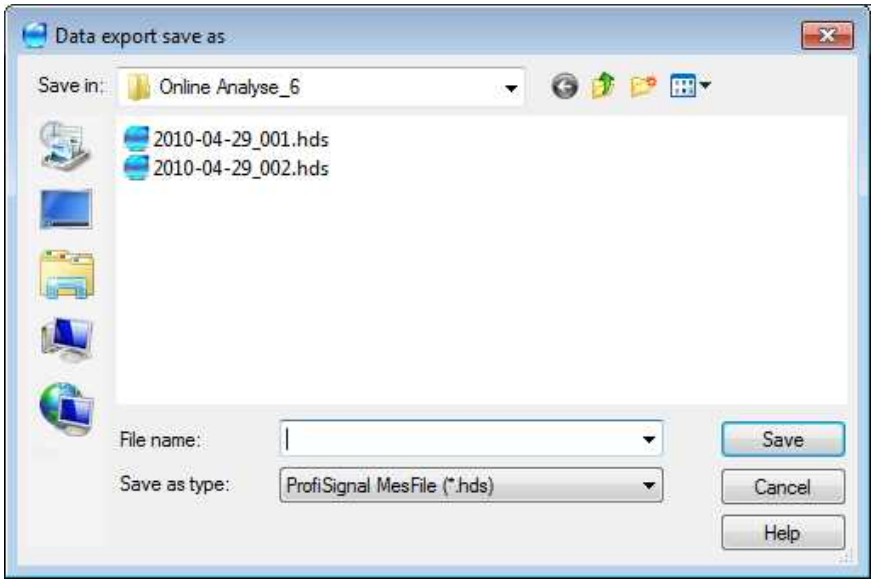
This area can be exported to a measurement data file.

This takes place by doing the following:

Right click between the cursor lines ▶ Export ▶ data export



This opens the following dialogue. Input a name and then save the measurement file.



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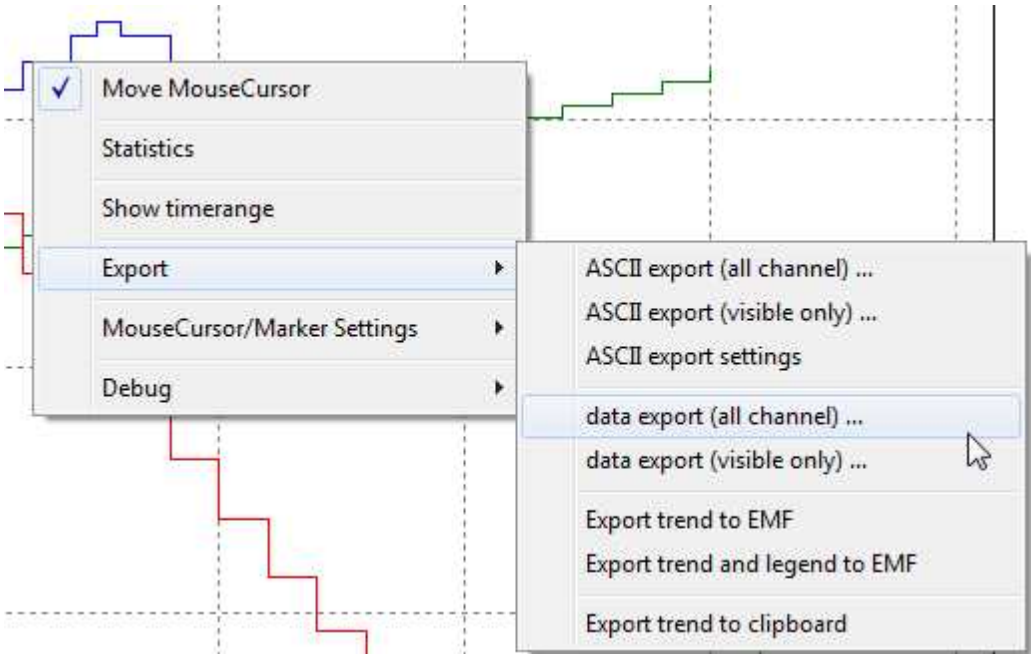
6.5.3 Exporting to other programs



