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OMYL-SOFT-PLUS

Omega View Plus Software for OMYL Series Portable Data Loggers

omega.com info@omega.com

Servicing North America:

U.S.A.: Omega Engineering, Inc., One Omega Drive, P.O. Box 4047
Stamford, CT 06907-0047 USA
Toll-Free: 1-800-826-6342 (USA & Canada only)
Customer Service: 1-800-622-2378 (USA & Canada only)
Engineering Service: 1-800-872-9436 (USA & Canada only)
Tel: (203) 359-1660 Fax: (203) 359-7700
e-mail: info@omega.com

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Contents

Introduction

Welcome to GraphTool

Welcome to the graphing tool “GraphTool”. This manual enables you to quickly get familiar with the windows-program and to quickly get started.

It describes how to install the package and how to execute most common program operations. It provides tips and makes you aware of some new features and functions.

If you want to know more details or technical features about the graphing functionality, please proceed to the corresponding sections, where the available information are described.

What is GraphTool?

GraphTool is a windows-program used for graphing and evaluating measuring values based on files created by OMYL series data loggers. This program operates under Windows XP and Win7.

The Online-Help is the main source of information about GraphTool. All necessary program functions are described in the menu **Help** under the item **Contents**. Further information can be found in the respective sub item by clicking the mouse.

In all dialog boxes, quick help with hints and information to the respective entry fields and processing possibilities are provided. Just activate the corresponding **Help buttons**

The program uses the keyboard as well as the mouse for easy handling. In the standard user setting, the **Icons** in the menu bar are provided with **short help**.

Overview

Delivery Contents

Your OmegaView or OmegaView Plus package should contain the following:

- 1 pc OmegaView incl. Graph Tool supplied on a USB Memory Stick
- OmegaView user guide manual as PDF, which will be installed in the directory DOCS.
- GraphTool license number as separate document. (only OmegaView Plus)

If any of the above listed part is missing, please contact Omega.

System requirements

To run your OmegaView properly, your system should at least meet the following requirements. Normally, you can install and operate with OmegaView if your Windows is properly installed; you have a free communication port USB and enough hard disk space available.

Hard-/Software	Minimum-Configuration	Recommended Configuration
Computer:	Intel Pentium, 1 GHz	Intel Pentium III, 2 GHz
Operating system:	Windows XP/Win7	Windows XP/Win7
RAM:	512 MB	1 GB or more
Monitor:	Any windows-supported monitor	Monitor with VGA- or higher resolution graphic
Mouse:	Any windows-supported mouse	Any windows-supported mouse
Port:	1 free USB-port	1 free USB-port
Printer:	Any windows-supported printer	Any windows-supported printer

Installing

GraphTool is automatically installed, when OmegaView for Windows has been installed.
For using graph-functionality, you only need to enter the license key number as described in the next chapter.

ATTTENTION:
Some functions described in this manual will only be available if the OmegaView Plus license has been installed.

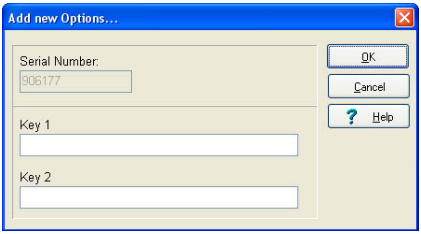
Software-Versions and Options

Software-Versions

The program OmegaView for Windows is the main software for setting up and using the data loggers. It is available in two versions OmegaView and OmegaView Plus.
The basic – Version does not offer any graphing functionality while the Plus versions include the graphing tools “GraphTool”.

Activating the Options

By choosing in the main menu **Help** the sub-menu **activate options,** the shown dialog box will be opened. You may activate here further software options with the help of a registration key. Please contact Omega to purchase an OmegaView Plus registration key (P/N OMYL-SOFT-PLUS).



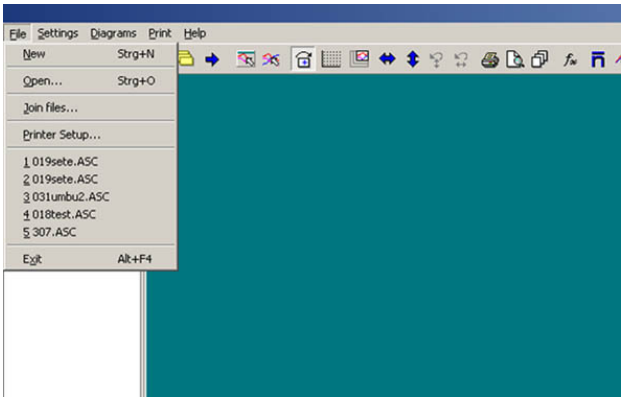
The User Interface

The Menu

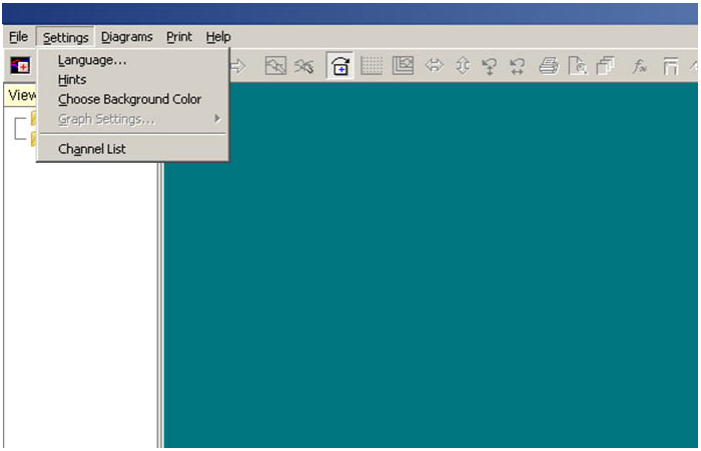
The user interface of the program is graphical and is in accordance to the common windows-standard. You can activate each function either via **Menu** or via buttons in the **toolbar**. In addition, the buttons contain short hints about its function. Please note, only menus and buttons, which are necessary for the program part, currently in use are active.

The menu is made up of seven functional groups.

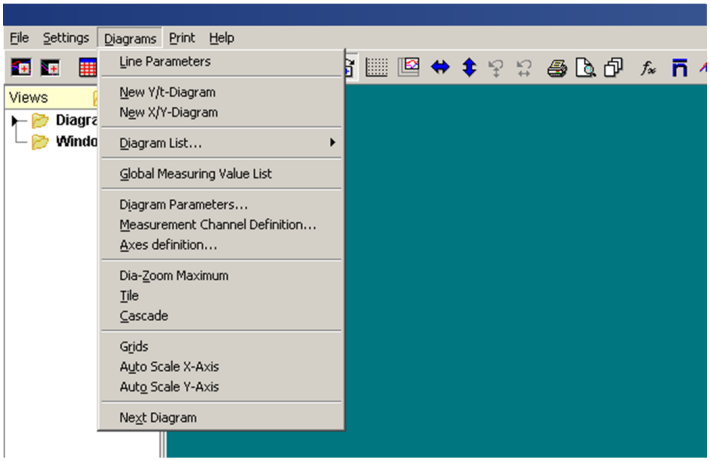
The **File** group contains general information about program execution and managing, saving of measurement and configuration data and printer settings.



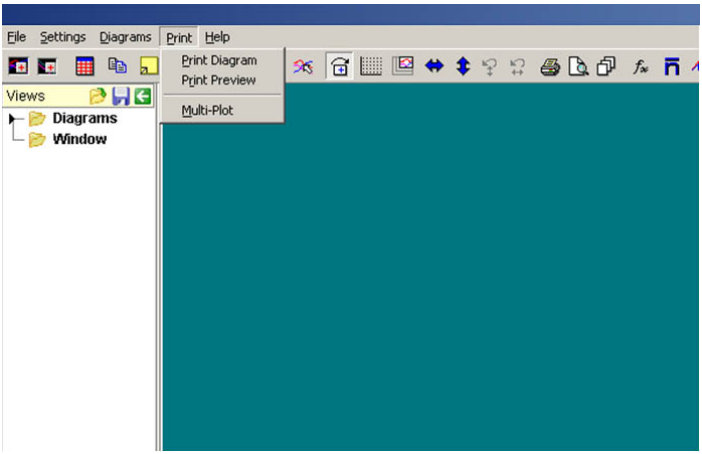
The **Settings** group allows a remote setup of all program devices setting of the connected measuring devices and sensors.



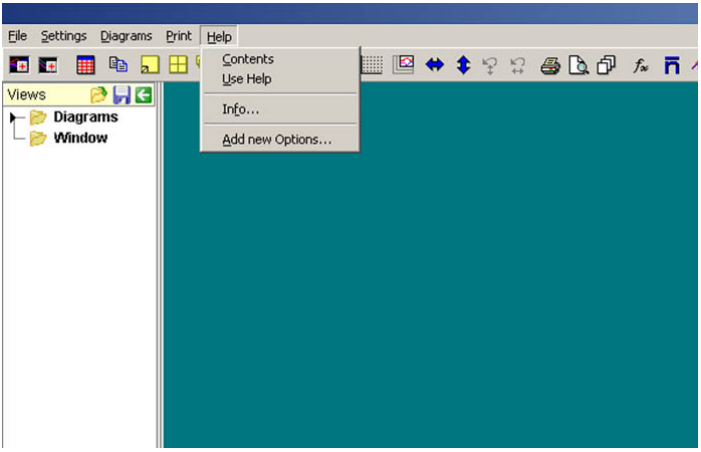
The **Diagrams** group covers all functions for the representation of the measurement data in online mode and also for the representation of the saved and recorded measurements.



All printer- and output possibilities are defined and listed in the menu **Print**.

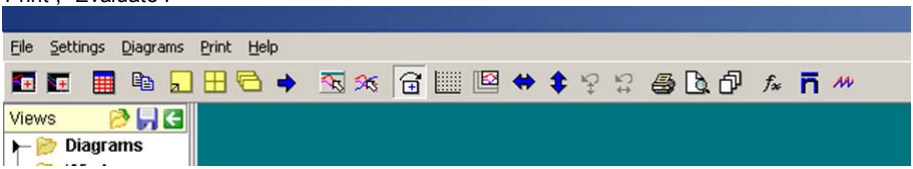


The **Help** group contains an extensive Online-Help system, which is available in different languages. In addition, the current program version could be shown here and you may as well do modifications in your program version adapted to your own needs by activating the options.



The Toolbar

In addition to menu bar, the functions of the menus may be activated via **buttons** in the toolbar of each dialog box. Only buttons, which are necessary for the program part, currently in use, are active. The toolbar on the main screen essentially contains buttons for the menu “Diagrams”, “Print”, “Evaluate”.



These button commands are described below:


Creates new Y/t-Diagram


Creates new X/Y-Diagram


Creates global measurement value list


Inserts Diagram in the memory clipboard


Display diagram in entire screen mode


Arrange diagrams in tiles


Arrange diagrams in cascades


Go to next diagram


Modify diagram parameters


Modify line parameters


Switches the function “Diagram-Settings Apply to All” ON and OFF


Switches the grid lines ON and OFF


Auto-Zoom


Automatically scales the X-axis to maximum


Automatically scales the Y-axis (axes) to maximum


Previous view Y-axis

Previous view X-axis

Print

Page Preview

Multi-Plot (Standard)

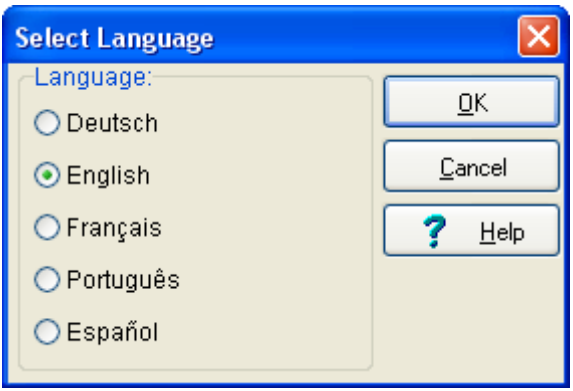
Enter / edit (Standard) Formulae

Mean Value Calculation (Standard)

Sum Calculation (Standard)

Selecting a Language

Select from the main menu **Settings** the item **Language**. The dialog box Select Language will appear. You may choose here your desired language. All text and hints will be displayed in the chosen language.



Checkmark your desired language and click OK.

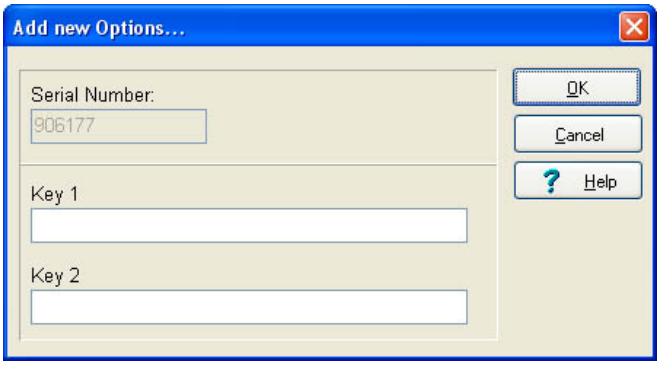
Note: The selected language is immediately active. Re-starting the program is not necessary.

Help

The Online-Help may be activated in the main menu **Help** under the item **Contents**. Just click the colored marked help file with the left mouse button to proceed to the corresponding help topic. With the command **Use Help**, you can proceed to the general help topics of the Windows-Operating System.

Clicking **Info** enables you to obtain the displayed information about the program.

Via the menu item **Add new options** the shown dialog box will be opened. You may activate here further software options with the help of a registration key. Please contact Omega to purchase an OmegaView Plus registration key (P/N OMYL-SOFT-PLUS).

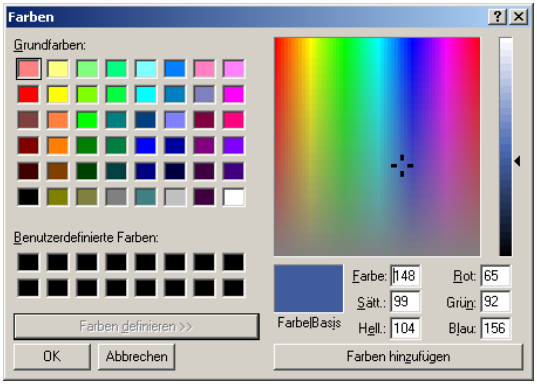


Hints

You may activate **Hints** in main menu **Settings**. The program displays the corresponding hints for each buttons or menus, if you move the mouse near the buttons or menus. Normally hints are always set active.

The Background Color

In the main menu **Settings** you may choose the **Background Color** for your screen. The program will then display the chosen background color.



