Software ComSoft 3.4

Instruction manual **en**

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Preparation

Defined use

The Comsoft 3 software is used to save, read and analyse separate measurement values and measurement series. The main task of this program is the graphic display of readings. Readings are taken using Testo´s measuring instruments and are transmitted via serial interface to your PC.
Data is read using Comsoft 3 software, which activates the interfaces and makes all functions available.

There are suitable instrument drivers available for installing each Testo instrument/system. They are especially adapted to the range of instrument hardware and their operation.

Measured readings are logged with date and time. Values are constantly updated during ONLINE measurements.

Preparation

Installation

Minimum system requirements

• PC with operating system

Microsoft® Windows® 98, Me, 2000 (Service Pack 4), XP (Service Pack 2) or Vista 32 Bit

Microsoft® Internet Explorer 5.01

Prozessor (min.): Intel® Pentium® III, 800MHz

RAM (min.): 64 MB for Windows® 98, Me, 128MB for Windows® 2000 and XP, 1 GB for Vista

CD-ROM drive for installation, mouse, USB 1.1 interface

Monitor resolution (min.): 800 x 600 Pixel, recommended 1024 x 768 Pixel

Hard drive (min.): 50MB free memory

Installation

! To install the USB driver, please read the separate documentation included with the USB driver CD.

Administrator rights are required in Windows® 2000, XP and Vista to install the program.

1. Place CD-ROM in drive

2. The installation menu will start up after a short time. If it fails to start, click twice on “Setup.EXE” on the CD-ROM.

3. You are asked to enter the licence number (see sticker on CD-ROM).
   Note: If the number input is not accepted it may be due to the following:
   - Is the shift button activated?
   - Is “Num” in the separate digit pad activated?
   - Was l entered instead of 1?
   - Was o entered instead of 0?

4. Once confirmed, the installation continues.

Installation

5. The rest of the procedure is then menu-driven. Please observe the notes and explanations beside the buttons.

Note: If “ protected” is activated, the “Range of functions” register is not visible to the user and will not be available later.

General information on using and installing software
The software surface (appearance, operation philosophy) is defined in accordance with the Microsoft® Office Standard. Symbols and menu items are selected analog to this standard. Therefore, if you are already working with Office programs (Word®, Excel®, PowerPoint® ...), you will very quickly become familiar with the surface.

1st session – Brief instructions

Mouse functions

Certain menu functions can be activated directly via the mouse, making the software easy to use.
Some menu functions need only to be clicked on once with the mouse while others need to be clicked twice.

The following options are available depending on where you are in the program:

Click left on menu item:	Opens sub-menu or carries out function
Click left on symbol button:	Carries out function
Click left on name in archive:	Selects
Click twice, left:	Selects and opens/activates
Click right:	Opens (if available) Context menu