Exporting to CSV file

Right click between the cursor lines ▶ Export ▶ ASCII-Export

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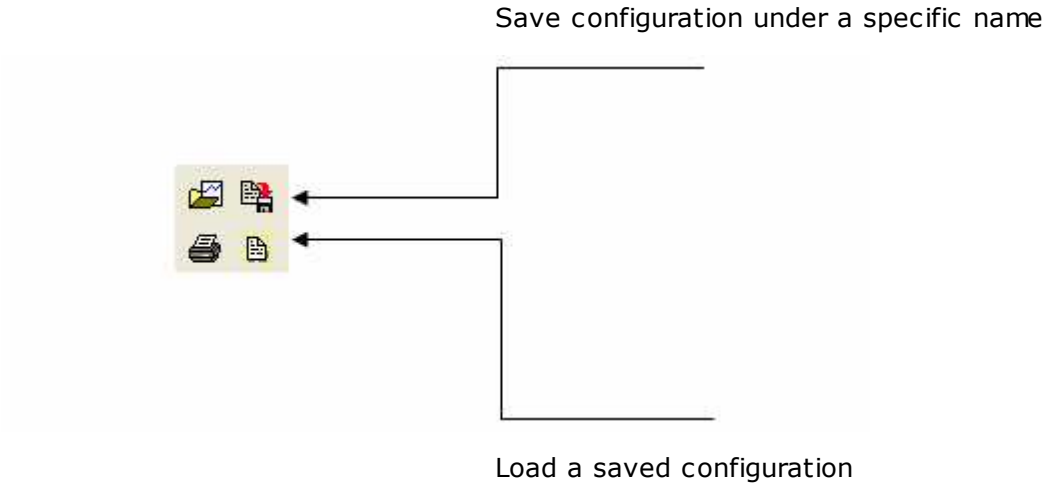
6.6 Saving / loading configurations

This function is useful for recurring and similar configurations.

A trend configuration can be saved under a specific name.

The saved configuration can be loaded into a trend.
Only the channels then need to be assigned to the trend.



Configurations can be given specific names.
Configuration files are given a *.tcg file extension and saved to *Config* folder.

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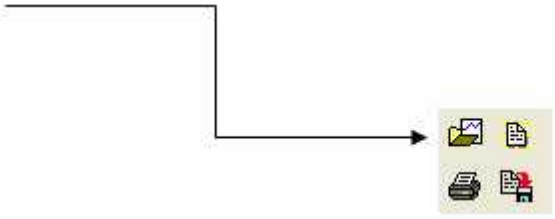
6.7 Loading "*.hds" measurement data files

Measurement recordings are referred to as recorder files and are described in the following sections.

A batch process can be loaded offline into a trend by loading one of the saved files from the batch process.
All Online Analysis functions are then available.

Load a recording from an "*.hds" file



Clicking this button opens the folder in which the recorder files for the Online Analysis are located.
Now you can make a selection from the saved files.

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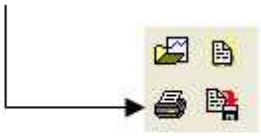
6.8 Printing out trends

Print specific trends



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7 Appendix: Creating test channels