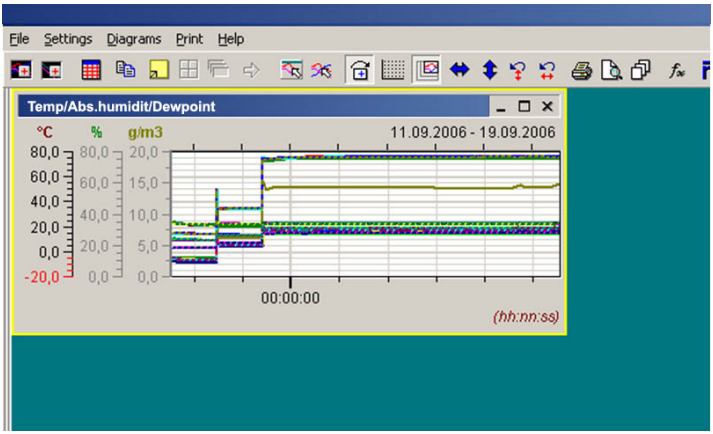
The Diagrams

Representation Possibilities

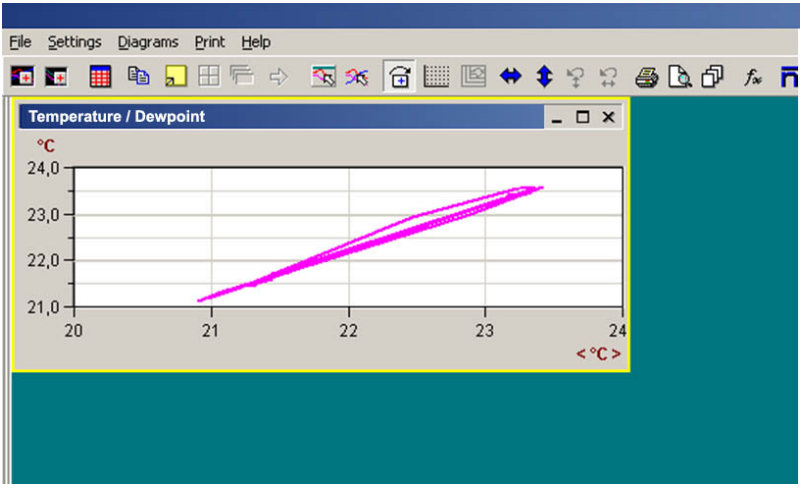
The program offers you six possibilities to create diagrams from your measuring and evaluation data and to create a measurement data list that is described in the following chapter. With the help of the diagrams and the measurement data list, you can create a historic –already recorded and stored – data and also an actual trend data during the measuring process. The items in the main menu **Diagrams** or the buttons in the toolbar enable you to create, delete, arrange, scroll and format each of these diagrams –also during the measuring process.

You may also enlarge your diagram view. To do so, position the mouse over the diagram border or corner, click the left mouse button and drag the diagram to the desired size. In addition, it is always possible to obtain an entire screen view. Details about each of these diagrams are described in the respective topics in this manual.

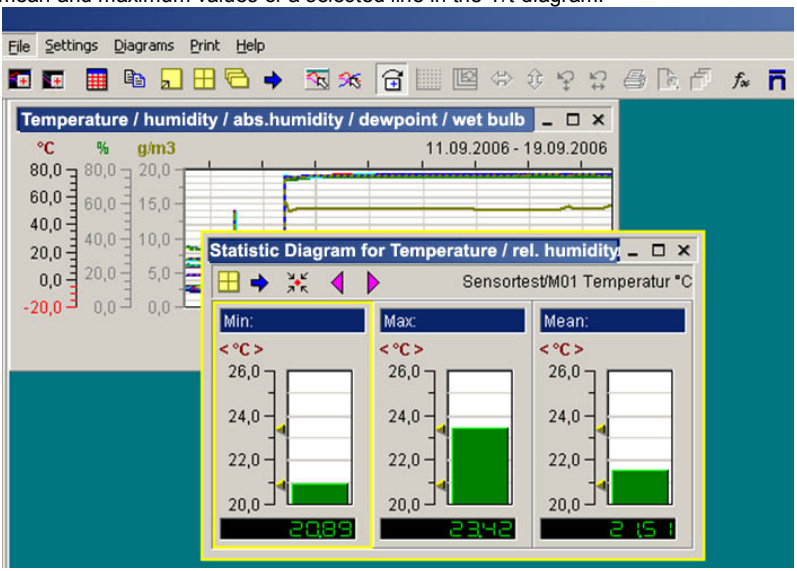
The **Y/t - Diagram** shows the measurement values with respect to time.



The **X/Y - Diagram** shows the measurement values with respect to a measurement channel. The first value of the measurement channel definition determines the value of the x-axis.



The **Statistic Diagram is an additional function to the Y/t-diagram**. It displays the minimum, mean and maximum values of a selected line in the Y/t-diagram.



Creating a Diagram

The diagrams for the presentation of your measurement and evaluation data may be created either via the items in the main menu **Diagrams** or with the help of the **Buttons** in the toolbar.

Creates new Y/t-Diagram

Creates new X/Y-Diagram

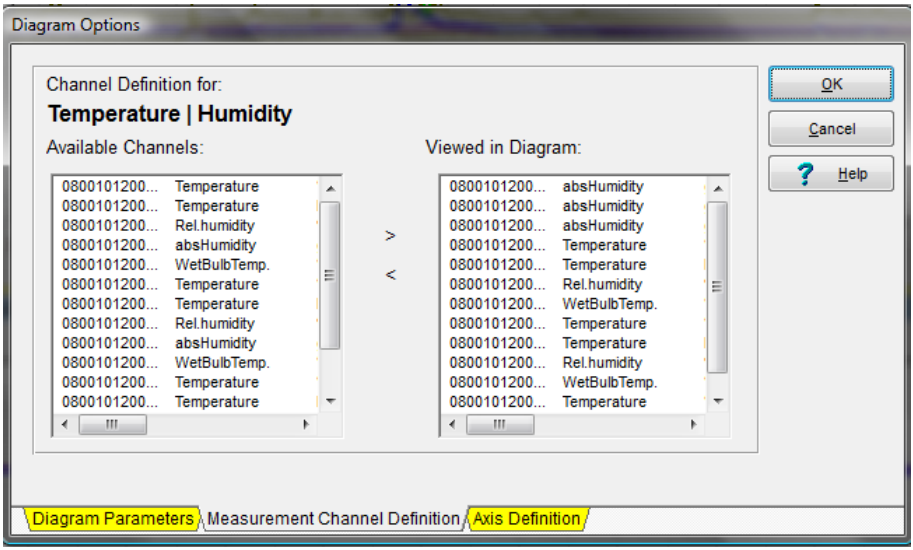
After activating one of the functions mentioned above, the selected diagram will be displayed in its partial view. The functions for creating and formatting a diagram are explained below.

Note: The statistic diagram is a supplement function to the Y/t-diagram and could only be drawn up from the local menu.

Assigning a Channel

After selecting your desired diagram type, choose in the main menu **Diagram** the item **Measurement Channel Definition**, In the dialog box you may define or modify the measuring or formula channels for each of your diagrams.

This dialog box appears automatically if an online connection to the available channels exists or if a saved file is opened.



To **add** channels to a diagram, click the desired channel on the left window with the left mouse or hold the left mouse pressed to select more channels at a time, and then enter the chosen channels into your diagram by simply clicking the button.

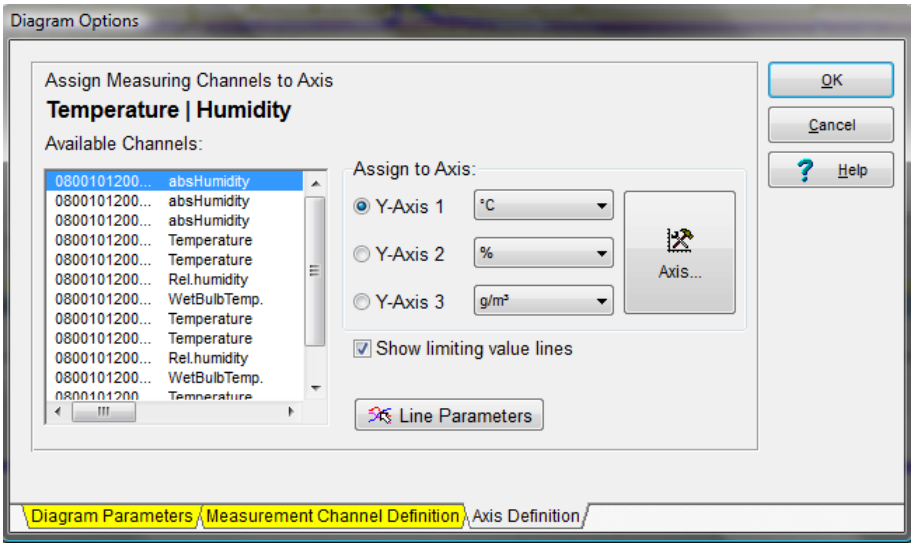
To **remove** channels from a diagram, click the desired channels on the right window then click the button to remove these channels from the diagram.

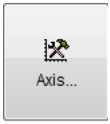
Note:: You may also activate this function by double clicking a diagram title or via the local menu.

Defining an Axis

Select in the main menu **Diagram** the item **Axes Definition**, to choose a Y-axis for the Y/t or X/Y diagram. The corresponding diagram must be active.

A maximum of three Y-axes at a time may be shown in a diagram. A selection box displays all possible units. Activate **Show limiting values** to show values defined as limits in the channel table.



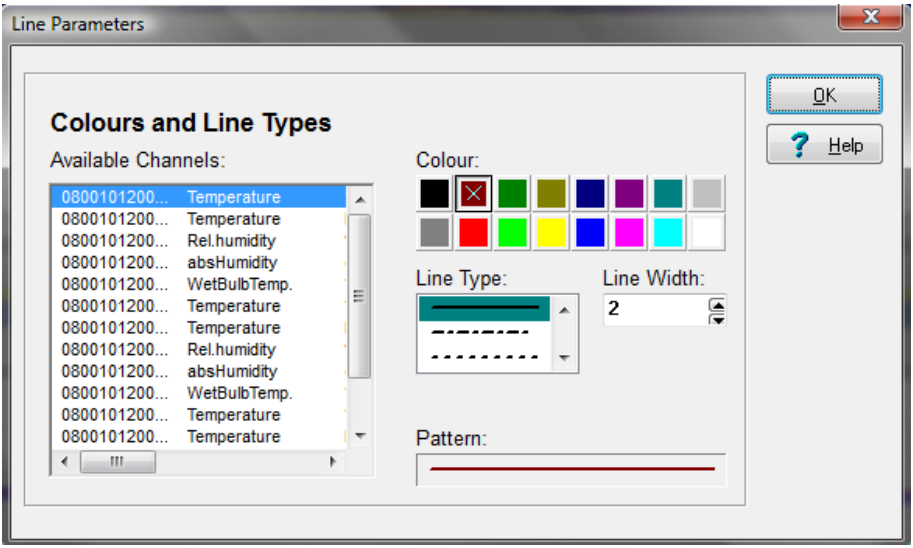


Activates the axes scaling for setting the display range.

Note: The function Axes Definition is only available for the Y/t and X/Y-diagrams. **Digital monitoring diagrams, function display panel, column monitoring diagrams and statistic diagrams have no Y-axes**.

Setting of Line Parameters

Via the item **Line Parameter** in the main menu **Diagram**, you may get into the dialog box for the line parameters. Here you may set for each measurement line the color, line type, and line width. Select a line on the left window and modify the corresponding line parameter by clicking with the left mouse button.

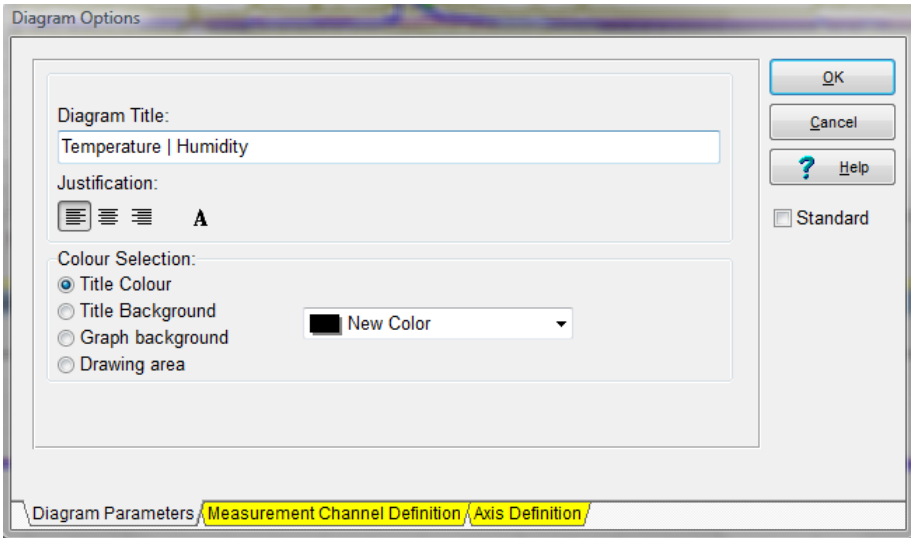


 The line parameters are also available via this button in the toolbar.

Note: The function Line Parameter is only available for the Y/t and X/Y-diagrams. **The digital monitoring diagrams, function display panel, the column monitoring diagrams and statistic diagrams have no Y-axes**.

Setting/Copying of Diagram Parameters

To modify diagram title, text color, text background color, font type and text justification, choose in the main menu **Diagram** the item **Diagram Parameter**.

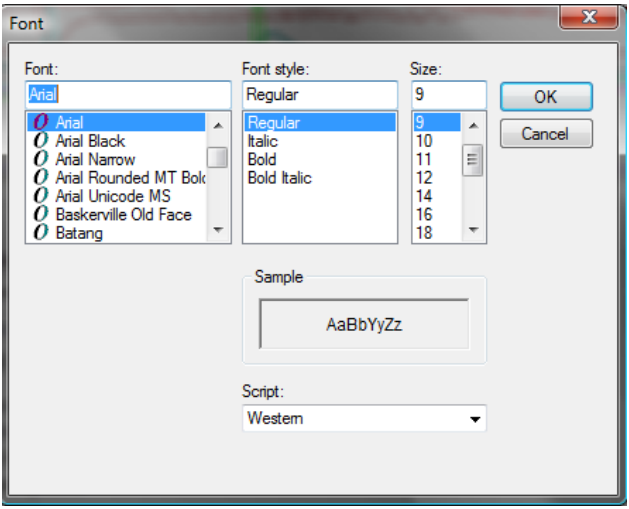


Text **left justified**

Text **centered**

Text **right justified**

Opens the selection menu to change the **Font Type** for the available font types.



In the color selection you may chose the color of your text title and the background color. Activate the checkbox **Standard** to set your chosen settings as standards for all other diagrams.

The diagram parameters may be activated via this button in the tool bar.

If this button in the tool bar is active, current diagram settings will be copied to other diagram.

Arranging Diagrams / Deleting / Copying to the memory clipboard

Copy the current diagram to the clipboard

Changes from a diagram partial view to an entire screen view and back.

Arranges your diagrams in tiles on the screen optimal.