Toolbars and palettes

File category

 Open file

 Save active document

 Page view

 Print view

 Set up new location

 Set up new folder

 Transmit to instrument

 Delete element

 Undo last action

 Copy in clipboard

 Insert contents in clipboard

 Set up formula

 Connect protocols

 Use help

 Use situation-related help function

Toolbars and palettes

Instrument category


Device control


Control measurement


Start online measurement


Stop online measurement


Read out memory

View category


View as diagram


View as table

View as digit box


View as histogram


View as form


View as analog instrument


View as parametric graph


Set layout


Search in archive

Toolbars and palettes

Left mouse button selects

Left mouse button shows status information

Left mouse enlarges

Left mouse button shows crosshair

Left mouse button marks area to be included in mean calculation

Left mouse button shows compensating curve

Left mouse shows difference

Select font

Change background colour in diagram. Also edits pattern/style

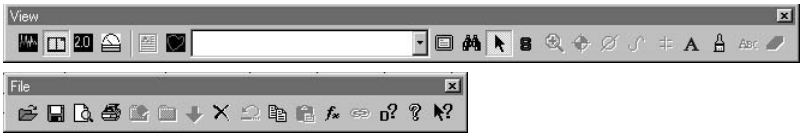
Insert text

Remove text from a view

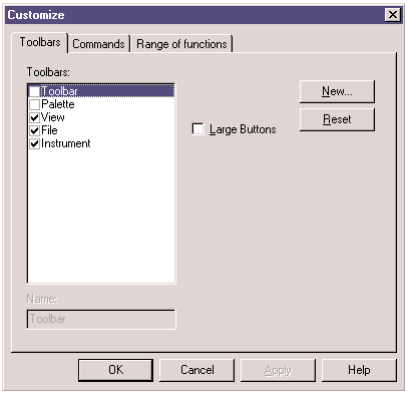
Full screen

Toolbars

You can activate commands, which are often used, directly by using the icons in the toolbars.



You can easily move the required toolbar to another position using the mouse. It will appear horizontal, vertical or as a separate window (palette) depending on the position.



You can determine the function of the toolbars in the “Tools/Customize…” menu.

You can put together new toolbars on the register available and define

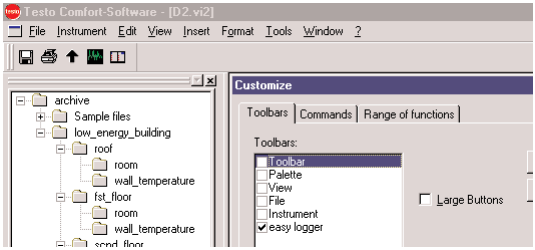
- whether the toolbar should be displayed or not
- whether large or small buttons are to be used
- which icons are to appear in the toolbar
- which special functions are to be in the menus

To change the toolbars, open the “Commands” register and move the corresponding icon to the required location in the toolbar. Click at the bottom of the symbol for more information. To delete icons, simply remove from the toolbar.

Separation marks can be placed between the icons. Simply move an icon to the side of the toolbar to remove or insert the marks.

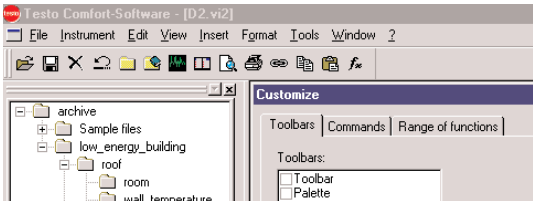
Toolbars, our recommendation

You can put together your own tools list as required. The following are some suggestions:



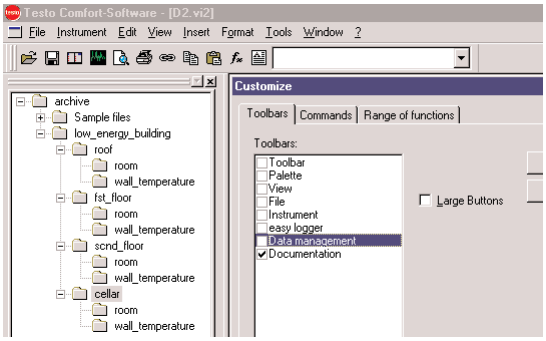
Easy logger operation

The functions suggested here are used regularly to program and read out data loggers and should, therefore, be placed in the toolbar for direct access.



Main emphasis: Data management

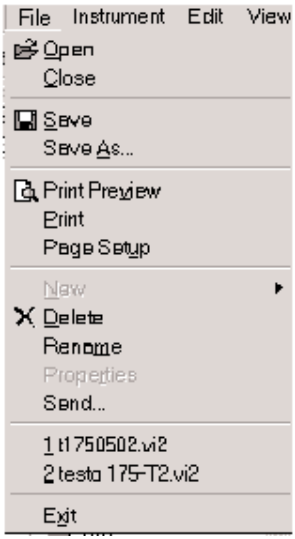
Regular reworking and updating of the archive tree is necessary in this case. The tools specified here are particularly suitable for this purpose.