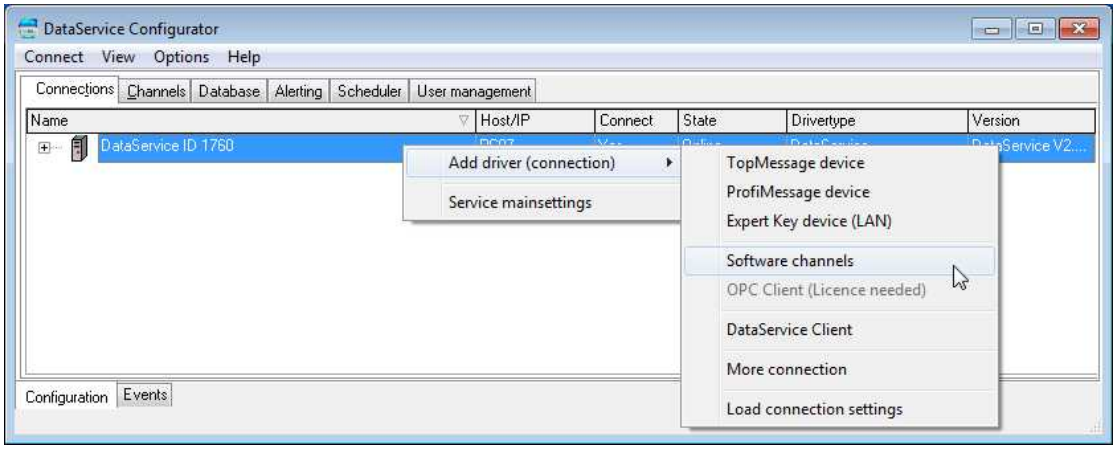
Function

Test channels are channels that require no hardware. When hardware is unavailable, test channels can be used instead of hardware channels. These enable functions such as sinus, square and sawtooth to be assigned to specific channels. Test channels can be used to discover and test out the full capabilities of ProfiSignal.
Test channels are set up and configured within the DataService.

Setting up a new group of *software channels*

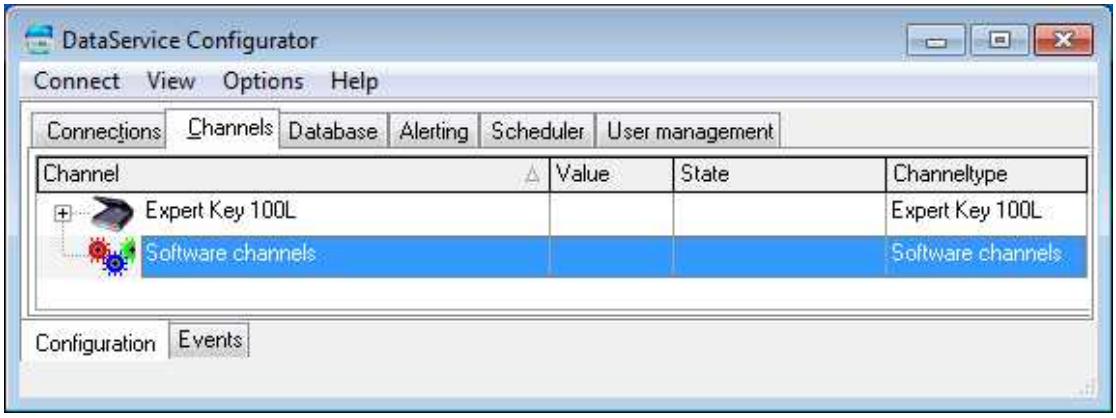
DataService ▶ Connections

In the DataService, select the *Connections* tab.
Right click on *DataService* from the displayed tree. This opens the following dialogue.



Select ▶ Add driver (connection) ▶ Software channels

A new *Software channels* category will then appear in the tree display.