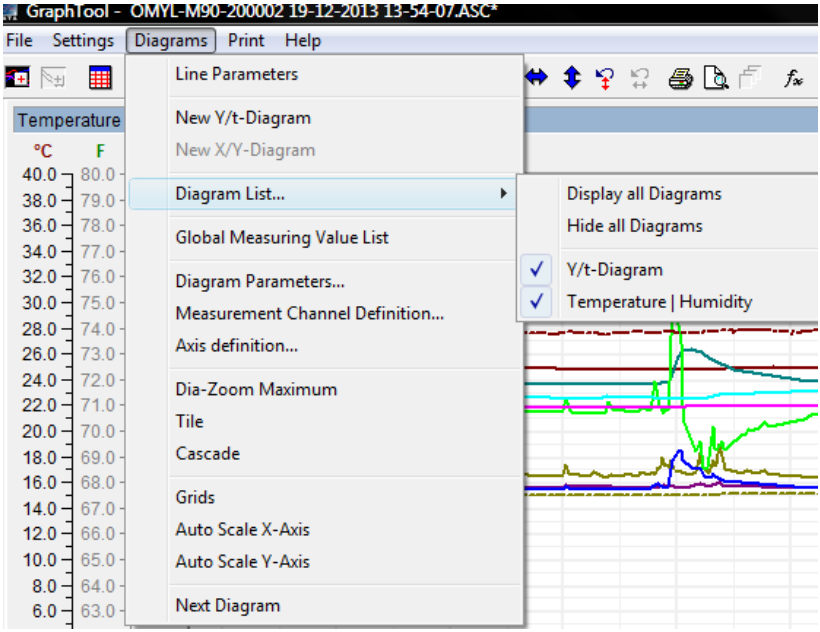
Arranges the diagrams on screen in cascade.

Scroll from one diagram to the other.

Diagrams display On/Off / scale down / delete

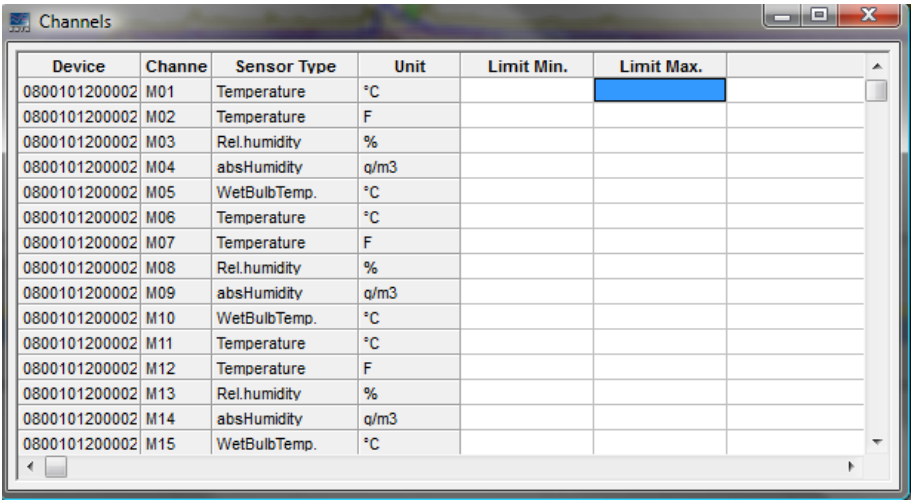
The diagrams may be displayed On/Off, scaled down and deleted via normal windows functions.

To display a diagram again, select in the main menu **Diagrams** the item **Diagram List**. Here you may either display On/Off all diagrams or just a single diagram on the screen again.



Channel list

You may have the list of channels permanently displayed at your monitor. Choose hereby the command **Channel List** in the main menu **Settings**. The table list shown above with the current connected channels will be displayed. The table list remains active for all setting steps within the program, until it is again turned off.



Device	Channe	Sensor Type	Unit	Limit Min.	Limit Max.
0800101200002	M01	Temperature	°C		
0800101200002	M02	Temperature	F		
0800101200002	M03	Rel.humidity	%		
0800101200002	M04	absHumidity	g/m3		
0800101200002	M05	WetBulbTemp.	°C		
0800101200002	M06	Temperature	°C		
0800101200002	M07	Temperature	F		
0800101200002	M08	Rel.humidity	%		
0800101200002	M09	absHumidity	g/m3		
0800101200002	M10	WetBulbTemp.	°C		
0800101200002	M11	Temperature	°C		
0800101200002	M12	Temperature	F		
0800101200002	M13	Rel.humidity	%		
0800101200002	M14	absHumidity	g/m3		
0800101200002	M15	WetBulbTemp.	°C		

The Fields of the Channels List

Channel: measuring channel number of the connected sensor (starting with M...) or formula channel number (starting with F...)
Sensor Type: factory name of the sensor
Unit: physical unit of the sensor
Description: text box for user specifications
Formula: formula name of the formula channels

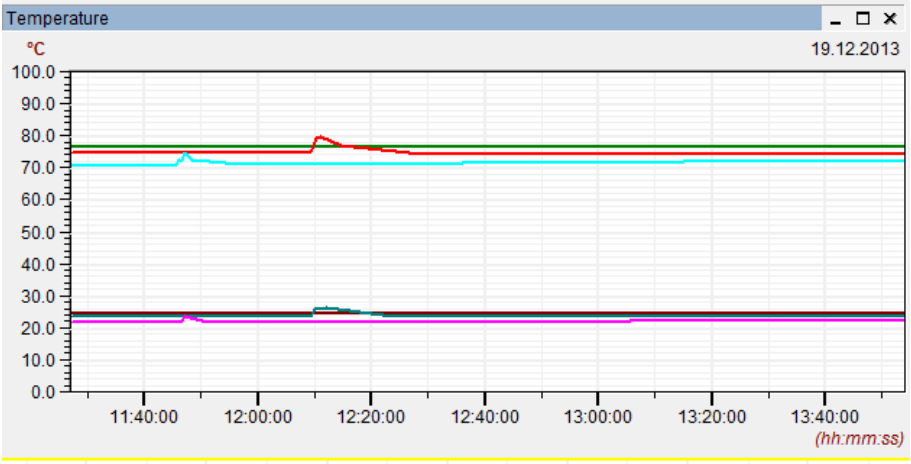
All highlighted fields in the channel table may be shown with the scroll bar. The field **description** contains pre-settings that can be modified in the channel list.

To modify the **Column Width**, click the column title border, hold the left mouse button pressed and move to the desired width.

The Y/t-Diagram

The Y/t-Diagram in Partial View

To create an X/Y-diagram, select in the main menu **Diagrams** the item **New Y/t-Diagram** and assign your desired channels. The Y/t-diagram appears in this **Partial View,** if you chart historic data - already recorded and stored data. By clicking and moving the border or corner of the diagram with the mouse, you may modify the diagram size..



To show a **Part** of your measurement and evaluation data in an enlarged form, move the mouse in the diagram, press and hold the left mouse until you have the desired diagram section, then release the mouse. The selected diagram part will be shown in its enlarged view.

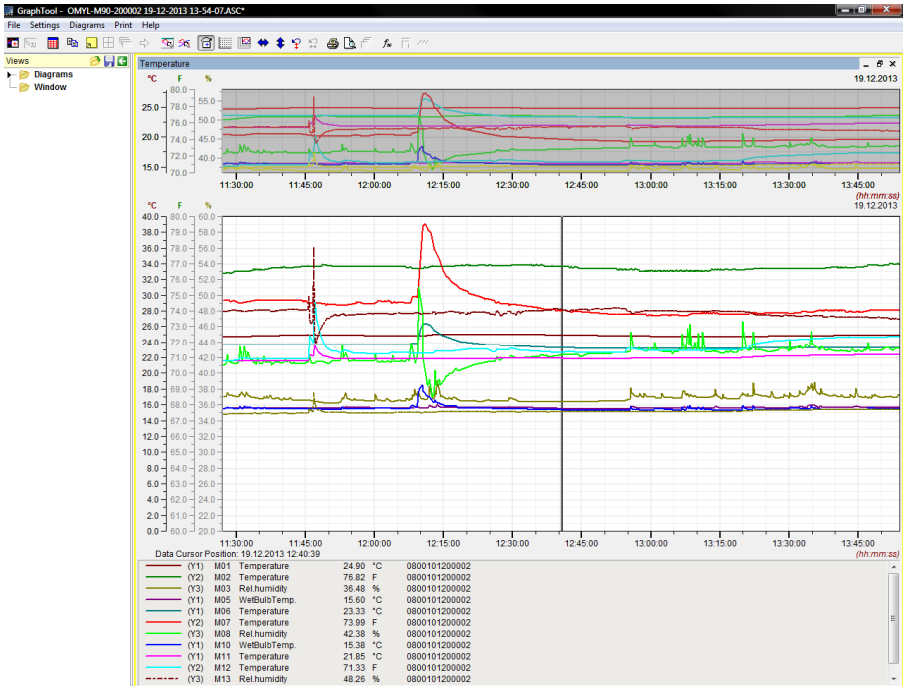
A double click at the **Axes Labels** opens a control box, where you can enter the exact limits of the diagram section in the Y- and X-direction. Using the arrow keys in the toolbar, you may scale back the Y- and the X-axes to its maximum values.

Other **Diagram Parameters** may be activated by double clicking the diagram title with the left mouse button.

 creates a new Y/t-Diagram via the tool bar

Further details are described with the **Entire Screen View** of the diagram in the next pages. For explanations of further functions of the diagrams during the **ONLINE-measurement**, please refer to the corresponding chapters in this manual.

The Y/t-Diagram in Entire Screen View



Press this button in the tool bar for an **Entire Screen View** or choose in main menu **Diagram** the command **Dia-Zoom to Maximum**. Pressing this button again will turn the diagram view back to its original size.

- The **Measurement Data Segment** in the middle shows your desired range of measurement data.
- The **Overview Diagram** shows the complete measurement data. The measurement data segment is high lightened in the overview diagram. This overview may be switched ON/OFF via local menu.
- The **Legend** below contains detail information about the measurement lines at the point of the data cursor position. You may switch the legend ON/OFF via local menu.
- To position the **data cursor** please click with the left mouse key your desired area in the measurement data segment. The data cursor may be switch ON/OFF via the local menu. If you choose the option **two data cursors**, you will obtain in the legend evaluation of both values.

- Clicking the right mouse button may activate the **Local Menu** that is related to this diagram.
- The **Date** may be switched ON/OFF via the command **Show Date** in main menu **Settings**.

The Measurement Data Segment in Y/t-Diagram

To select and to enlarge a **Measurement Data Segment**, move the mouse in the diagram, press and hold, then move the left mouse button until you have the desired diagram segment. The selected diagram segment will be shown in its enlarged view. At the same time the high-lightened diagram segment in the overview diagram changes accordingly.


Scales back the **X-Axis to maximum** (Auto scale X-Axis).


Scales back the **Y-Axis to maximum** (Auto scale Y-Axis).


Switch the **Grid** ON/OFF. See also **local menu**.


Auto-Zoom enables **zooming in fixed time steps**


Previous view Y-Axis


Previous view X-Axis

Via the local menu you may retrieve your **last applied settings** of the X- and Y-axes. If you modify the measurement data segment during the measurement process, the program sets for every new measurement data recording the actual segment again. If you want to evaluate, you must hold the diagram using the pause-key.

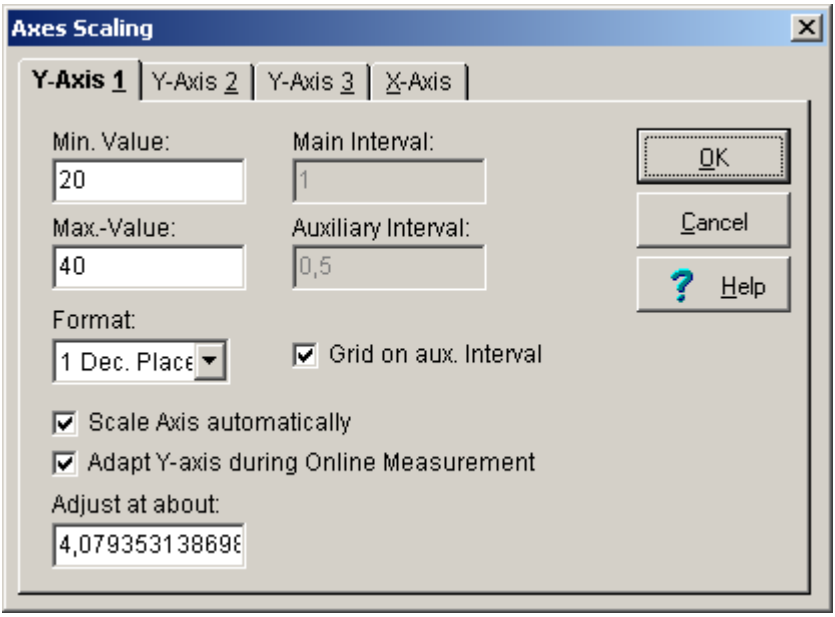
On the toolbar you may set with the button Auto-Zoom a **fixed Zoom-Mode for Y/t-Diagrams**. If this mode is turned on, the display of the local menu is turned off. A double click with the mouse activates an auto-zoom in the following steps

Year	1 h
Month	10 min
Week	1 min
Day	10 s
12 h	1 s
6 h	

By double click with the **left mouse button**, the zoom segment will be scaled down, by double click with the **right mouse button**; the zoom segment will be scaled up.

Scaling the Y-Axes in Y/t-Diagram

The measurement data segment of the Y-Axes may be set exactly as follows: A double click with the left mouse button at the Y- or X-axes labels of the diagram, opens the dialog box **Axes Scaling**.



Select a **Y-Axis** and enter the desired limits manually for your diagram.

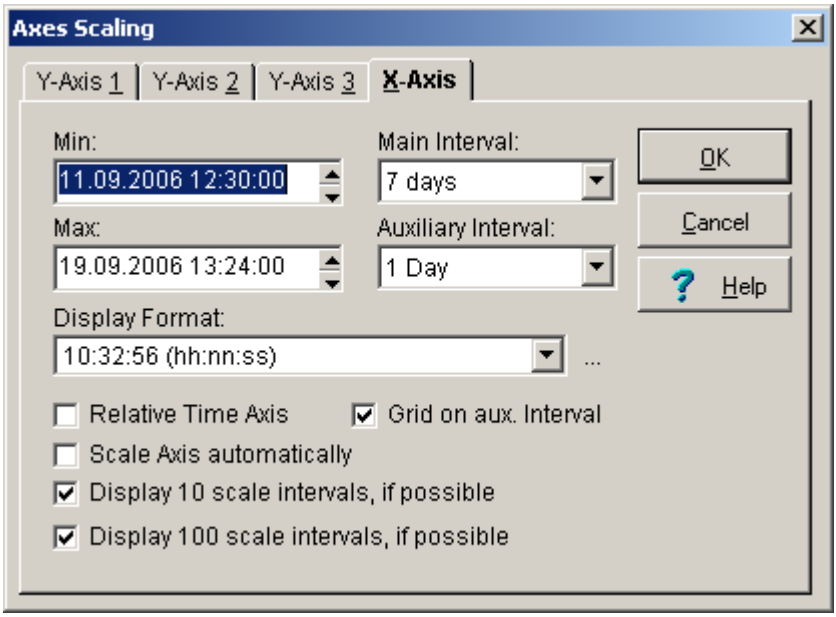
Enter the interval for the graduation of the Y-Axis. The **Main Interval** marks the distance from one value to the next on the Y-Axis. The **Auxiliary Interval** divides the main interval into its corresponding subdivisions. The main intervals are labeled the auxiliary intervals are not. Activate the **Grids on the auxiliary interval** to create additional grid lines.
For the **Format** of the values on the axes you may choose from 0 to 4 decimal places or you may choose the exponential form.