Main emphasis on printed documentation

Read out instrument and print as table or diagram - the range of functions should be reduced accordingly if no longer in use.

Menu layout: Main menu



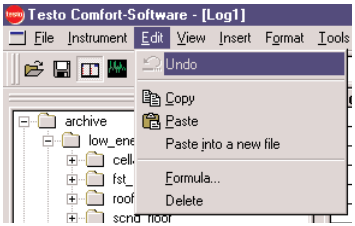
Going from left to right, the main menu contains the following:

File
All of the functions, which are needed to open, close, save, delete and print. New folders and locations are created. The names of files and folders can be changed and their properties can be displayed.
The files, which were last used, are available in a list, which can be opened.
The program can be exited in this menu.

Note
Send
Click on “Send” to send measurements results by email.

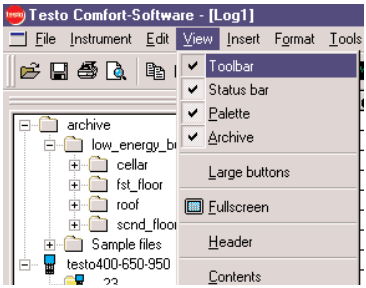
Instrument
Connection to the measuring instruments is controlled from this menu. New measuring instruments can be connected and configured.

Note
Autodetect
A connection to the connected measuring instrument is set up automatically.



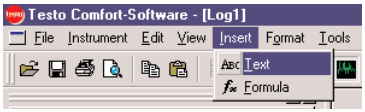
Edit
Measured data can be copied, inserted, pasted or deleted using these commands (also self-defined mathematical functions).
Commands can be undone.

Menu layout: Main menu



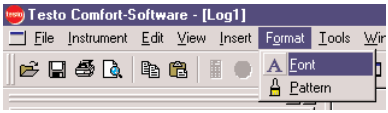
View

Included are functions required for graphical display or screen layout. Toolbars, status bars, archive or palettes can be made to appear or disappear, as required. You can choose which channels of the attached instrument are to be shown and a protocol header can be defined.



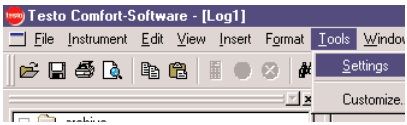
Insert

Text can be added to diagrams. The measured data can be further offset using a mathematical function.



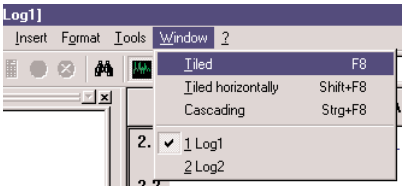
Format

The font can be set here. This font is then used for protocols and to label diagrams.
The appearance of the diagrams and tables can be improved optically using specific patterns/styles.



Tools

Settings:
Here you have the option of assigning units and axes.
Customize:
It is also possible to define the range of functions included in the toolbar.

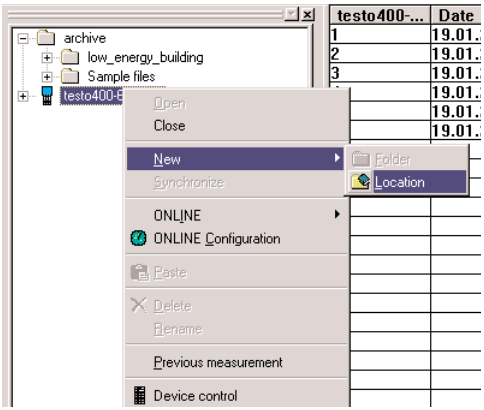


Window

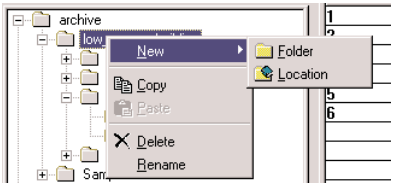
If you have several files at the same time in the RAM memory, you have several ways available to display them.