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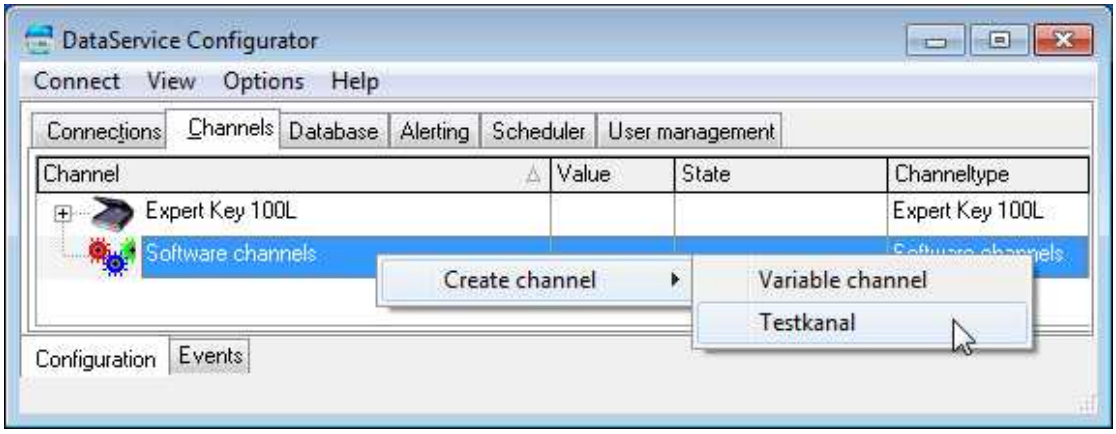
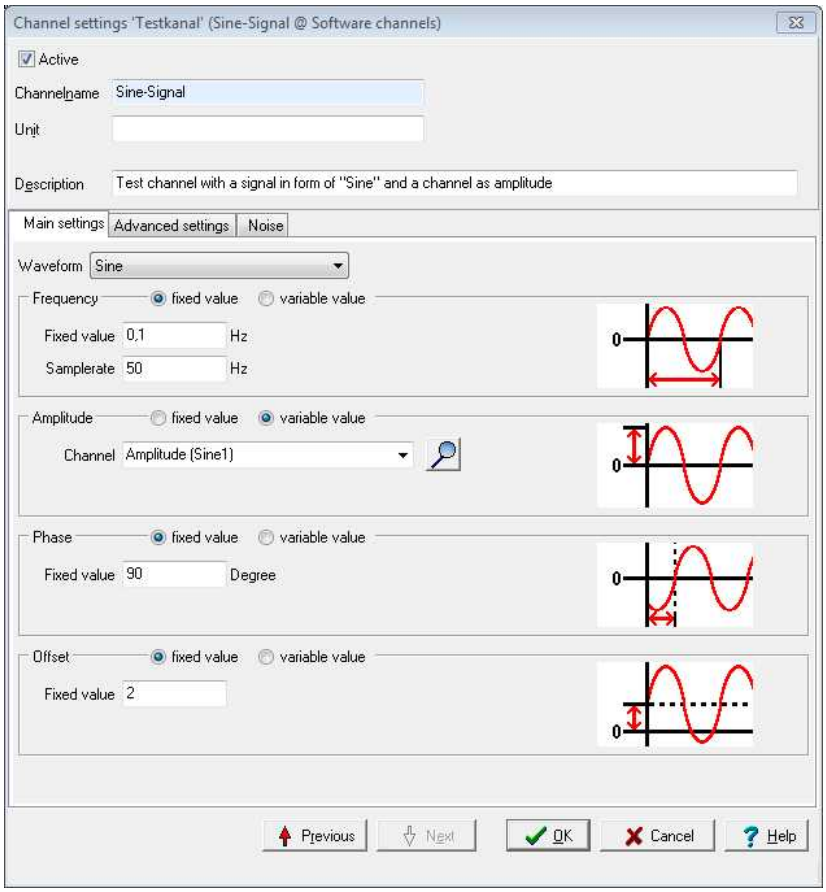
Creating a test channel

Select ▶ Channels, right click Software channels ▶ Test channel ▶ Create channel / test channel



This opens a dialogue in which you can create and configure a test channel.