Activating the option **Axis automatic scaling**, the program calculates the main and auxiliary intervals automatically with respect to the Axis limit. The user cannot modify the values.

Activating the **Y-Axis Adjustment during online measurement**, will automatically adjust the axis of the current channel in the diagram (at a value set in **Adjust at about)**, if the measuring values go out of the previous range.

Scaling the X-Axis in Y/t-Diagram

The measurement data segment of the X-Axis may be set exactly as follows: A double click with the left mouse button at the Y- or X-axes labels of the diagram, opens the dialog box **Axes Scaling.**



Select the **X-Axis** and enter the desired limits for your diagram manually or scroll the corresponding arrow buttons. Choose the interval for the graduation of the X-Axis from the interval boxes. The **Main Interval** marks the distance of one value to the next on the X-axis.

The **Auxiliary Interval** divides the main interval into its corresponding subdivisions. The main intervals are labeled the auxiliary intervals are not. Activate the **Grids on the auxiliary interval** to create additional grid lines. If needed switch ON the additional options 10^{th}-graduations or 100^{th}-graduations. Main and auxiliary interval are adjustable to the following values:

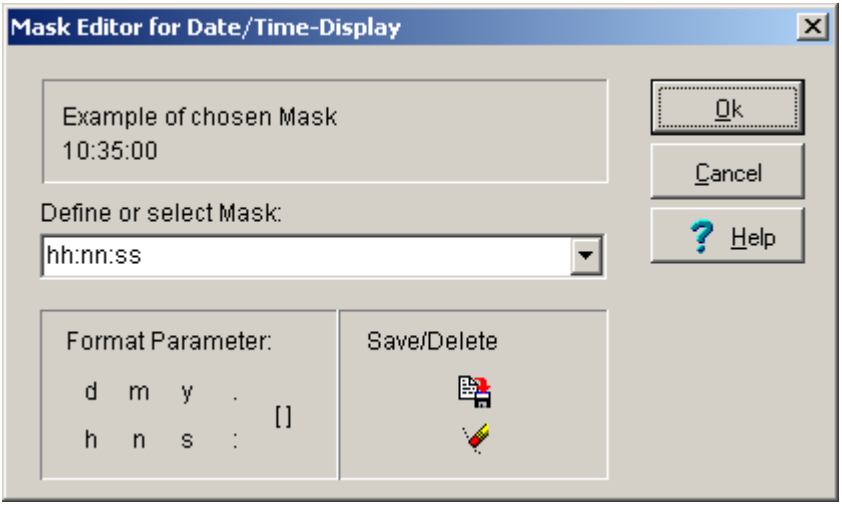
1 s	10 min
2 s	15 min
5 s	20 min
10 s	30 min
15 s	1 h
20 s	2 h
30 s	6 h
1 min	12 h
2 min	1 day
5 min	

If the **relative time axis** is active, the diagram sets the chosen values to 00:00:00 hours. The date is no longer active. For periods greater than 24 hours the program will show the number of days passed and time, written day/time, e.g. 1/00:00:00. In the **measurement data list** the relative data are also listed.

Activating the option **Axis automatic scaling**, the program calculates the main and auxiliary intervals automatically with respect to the Axis limit. The user cannot modify the values.

Select one of the predefined **Display Formats** for the axes marking. The button

opens the dialog-box for the individual time format on the X-Axis.



Select the desired **time format** for the X-Axis. The selected format will be shown as example and appears on the diagram. With the **Format Parameters** you may generate your individual format. Choose one from the parameter box by clicking with the left mouse button. The corresponding format appears on the display box.
These symbols are defined as follows:

d	Day
m	Month
y	Year
h	Hour
n	Minute
s	Second
.	(Separator)
:	(Separator)
[ ]	Blank

The format parameters have the following definition:

d	represent the day as a number without zero preceding (1-31).
dd	represent the day as a number with zero preceding (01-31)
ddd	represent the day as abbreviation (Sun-Sat).
dddd	represent the day with its whole name (Sunday-Saturday).
m	represent the month as a number without zero preceding (1-12). If m is directly followed by h or hh the minutes will be displayed instead of the month.
mm	represent the month as a number with zero preceding (01-12). If mm is directly followed by h or hh the minutes will be displayed instead of the month..
mmm	represent the month as abbreviation (Jan-Dec).
mmmm	represent the month with its whole name (January-December).
yy	represent the year in 2 digits (00-99).
yyyy	represent the year in 4 digits (0000-9999).
h	represent the hour without zero preceding (0-23).
hh	represent the hour with zero preceding (00-23).
n	represent the minute without zero preceding (0-59).
nn	represent the minute with zero preceding (00-59).
s	represent the seconds without zero preceding (0-59).
ss	represent the seconds with zero preceding (00-59).

All others are represented in its entry form.

Saves the displayed time format

Deletes the displayed time format

The Overview Diagram of Y/t-Diagram

The **overview diagram** is only valid for Y/t-diagrams. You may switch the Overview Diagram ON/OFF via **local menu**.

In the Overview Diagram is the entire measurement range displayed. The current selected data section is high lightened. Click with the left mouse button in the overview diagram and draw a boundary square to choose a different or another data section. The new selected section will be displayed in the measuring data segment.

The Legend of Y/t-Diagram

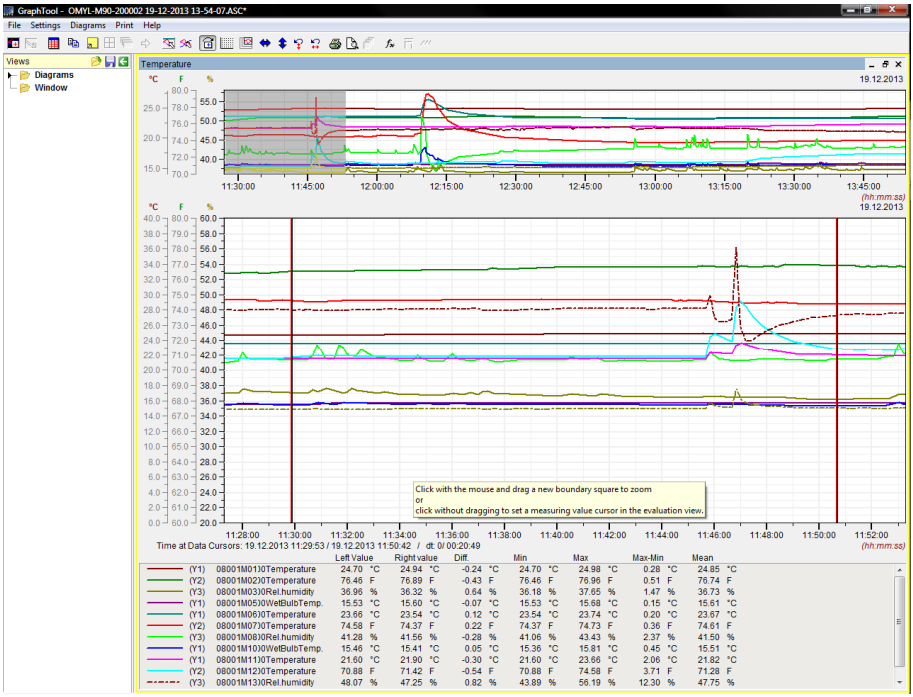
The **Legend** may be switched ON/OFF via **local menu**.

The legend contains detail information about the measurement lines such as line type, measuring device, channel, measurement values at the measuring cursor and description.

A double click with the left mouse button in the measuring data segment resets the **Data cursor**. The corresponding measurement values of each measurement lines appear in the legend as numbers with the assigned units. The measuring cursor is valid only for Y/t-diagram and disappears in the measuring data segment, if the legend is turned off.

The second data cursor of the Y/t-Diagram

The **second data cursor** may be switch ON/OFF via the **local menu**. Instead of one data cursor in the diagram, two data cursors will be displayed.



The legend covers first of all general information about the measurement lines like line type, measuring devices, measurement channels and sensor designations.

Then the measurement values on both data cursor are shown and also the difference between the two measurement values. Furthermore the program calculates the minimal-, maximal- and the mean value of the channels between the two cursors and the difference of the minimal- and maximal values and charts it on the diagram.

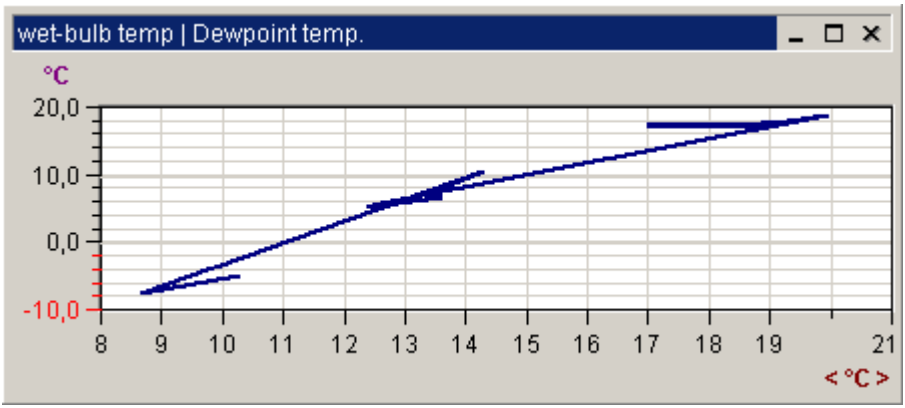
If you wish to **move one of the data cursor**, direct the mouse to the cursor and hold the left mouse button pressed while moving. The corresponding measurement values of each measurement lines will be displayed in the legend as numbers with the corresponding unit.

Note: The data cursor is available only for the Y/t-diagram and disappears from the measurement data segment, if you switch off the legend or the data cursor via the local menu.

The X/Y-Diagram

The X/Y-Diagram in Partial View

Um Select in the main menu **Diagrams** the item **New X/Y-Diagram** and assign your desired channels. The X/Y-Diagram appears in this **Partial View**, if you chart historic data - already recorded and stored data. By clicking and moving the border or corner of the diagram with the mouse, you may modify the diagram size.



To show a **Part** of your measurement and evaluation data in an enlarged form, move the mouse in the diagram, press and hold the left mouse until you have the desired diagram section, then release the mouse. The selected diagram part will be shown in its enlarged view.

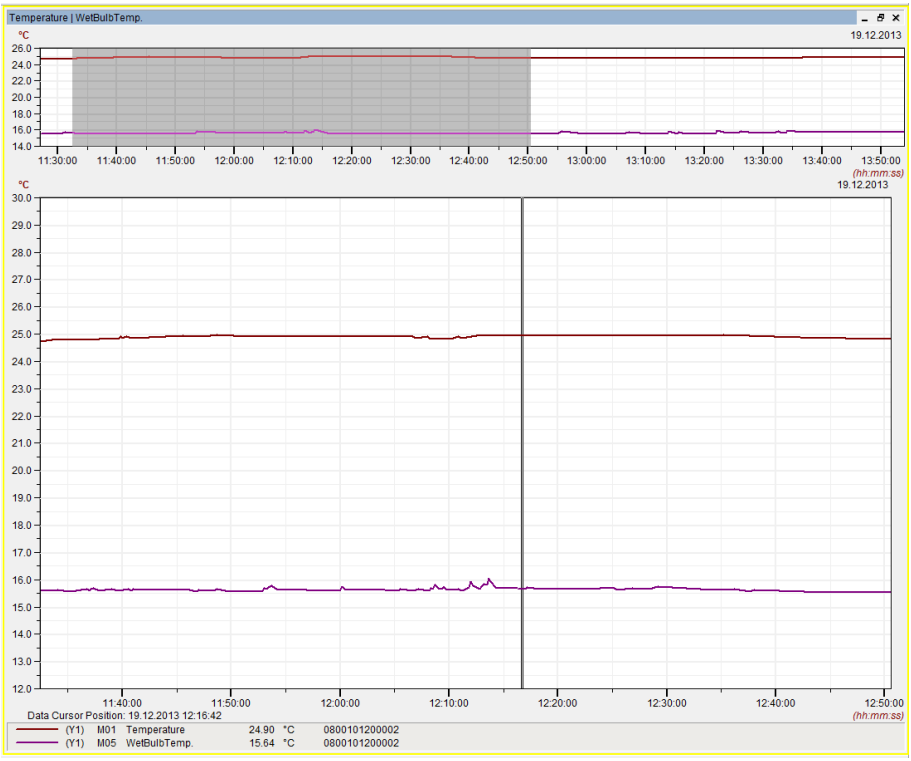
A double click at the **Axes Labels** opens a control box, where you can enter the exact limits of the diagram section in the Y- and X-direction. Using the arrow keys in the toolbar, you may scale back the Y- and the X-axes to its maximum values.

Other **Diagram Parameters** may be activated by double clicking the diagram title with the left mouse button.

 Creates a new X/Y-Diagram via the tool bar.

Further details are described together with the **Entire Screen View** of the diagram in the next pages. For explanations of further functions of the diagrams during the **ONLINE-measurement**, please refer to the corresponding chapters in this manual.

The X/Y-Diagram in Entire Screen View



 Press this button in the tool bar for an **Entire Screen View** or choose in menu **Diagram** the command **Dia-Zoom to Maximum**. Pressing this button again will turn the diagram view back to its original size.

- The **Measurement Data Segment** shows your desired range of measurement data.
- The **Legend** below contains detail information of the measurement lines. You may switch the legend ON/OFF via local menu and you may configure the diagram.
- clicking the right mouse button may activate the **Local Menu** related to this diagram.

The Measurement Data Segment in X/Y-Diagram

To select and to enlarge a **Measurement Data Segment**, move the mouse in the diagram, press and hold then move the left mouse button until you have the desired diagram segment. The selected diagram segment will be shown in its enlarged view.

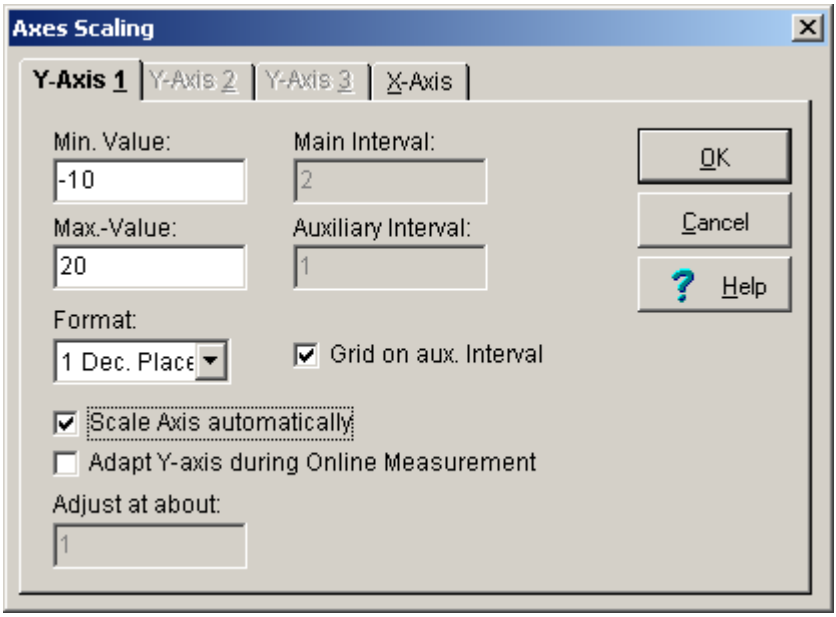
Scales back the **X-Axis to maximum** (Auto scale X-Axis).

Scales back the **Y-Axis to maximum** (Auto scale Y-Axis).

Switch the **Grid** ON/OFF. You may also switch the grid ON/OFF via **Local Menu**.

Scaling the Y-Axis in X/Y-Diagram

The measurement data segment of the Y-Axes may be set exactly as follows: A double click with the left mouse button at the Y- or X-axes labels of the diagram, opens the dialog box **Axes Scaling**.



Select a **Y-Axis** and enter the desired limits manually for your diagram.

Enter the interval for the graduation of the Y-Axis. The **Main Interval** marks the distance from one value to the next on the Y-Axis. The **Auxiliary Interval** divides the main interval into its corresponding subdivisions. The main intervals are labeled the auxiliary intervals are not. Activate the **Grids on the auxiliary interval** to create additional grid lines.

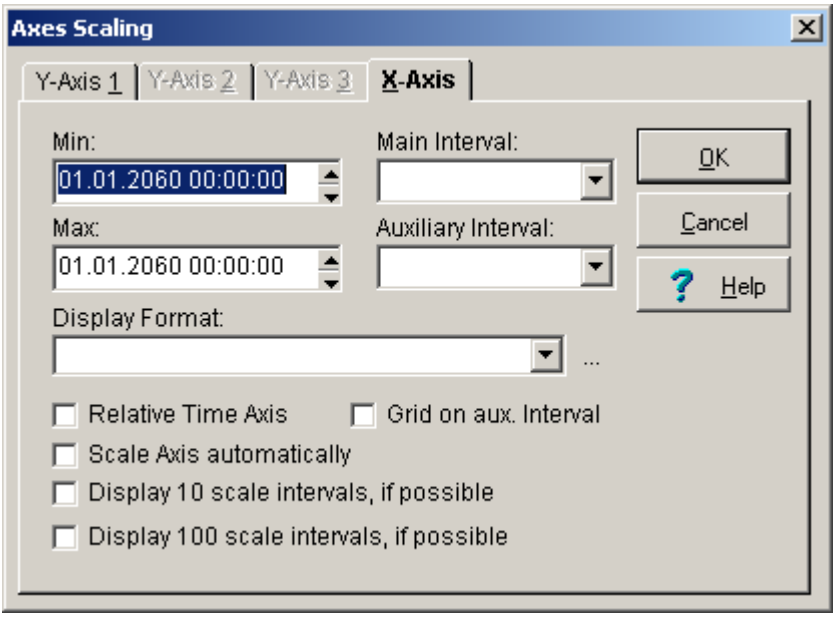
For the **Format** of the values on the axes you may choose from 0 to 4 decimal places or you may choose the exponential form.

Activating the option **Axis automatic scaling**, the program calculates the main and auxiliary intervals automatically with respect to the Axis limit. The user cannot modify the values.

Activating the **Adapt Y-Axis during online measurement**, will automatically adjust the axis of the current channel in the diagram (at a value set in **Adjust at about)**, if the measuring values go out of the previous range.

Scaling the X-Axis in X/Y-Diagram

The measurement data segment of the X-Axis may be set exactly as follows: A double click with the left mouse button at the Y- or X-axes labels of the diagram, opens the dialog box **Axes Scaling**.



Select the **X-Axis** and enter the desired limits manually for your diagram. After all modifications are done, press OK to confirm and to enter these changes.

The Legend of X/Y-Diagram

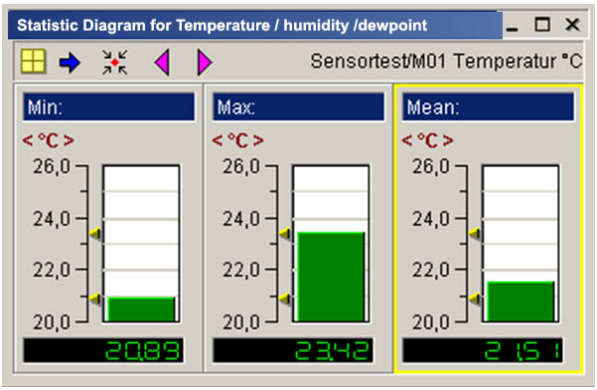
The **legend** may be switched ON/OFF via **local menu** and may also be configured. The Legend contains detail information about the measurement lines such as line type, measuring device, channel and description.

Note: Through a double click at the column in the display, the column will automatically be scaled to ±10% of the actual measuring value. Activate the option adapt Y-axis during ONLINE-measurement in the menu item Axes Scaling to adjust the axes automatically to the new measurement values.

The Statistic Diagram

Diagram Functions

The **Statistic Diagram** contains the minimum, maximum and mean value of a measurement line in a Y/t-diagram. **The diagram can only be created from an active Y/t diagram. To do so, click an existing Y/t diagram activate the „local menu" with the right mouse button** and create your desired statistic diagram.



Press this button in the tool bar for an **Entire Screen View** or choose in menu "Diagram" the command "Dia-Zoom to Maximum". Pressing this button again will turn the diagram view back to its original size.

The buttons in the toolbar within the diagram are:

Positions your statistic display optimal within the display area.

Changes from one statistic display to the next display.

Fits your diagram area optimal to the statistic diagram to be displayed.

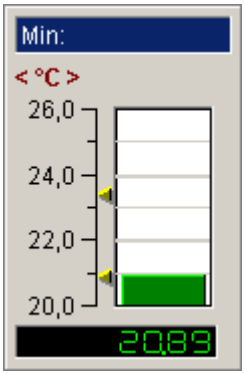
Previous measurement channel of the Y/t-diagram

Next measurement channel of the Y/t-diagram

To change the **Settings of the Statistic Diagram** just double click the diagram title with the left mouse button. The dialog box with diagram options appears. Here you may change your diagram parameter settings and your measurement channel definition. This function is available via button in the tool bar in the main menu and in the local menu.

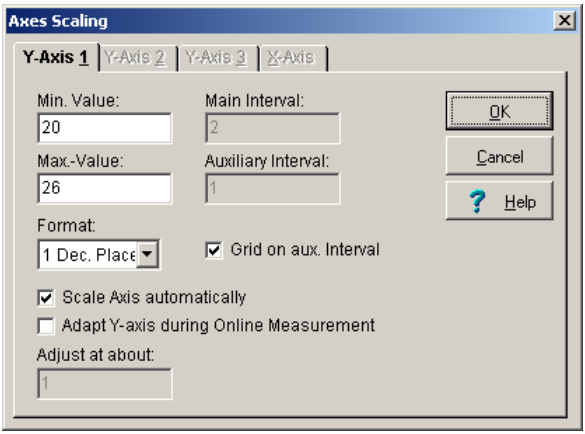
The Single Column Display of the Statistic Diagram

In the **single column display** the arrows left of column indicate the highest and the lowest measuring value. The current measuring value is digitally shown. The two arrows to the right of the column correspond to the upper and lower limits programmed in the sensor.



If the measurement value exceeds the upper **limit** the column color turns to red, if the value is below the lower limit, the column turns to blue. If no exceeding of limits, the columns remain green.

To set the display range of the statistic scale, double click with the left mouse button on the axes labels. This opens the dialog box **Axes Scaling**. Enter here your desired diagram limits manually.



Enter the interval for the graduation of the Y-Axis. The **Main Interval** marks the distance from one value to the next on the Y-Axis. The **Auxiliary Interval** divides the main interval into its corresponding subdivisions. The main intervals are labeled the auxiliary intervals are not. Activate the **Grids on the auxiliary interval** to create additional grid lines.

For the **Format** of the values on the axes you may choose from 0 to 4 decimal places or you may choose the exponential form.

Activating the option **Axis automatic scaling**, the program calculates the main and auxiliary intervals automatically with respect to the Axis limit. The user cannot modify the values.

Activating the **Y-Axis Adjustment during online measurement**, will automatically adjust the axis of the current channel in the diagram (at a value set in **Adjust at about)**, if the measuring values go out of the previous range.

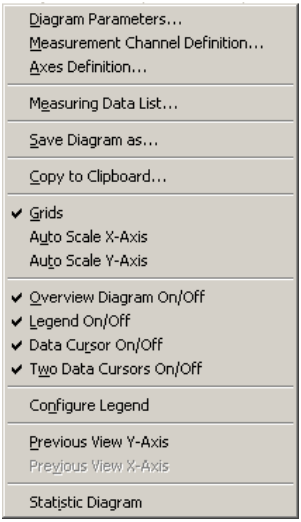
Note: Through a double click at the column in the diagram the column will automatically be scaled to ±10% of the actual measuring value.

The local Menu (Context menu of diagrams)

For every diagram is a **Local Menu** available. The diagram functions may be executed comfortably. Just activate with the **right mouse** button.

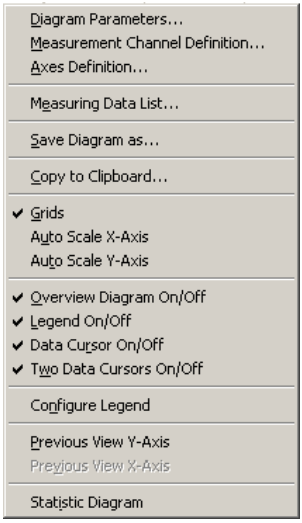
For a **Y/t-Diagram**, the following functions are available in the local menu:

- Diagram Parameter
- Measurement Channel Definition
- Axes Definition
- Measuring Data List
- Save Diagram
- Copy current diagram to the clipboard)
- Grids ON/OFF
- Auto scaling X-Axis
- Auto scaling Y-Axis
- Overview Diagram ON/OFF
- Legend ON/OFF
- Data Cursor ON/OFF
- Two Data Cursor ON/OFF
- Configure Legend
- Previous view Y-Axis
- Previous view X-Axis
- Statistic Diagram



For an **X/Y-Diagram**, only the following high-lightened functions are available:

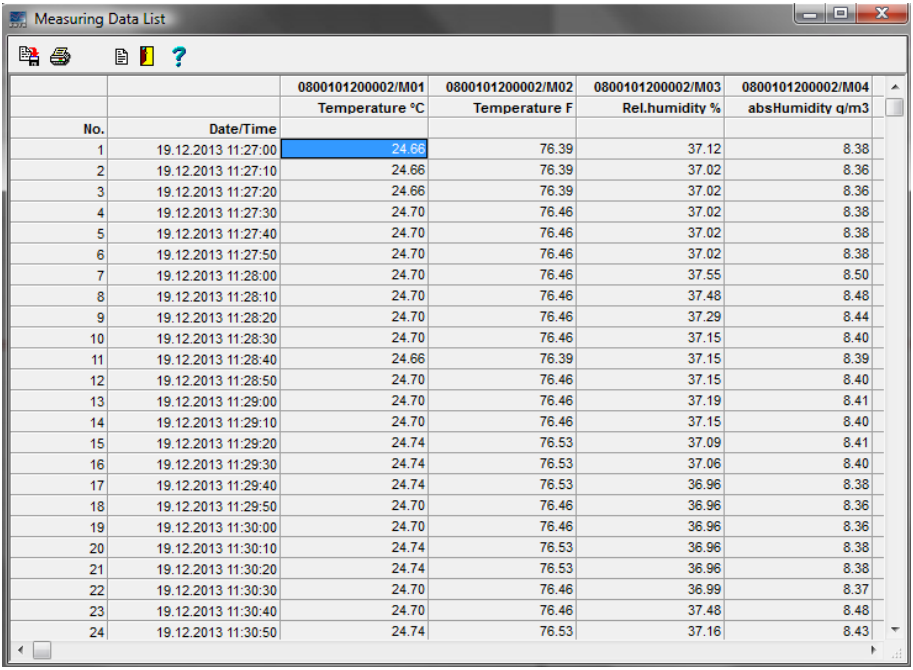
- Diagram Parameter
- Measurement Channel Definition
- Axes Definition
- Measuring Data List
- Save Diagram
- Copy current diagram to the clipboard
- Grids ON/OFF
- Auto scale X-Axis
- Auto scale Y-Axis
- Legend ON/OFF
- Configure Legend



The Measuring Data Lists

The Global Measuring Data List

The program shows in the measuring data list all measuring data in a single list. Select in the main menu **Diagrams** the menu item **global measurement value list**, to write down all up to this point recorded measuring data in a single list. The measurement values are arranged according to **absolute time relation** (date and time).



		0800101200002/M01	0800101200002/M02	0800101200002/M03	0800101200002/M04
		Temperature °C	Temperature F	Rel.humidity %	absHumidity g/m3
No.	Date/Time				
1	19.12.2013 11:27:00	24.66	76.39	37.12	8.38
2	19.12.2013 11:27:10	24.66	76.39	37.02	8.36
3	19.12.2013 11:27:20	24.66	76.39	37.02	8.36
4	19.12.2013 11:27:30	24.70	76.46	37.02	8.38
5	19.12.2013 11:27:40	24.70	76.46	37.02	8.38
6	19.12.2013 11:27:50	24.70	76.46	37.02	8.38
7	19.12.2013 11:28:00	24.70	76.46	37.55	8.50
8	19.12.2013 11:28:10	24.70	76.46	37.48	8.48
9	19.12.2013 11:28:20	24.70	76.46	37.29	8.44
10	19.12.2013 11:28:30	24.70	76.46	37.15	8.40
11	19.12.2013 11:28:40	24.66	76.39	37.15	8.39
12	19.12.2013 11:28:50	24.70	76.46	37.15	8.40
13	19.12.2013 11:29:00	24.70	76.46	37.19	8.41
14	19.12.2013 11:29:10	24.70	76.46	37.15	8.40
15	19.12.2013 11:29:20	24.74	76.53	37.09	8.41
16	19.12.2013 11:29:30	24.74	76.53	37.06	8.40
17	19.12.2013 11:29:40	24.74	76.53	36.96	8.38
18	19.12.2013 11:29:50	24.70	76.46	36.96	8.36
19	19.12.2013 11:30:00	24.70	76.46	36.96	8.36
20	19.12.2013 11:30:10	24.74	76.53	36.96	8.38
21	19.12.2013 11:30:20	24.74	76.53	36.96	8.38
22	19.12.2013 11:30:30	24.70	76.46	36.99	8.37
23	19.12.2013 11:30:40	24.70	76.46	37.48	8.48
24	19.12.2013 11:30:50	24.74	76.53	37.16	8.43

 With this button in the tool bar you may likewise activate the **global measurement value list**.