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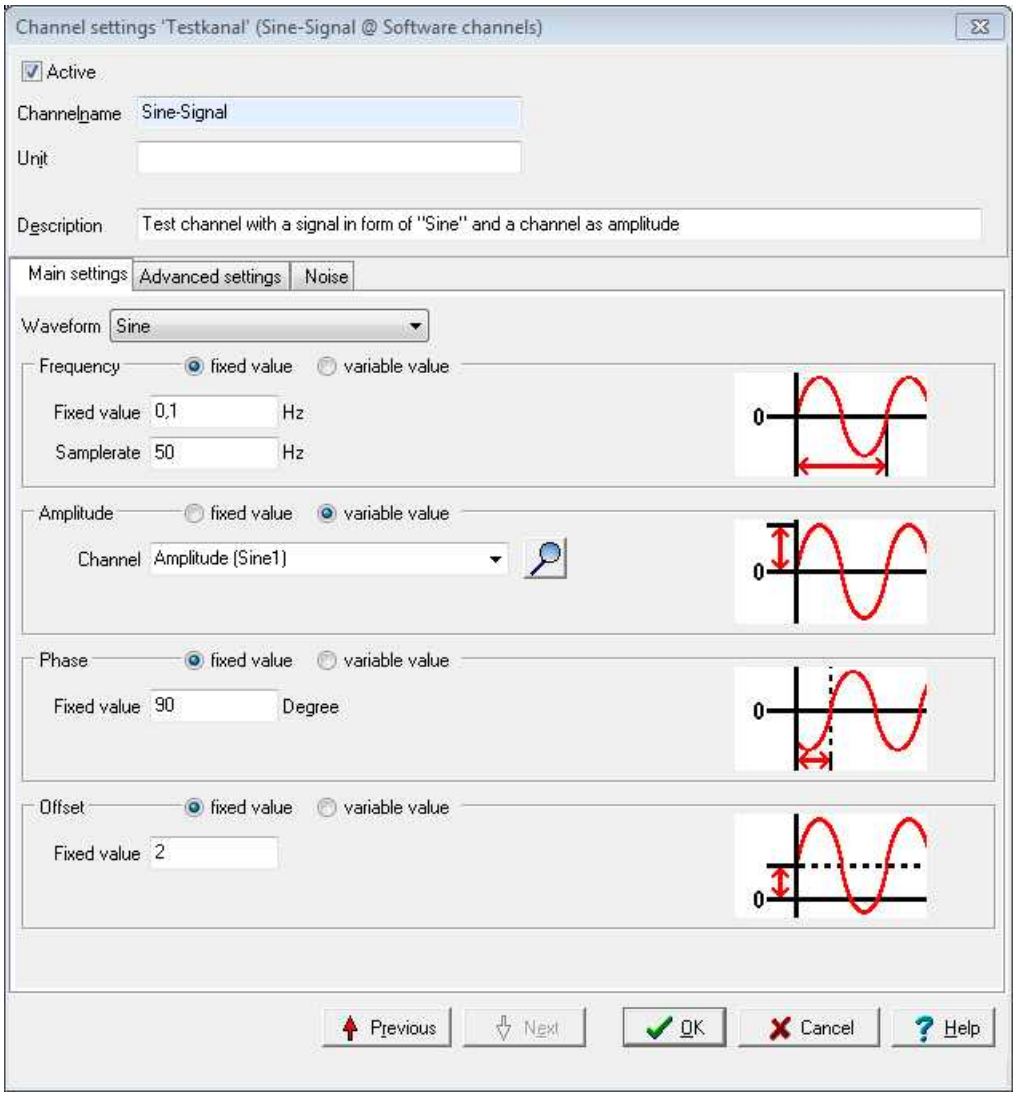
7.1 Configuring a test channel

Channel name and unit

Assigning a name and unit to the test channel. For example, *Sine-Signal* and *a Sine unit*.



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Frequency

Select *Fixed value*. A practicable value is between 0.1 and 1 Hz.

Amplitude

Select *Fixed value*. A practicable value is between 0.1 and 10.

Phase

Select *Fixed value*. A practicable value is between 0 and 180°.

Offset

Select *Fixed value*. Select an offset that shifts your curve away from the middle and towards plus or minus.

Selecting *variable value* instead of *fixed value*

You can then select here any required channel - even another software channel - whereby this channel will override the software channel.

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8 Appendix: ProfiSignal in networks

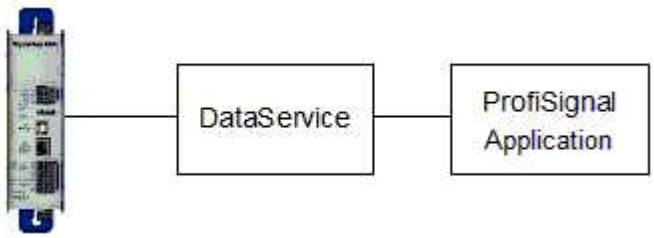
If you use TopMessage or Expert hardware, you can connect the hardware and software to existing data networks via a LAN interface.