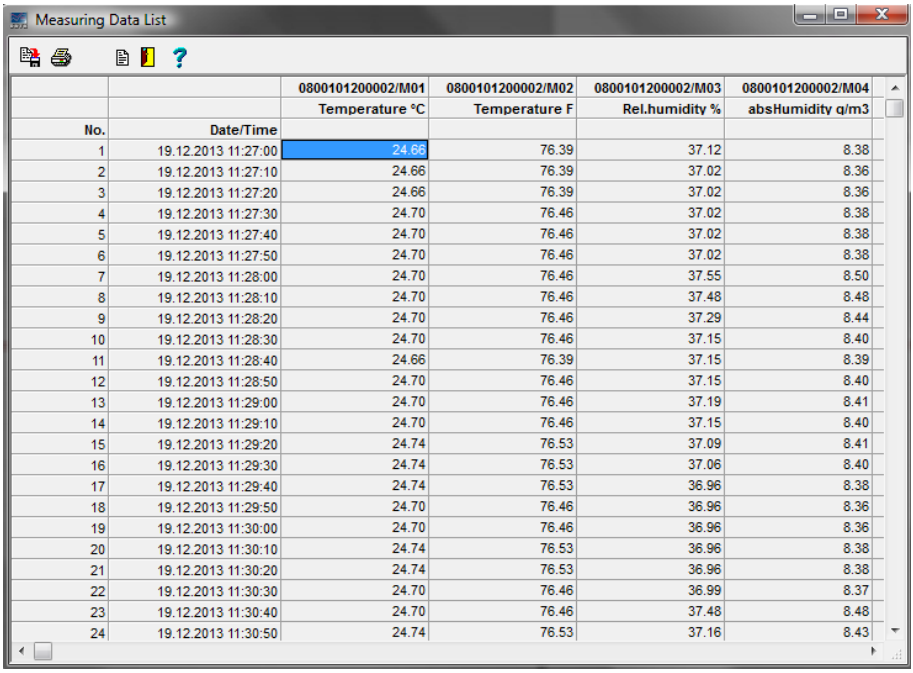
The Local Measuring Data List with Absolute Time Relation

In the local measuring data list, the program shows the measuring data of the actual chosen diagram. Set as standard is the local measuring data list with absolute time relation.

If you activate the measuring data list via the local menus of the diagram (with exception of the statistic diagram), you obtain the **local measuring data list with absolute time relation**. Each of this contains only the measuring values of all channels of the actual diagram with date and time of the measurement.

The Local Measuring Data List with Relative Time Relation

From the Y/t-Diagram you may additionally create a measuring data list with **relative measuring Date/Time**. To do so activate the option relative time axis in the X-axis scale. This list always starts at 00:00 hours and has no date display. This option allows you to display measuring series simultaneously if only the measuring progression is relevant and not the measuring time.



		0800101200002/M01	0800101200002/M02	0800101200002/M03	0800101200002/M04
		Temperature °C	Temperature F	Rel.humidity %	absHumidity g/m3
No.	Date/Time				
1	19.12.2013 11:27:00	24.66	76.39	37.12	8.38
2	19.12.2013 11:27:10	24.66	76.39	37.02	8.36
3	19.12.2013 11:27:20	24.66	76.39	37.02	8.36
4	19.12.2013 11:27:30	24.70	76.46	37.02	8.38
5	19.12.2013 11:27:40	24.70	76.46	37.02	8.38
6	19.12.2013 11:27:50	24.70	76.46	37.02	8.38
7	19.12.2013 11:28:00	24.70	76.46	37.55	8.50
8	19.12.2013 11:28:10	24.70	76.46	37.48	8.48
9	19.12.2013 11:28:20	24.70	76.46	37.29	8.44
10	19.12.2013 11:28:30	24.70	76.46	37.15	8.40
11	19.12.2013 11:28:40	24.66	76.39	37.15	8.39
12	19.12.2013 11:28:50	24.70	76.46	37.15	8.40
13	19.12.2013 11:29:00	24.70	76.46	37.19	8.41
14	19.12.2013 11:29:10	24.70	76.46	37.15	8.40
15	19.12.2013 11:29:20	24.74	76.53	37.09	8.41
16	19.12.2013 11:29:30	24.74	76.53	37.06	8.40
17	19.12.2013 11:29:40	24.74	76.53	36.96	8.38
18	19.12.2013 11:29:50	24.70	76.46	36.96	8.36
19	19.12.2013 11:30:00	24.70	76.46	36.96	8.36
20	19.12.2013 11:30:10	24.74	76.53	36.96	8.38
21	19.12.2013 11:30:20	24.74	76.53	36.96	8.38
22	19.12.2013 11:30:30	24.70	76.46	36.99	8.37
23	19.12.2013 11:30:40	24.70	76.46	37.48	8.48
24	19.12.2013 11:30:50	24.74	76.53	37.16	8.43

Note: This option is valid only for Y/t-Diagrams and not for other diagram types!

Functions of the Measuring Data List

The Buttons in the tool bar of the measuring data list are:


Exports data from the measuring data list in EXCEL- or ASCII-Format

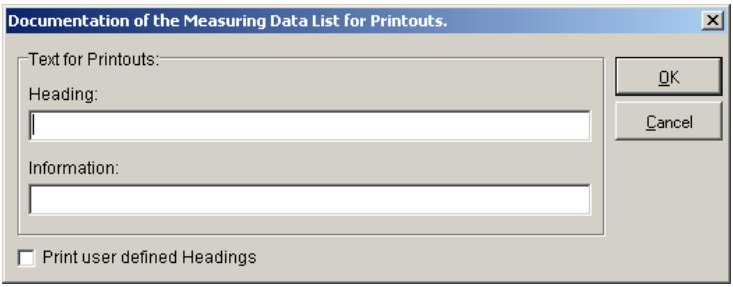

Prints table


Enters text for output


Exits measuring data list

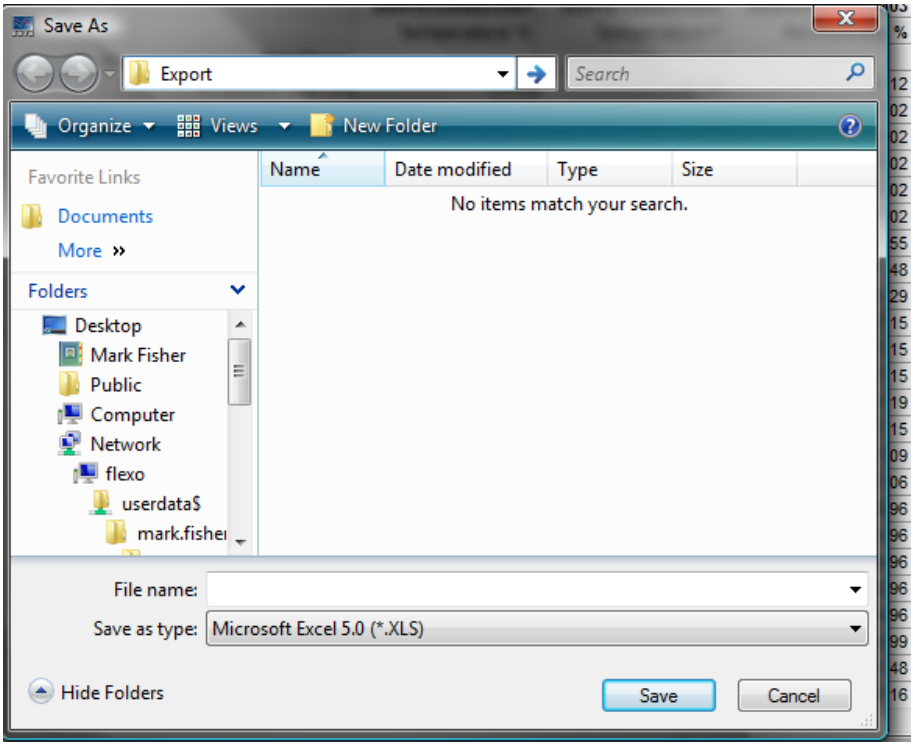
Data Entry for the Documentation of the Measuring Data List

To enter **data for the documentation of the output of the measuring data list,** press the data entry button. A dialog box appears where you may enter the heading or title of the list and other additional information. If the option user-defined heading is active, this information will then be printed out.



Exporting Data from the Measuring Data List

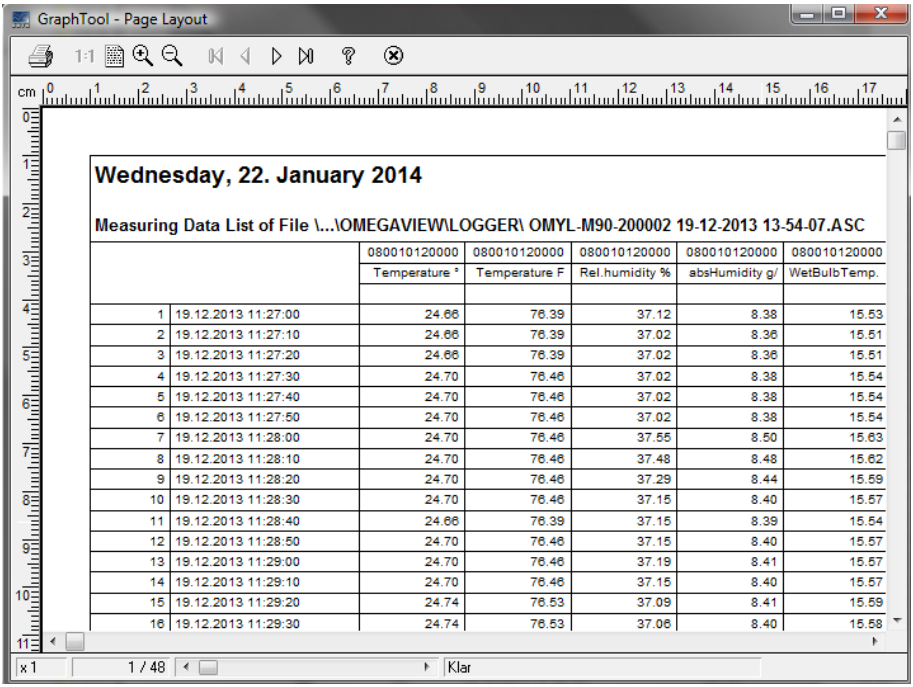
To **export data from the measuring data list**, press the export button and select your desired export format. Enter in the text box the directory and the file name. At present export formats available are EXCEL- and ASCII-Format.


Save As
Export
Search
Organize
Views
New Folder
Favorite Links
Documents
More »
Folders
Desktop
Mark Fisher
Public
Computer
Network
flexo
userdata$
mark.fisher
Name
Date modified
Type
Size
No items match your search.
File name:
Save as type:
Microsoft Excel 5.0 (*.XLS)
Hide Folders
Save
Cancel

Printing Measuring Data List

Press the button **Print Table** to print the displayed measuring data list as a table. This hint box appears.

Finally an evaluation view opens where you may print your table.

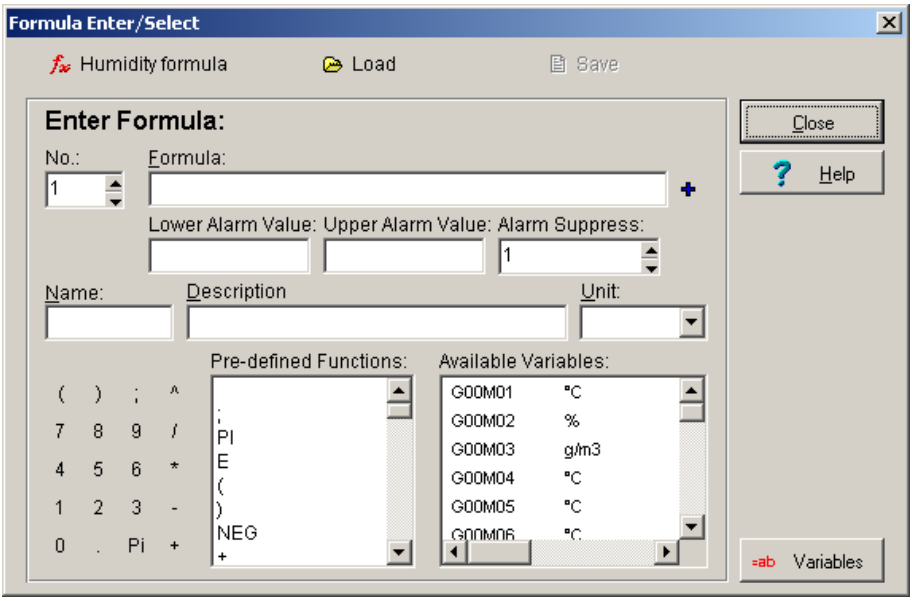


		080010120000	080010120000	080010120000	080010120000	080010120000
		Temperature °	Temperature F	Rel.humidity %	absHumidity g/	WetBulbTemp.
1	19.12.2013 11:27:00	24.66	76.39	37.12	8.38	15.53
2	19.12.2013 11:27:10	24.66	76.39	37.02	8.36	15.51
3	19.12.2013 11:27:20	24.66	76.39	37.02	8.36	15.51
4	19.12.2013 11:27:30	24.70	76.46	37.02	8.38	15.54
5	19.12.2013 11:27:40	24.70	76.46	37.02	8.38	15.54
6	19.12.2013 11:27:50	24.70	76.46	37.02	8.38	15.54
7	19.12.2013 11:28:00	24.70	76.46	37.55	8.50	15.63
8	19.12.2013 11:28:10	24.70	76.46	37.48	8.48	15.62
9	19.12.2013 11:28:20	24.70	76.46	37.29	8.44	15.59
10	19.12.2013 11:28:30	24.70	76.46	37.15	8.40	15.57
11	19.12.2013 11:28:40	24.66	76.39	37.15	8.39	15.54
12	19.12.2013 11:28:50	24.70	76.46	37.15	8.40	15.57
13	19.12.2013 11:29:00	24.70	76.46	37.19	8.41	15.57
14	19.12.2013 11:29:10	24.70	76.46	37.15	8.40	15.57
15	19.12.2013 11:29:20	24.74	76.53	37.09	8.41	15.59
16	19.12.2013 11:29:30	24.74	76.53	37.06	8.40	15.58

The Evaluation of the Measurement

Entering / Editing Formula (Standard)

Select in the main menu **Evaluate** the command **Formula Enter / Edit**, to create the formula you need for the evaluation of your measurement values. This dialog box appears.