If you use the Expert hardware you can connect the devices to a PC via a USB and perform data evaluation on multiple PCs.

Minimum configuration

A complete system requires at the least the following:

- one device
- one DataService program
- one ProfiSignal application



Info:

The DataService is the link between the measurement hardware and the connected ProfiSignal applications.
The task of the DataService is to configure hardware and process measurement data.

Measurement and control data travel from the hardware to the DataService where it is passed on to one or more applications.

Distributed applications

The most frequent set ups use one or two hardware devices with one or two ProfiSignal applications.

However, there are no limits. You can use multiple and differing hardware types with applications from ProfiSignal Go, Basic and Klicks in distributed systems.

The DataService and the ProfiSignal applications can be distributed over multiple PCs.

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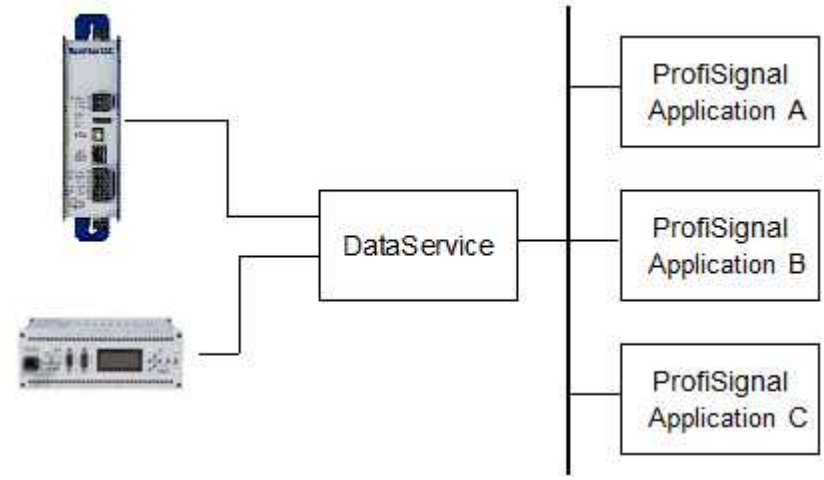
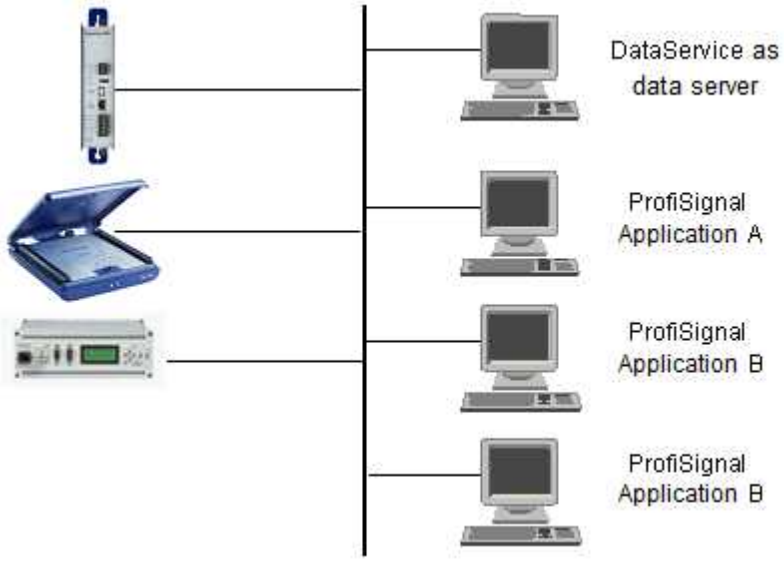


DataService as a data server



It is to be emphasized that you are able to use existing company networks for hardware/ software communication.