You may select an existing formula from the **formula data bank** and enter this as formula channel in die channel table.

The Fields of the Formula Enter / Select Dialog Box

No.:	Formula channel number to be entered in the channel table analog to measurement channel number (starting with F..)
Formula:	Mathematical term consisting of variables (Measurement and Formula Channel) combined with mathematical functions
Name	Short description of the formula for the channel table and formula data bank
Description:	Text box for user specific comments about the formula
Unit:	Physical unit selectable from the units list
Predefined Functions:	Mathematical functions for combining variables

Available Variables Measurement or formula channels consisting of device number and measurement channel number or device number and formula channel number.

Opens an additional dialog box with **user specific defined variable** which you may additionally use as part of the formula for the formula definition.

Note: A formula channel for combining measurement data will be entered in the channel table of the measurement setup like a measurement channel. A **maximum of 99 formula channels** is possible. A formula can only be saved, if the mathematical term is valid and if the formula name is defined. The **Limits** of a formula are to be entered in the channel table.

Creating a New Formula

To create a new formula, proceed as follows:

1. First choose a **free formula channel number.**
2. Enter your **mathematical term in the formula box**. Signs from the keyboard block may be applied by clicking the left mouse button. Mathematical functions and variables such as measurement channel and other predefined formula channel may also be applied in your mathematical term by double clicking the left mouse button.
3. Always add at the end of your mathematical term a **semicolon „;"**. Only then is your formula complete.
4. Assign your formula a **name**, which will be used as a short description for the channel table and for the formula data bank.
5. Select a physical **unit** for your formula.
6. Describe briefly the **function of the formula** in the respective text box.

Note: If you want to repeat the calculation with different parameters just change the desired formula channel. Calculations from combination of formula channels will be considered and automatically be computed.

List of Implemented Mathematical Functions

+ - * / ( ) < > =	basic mathematical operations
DIV, MOD	integral division and module (the remainder from division)
GGT, KGV	largest common divisor and smallest common multiple.
^	raise to a higher mathematical power
SQR, SQRT	square and square root
EXP	exponential function
LN, LG, LD	natural logarithm, base 10 logarithm and base 2 logarithm
PI	pi
E	exponential function (inverse logarithm
NEG	negation
SIN, COS, TAN, COT, ARCSIN, ARCCOS, ARCTAN, ARCCOT, SINH, COSH, TANH, COTH, ARCSINH, ARCCOSH, ARCTANH, ARCCOTH	trigonometric functions angle functions
ABS	absolute value
REZ	reciprocal
FAK	faculty
INT	integer (whole number form floating point number)
DEG	conversion from radial to degrees
RAD	conversion from degrees to radian
RND	rounding
SGN	determines sign (-X = 1, 0 = 0, +X = 1)

Special Function

The following are **special functions**, where you can get a direct access to the channel and to the contained data. The variable name must have a prefix **„I"** (for **I**ndex) to enable the program to determine the correct value.

Example:	normal variable name:	**G00M01**
	special function variable name:	**IG00M01**
I	Index Designation	
INDEX	value of the channel at index x	*Example*: (IG00M01 INDEX 10)
MEAN	mean value of the channel data	*Example*: MEAN(IG00M01)
MIN	smallest value of the channel data	*Example*: MIN(IG00M01)
MAX	largest value of the channel data	*Example*: MAX(IG00M01)
LAST	last recorded value of the channel data	*Example*: LAST(IG00M01)
FIRST	first recorded value of the channel data	*Example*: FIRST(IG00M01)
SUM	summation of all values of the channel data	*Example*: SUM(IG00M01)

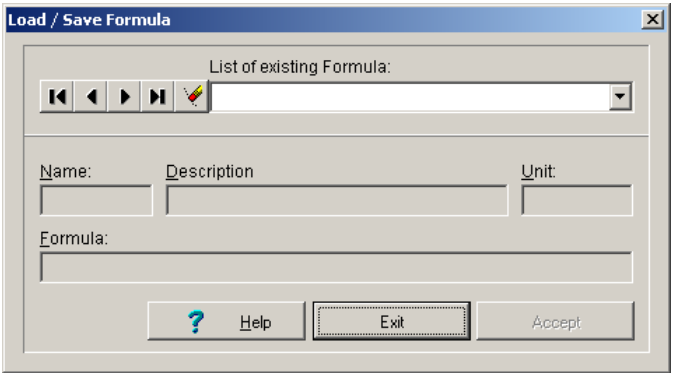
Applying / Saving a New Formula

Adds your formula as formula channel to your **channel table** in the measurement setup.

Saves the valid and complete formula in the **formula data bank**. If your desired formula name already exists in the data bank, you can either overwrite the existing formula name or change your formula name.

Loading an Existing Formula

In the dialog box of **Formula Enter/Edit** click the **load** button to open this dialog box where existing formulas are listed. Select your desired formula from the list of existing formula and enter this in the Formula Enter / Select box. Formula characteristics will be displayed in the respective fields. Use buttons to go from one data record to the other or to delete unnecessary formula.



Go to first data record

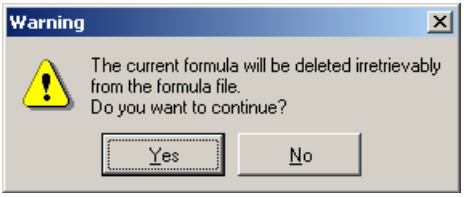
Go to previous data record

Go to next data record

Go to end of data record

Delete current formula

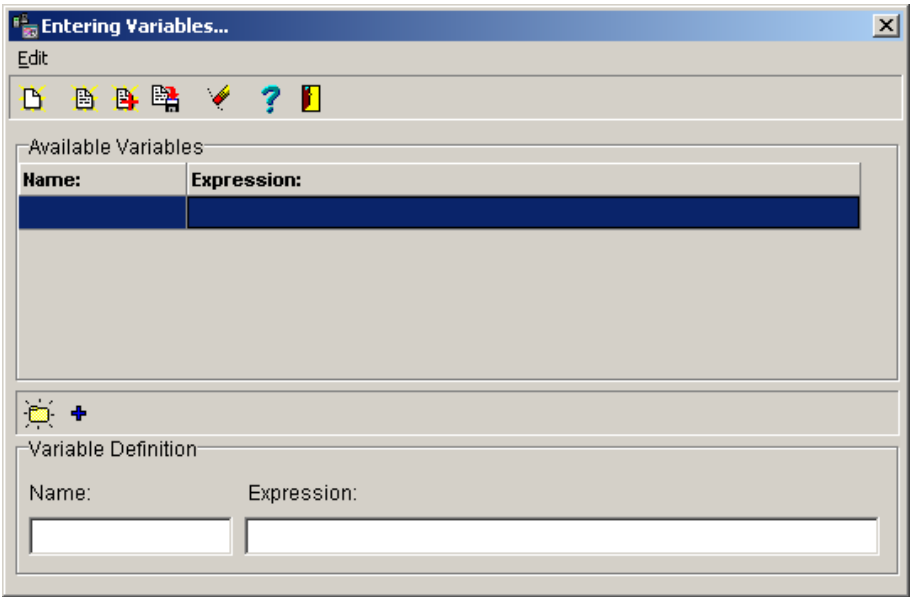
This security check will be displayed before a formula from the formula data bank will be finally **deleted**.



Using Variables

Enter / Edit Variables

Use variables to save often recurring formula part. Hereby you may reduce effort in entering your formula. Select in the main menu **Evaluate** the menu item **entering/editing variables** to define the variables for the processing of your measurement data. This dialog box will appear.

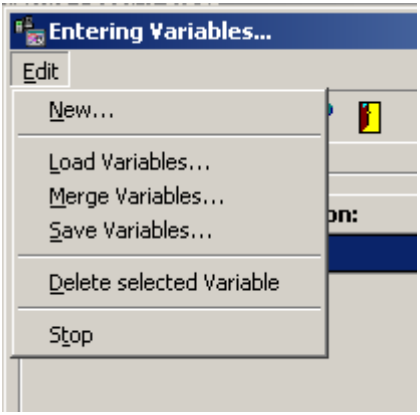


You may save a variable in a **variable data bank**, or you may save in a file and use in any formula.

Editing Variables

Select in the submenu of the **variables** the item **Edit** the shown menu will appear with the following functions:

- Add new variable
- Load variable
- Merge variable
- Save variable
- Delete marked variable
- Stop (close table)



The functions are also via the **tool bar of the variable table** comfortable to handle. The buttons in particular means:

 Delete all variables

 Load variables

 Merge variables to existing configuration

 Save variables in files

 Delete marked variables

 Close variable table

 Activate help to variables

 Enter new variables

 Entered variables verify and insert

The Fields of the Variable Entry / Selection

At the upper part of the dialog box the **available** v**ariables** are listed. At the lower part you may enter and insert in the **definition of variables** new variable and modify existing variables. The entry fields means:

Name:	Short description of the variable for the variable data bank (file).
Expression:	Calculation equation for variables to be use in the measuring and formula channels.

Formulate a New Variable

To formulate a new variable, please proceed as follows:

1. Enter your Calculation equation in the field terms.
2. End-up your calculation equation with a Semicolon „;". Only then is your equation complete.
3. Give your variable a Name as short description for the variable data bank.

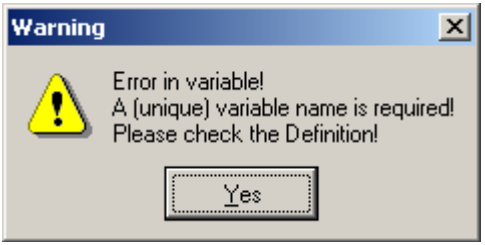
Note: If you want to repeat the calculation with a different parameter, you only have to modify the desired term. Calculations from interdependent formulas will automatically be recalculated.

Accept / Save a New Variable

 Verifies the entered variable and insert a valid and complete variable in the **variable data bank**.

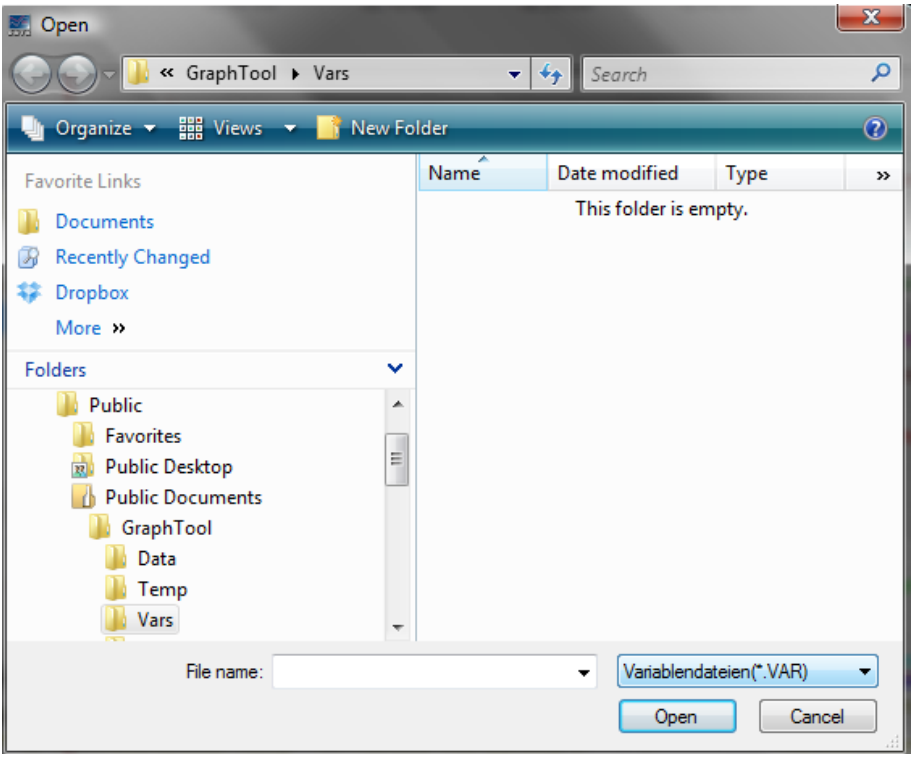
 Saves the existing variables in a file.

If the definition of the variable is incorrect this message will appear.



Load Variable / Merge Variable / Save

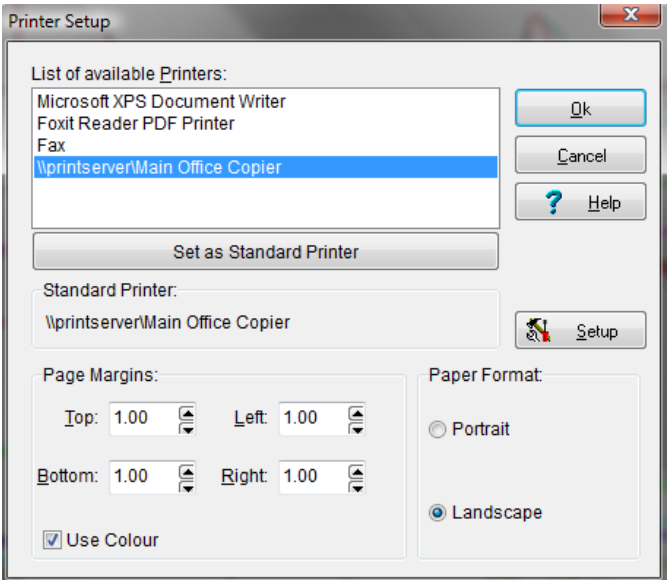
Select in the submenu **variables** the item **load/ merge/ save variable** or the corresponding button in the tool bar. This dialog box appears. Files for variable have the ending *.var.

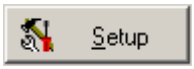


Printing-out of Measurements

Configure Printer

Select in main menu **File** the command **Printer Setup**, to configure your printer. The dialog box on the left will appear.

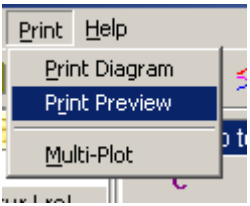




Opens the printer setup according to Windows-Standard. You may set here further options of your printer.

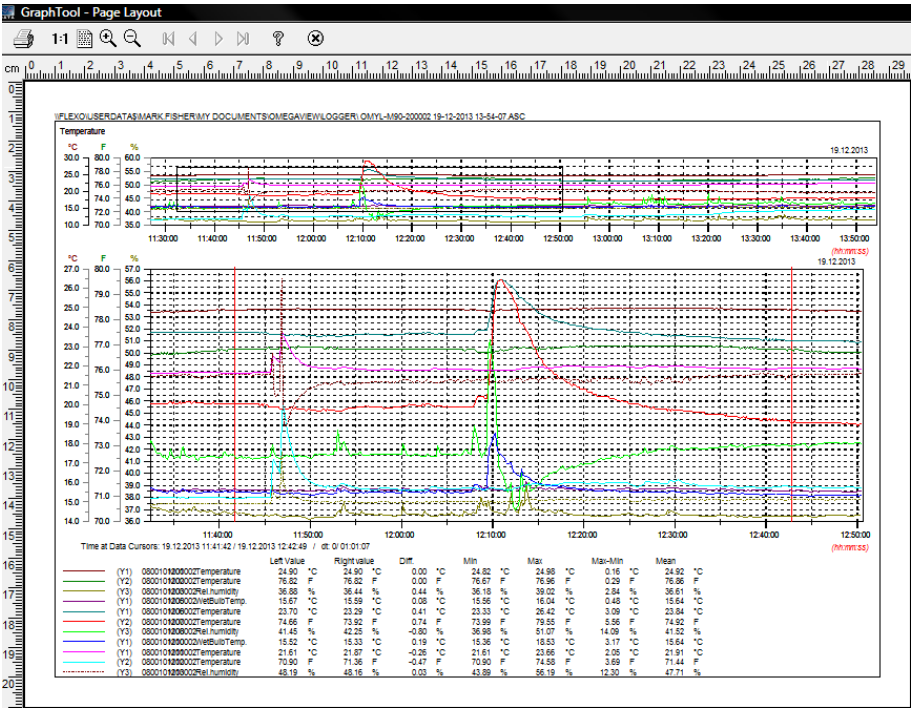
Diagram Preview

Select in the main menu **Print** the command **Page Preview**. The page preview shows the page, which will be printed later. This view mode is only available for the Y/t-diagram and for the X/Y-diagram. The digital and column monitoring diagrams and function indicating panel do not have page previews.



Hint: By activating the page preview via Menu Print, the printer selection box will first appear..

go to diagram preview.




Go to printer setup


Shows view in scale 1:1


Shows all pages at the same time


Enlarges view


Reduces view size


Apply grid


Go to page one of view


Go to previous page


Go to next page


Go to last page of view


Displays help for mouse button and key functions

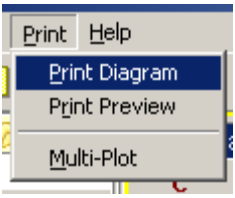

Exits page preview

Press the button  , to activate the help functions.

Print Diagrams

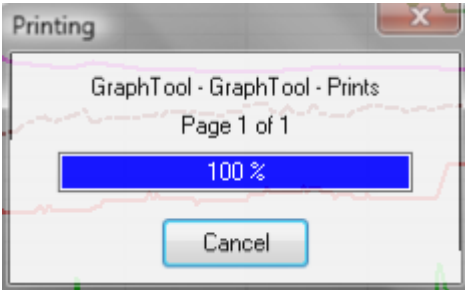
The function **Print Diagram** is available only for active Y/t-diagrams or X/Y-diagrams. Digital and column monitoring diagrams cannot be printed.

Select in main menu **Print** the command **Print Diagram**, to directly print your diagrams. The page preview will not be shown anymore.



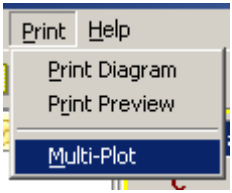
 Print your Y/t- or X/Y-diagrams directly without printer setup and page preview.

During printing, the box on the left appears. You may cancel printing here.

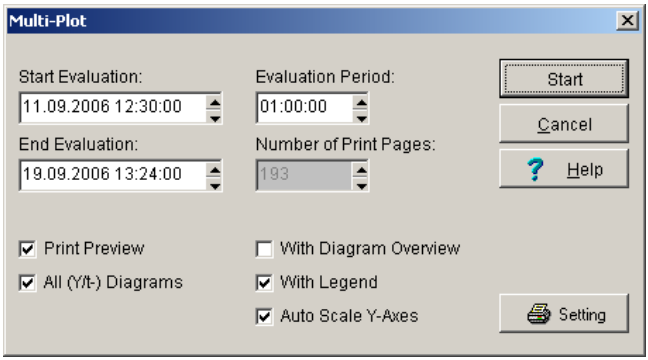


Multi-Plot (Standard)

The function **Multi-Plot** is available only for active Y/t-diagram. It allows to print your measurement data in several consecutive pages. Select in main menu **Print** the command **Multi-Plot**, to print your measurement data in several consecutive pages.



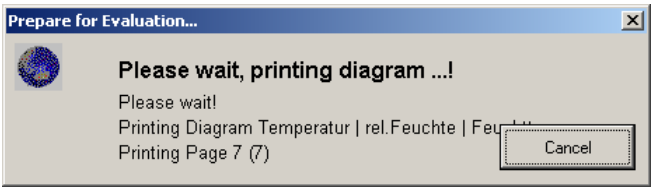
 Activates the function Multi-Plot from the toolbar.



Enter the **Start and End Time** of the measuring data to be printed. With the **Evaluation Time** you may determine the interval between two consecutive measurement values. The number of pages to be printed will be automatically calculated by the program. Set your printer if necessary and select from the following options for your printouts

- Page preview
- Print all Y/t-diagrams
- Print with overview diagram
- Print with legend
- Automatic scaling of the Y-axes

After confirming your entries this notice appears during printing. You may cancel here your printing job.


Prepare for Evaluation...
Please wait, printing diagram ...!
Please wait!
Printing Diagram Temperatur | rel.Feuchte |
Printing Page 7 (7)
Cancel

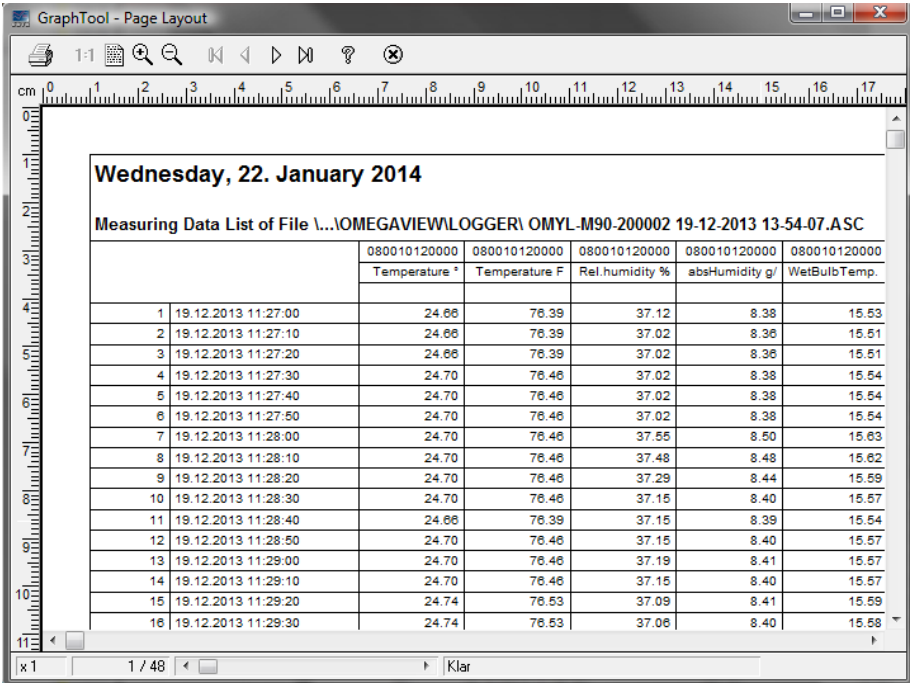
Print Measuring Data List

Select in the main menu **Diagrams** the menu item **Global Measuring Value List** and press here the button **Print Table.** The preview of the measuring data list appears on the screen. You may print from here your measuring data list.

To print a **local measuring data list**, proceed as follows:

- Create a **Diagram** and assign your desired measurement channels.
- Activate the **Local Menu** by clicking the right mouse button.
- Select here the command **Measuring Data List**
- Press the button **Print Table**

The program goes to the page preview. From here you may print your measuring data list.



		080010120000	080010120000	080010120000	080010120000	080010120000
		Temperature °	Temperature F	Rel.humidity %	absHumidity g/	WetBulbTemp.
1	19.12.2013 11:27:00	24.66	76.39	37.12	8.38	15.53
2	19.12.2013 11:27:10	24.66	76.39	37.02	8.36	15.51
3	19.12.2013 11:27:20	24.66	76.39	37.02	8.36	15.51
4	19.12.2013 11:27:30	24.70	76.46	37.02	8.38	15.54
5	19.12.2013 11:27:40	24.70	76.46	37.02	8.38	15.54
6	19.12.2013 11:27:50	24.70	76.46	37.02	8.38	15.54
7	19.12.2013 11:28:00	24.70	76.46	37.55	8.50	15.63
8	19.12.2013 11:28:10	24.70	76.46	37.48	8.48	15.62
9	19.12.2013 11:28:20	24.70	76.46	37.29	8.44	15.59
10	19.12.2013 11:28:30	24.70	76.46	37.15	8.40	15.57
11	19.12.2013 11:28:40	24.66	76.39	37.15	8.39	15.54
12	19.12.2013 11:28:50	24.70	76.46	37.15	8.40	15.57
13	19.12.2013 11:29:00	24.70	76.46	37.19	8.41	15.57
14	19.12.2013 11:29:10	24.70	76.46	37.15	8.40	15.57
15	19.12.2013 11:29:20	24.74	76.53	37.09	8.41	15.59
16	19.12.2013 11:29:30	24.74	76.53	37.06	8.40	15.58

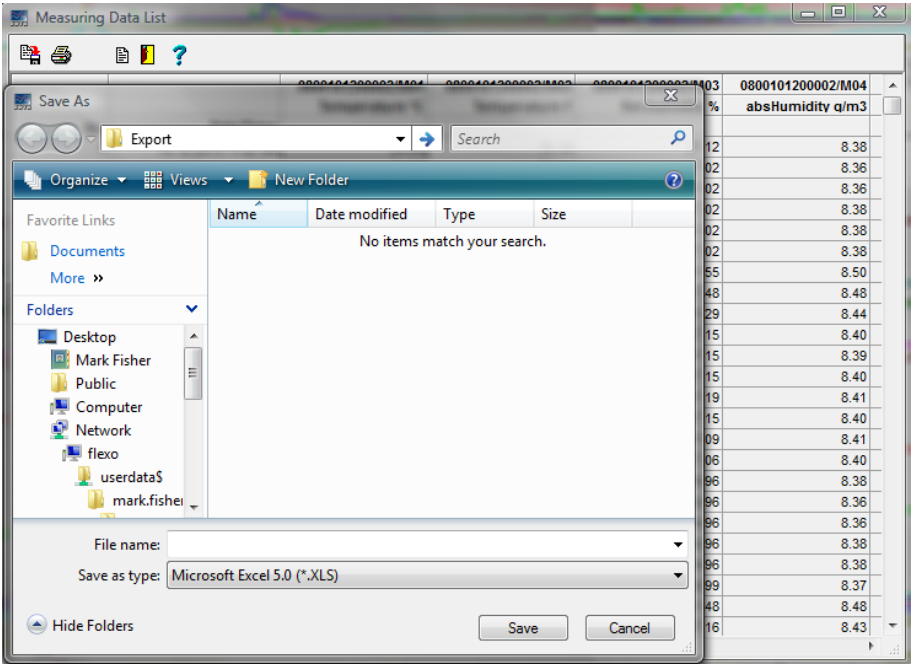
Hint: You may print your data from a Y/t-diagram independent of the exact measuring time. In case the option **relative time axis** is activated, the diagram shows the chosen values starting from 00:00:00 hours. The date is no longer active.

Exporting Measuring Data

Select in the main menu **Diagrams** the menu item **Global Measuring Value List** and press the button **Export Data** .A dialog box with formula selection will be open. From here you may then export your measuring data list

To export a **local measuring data list** in EXCEL- or ASCII-Format proceed as follows:

- Create a **Diagram** and assign your desired measurement channels
- Activate the **Local Menu** by clicking the right mouse button
- Select here the command **Measuring Data List**
- Press the button **Export Data**
- Choose a **File Name**
- Choose a **Data Format**



The Files

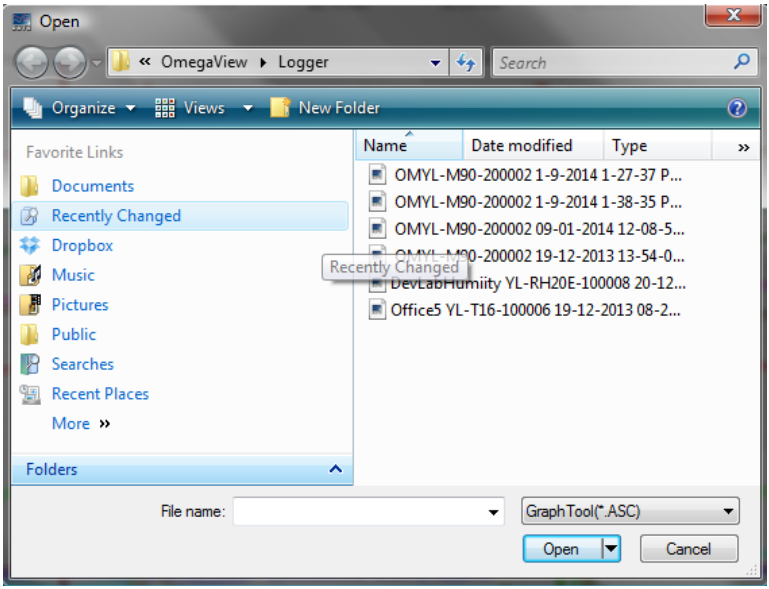
File Types

All document processing is carried out in main menu **File**. The Software OmegaView software can open ASCII formatted files, which are created by OMYL series data loggers.
The file extension must be .ASC.

The layout for the ASCII files is determined through specifications from Omega. As separation character, the semicolon or the tabulator character are allowed, and will be recognized automatically by the software:

Open Measurement Files

Select in the main menu **File** the command **Open**, to open your measurement data and its corresponding configurations.



Enter in the text box, drive, path and name of the file to be opened.

Enter the drive, the path and the name within the dialog. The chosen file will then be imported and the data will be represented in a Y/t-Graph.

Join Several Measurement Data Files

With this function you may join together several measurement data files to one file. For example, files from two consecutive days with the same measurement setup. You may however also join any other files together; configuration data from the files to be added will not be applied to the current file.

How to join files:
1. First open the file, where the new data are to be added.
2. Select in the main menu **File** the command **Join File**.
3. Mark out and open the file(s) to be added and confirm to join files.

Same devices will be recognized by the entry “Logger serial number” within the ASCII file. Files from the same logger will be joined; the new data will be sorted in to the existing channel. Duplicated data, recognized by the same timestamp, will be ignored.

For new channels, a new Y/t-Graph will be created and displayed.

Note: Transferring of data may take some time depending on data size. Please wait .... .

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of theproduct, and
3. Repair instructions and/or specific problems relative to the product.

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- Cartridge & Strip Heaters
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- Flexible Heaters
- Laboratory Heaters

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- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments

M5382/0114