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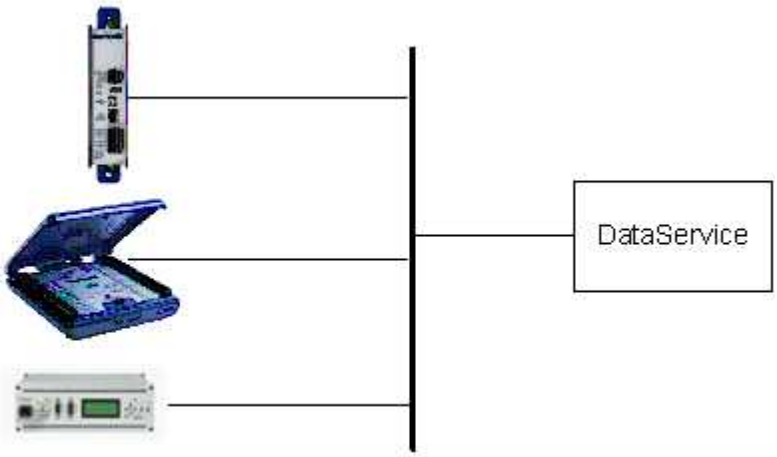
8.1 Creating network connections

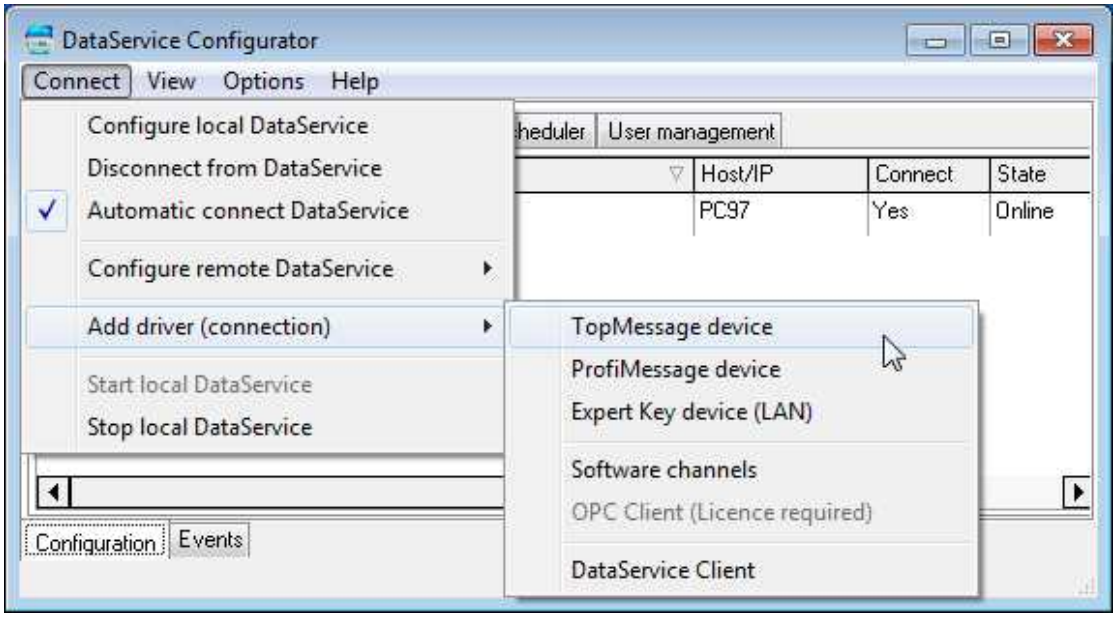
The DataService is the link between the measurement hardware and the connected ProfiSignal applications.

Between hardware and DataService

By assigning hardware devices to the DataService.



Open the DataService Configurator.



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Select ▶ Connect ▶ Add driver (connection)

- A dialogue appears showing all the hardware devices on the network that can be included in this DataService.
- Double click the device you wish to add.
- The device's channels are now available in the DataService and will be processed by the DataService.

Between the DataService and applications

These are linked by assigning channels to an application. A detailed explanation is available in the section Object group: channels, variables.

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