Menu layout: Context menus

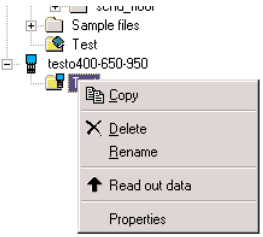
This is a special range of commands, selected especially for a certain area. These menus, which can be selected using the right mouse button, can be opened depending on where the mouse is placed.



Context: Instrument
New locations can be quickly set up in the instrument, the current instrument can be registered and deregistered or all of the settings in the instrument can also be undertaken via “Device control” in the PC.

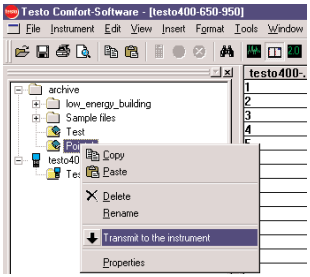


Context: Folders in archive
Click right mouse button on folder and then you can edit the tree structure:
Set up, delete, rename folder/locations etc.



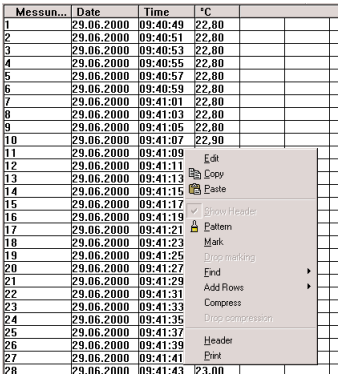
Context: Folders in instrument
The locations saved in the instrument can be edited.

Menu layout: Context menus



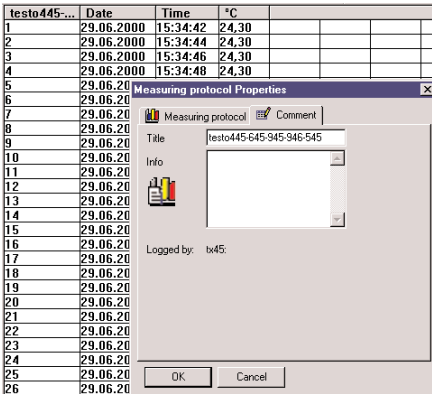
Context: Location
- Edit contents.
- Change/delete location name
- Edit information on location.

Additional parameters or useful information (if supplied by instrument), particularly on location, can be entered via “Properties”. These are also available on site, once they are transmitted to the instrument.



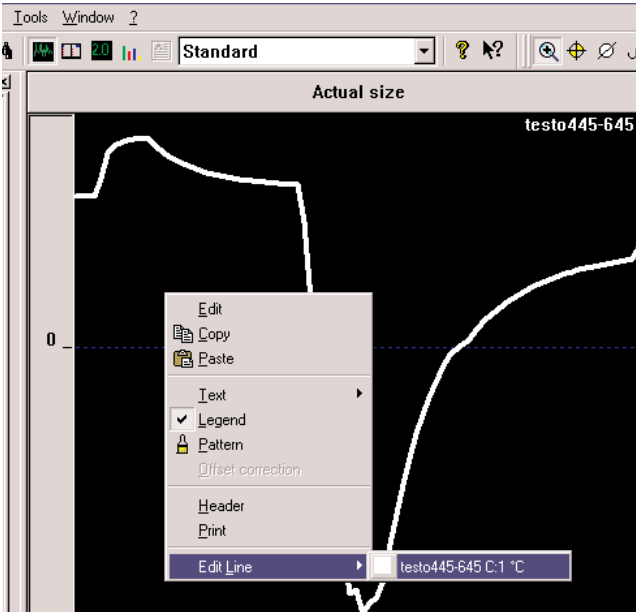
Context: Work area
In the work area context e.g. table, the data which is shown or is to be printed can be defined. Channels can be made to appear or disappear via Edit. Additional information for printing can be formulated via “Header”.

Menu layout: Context menus



Context: Name of table

The context for the header in the table enables access to the title and information box, which can be edited in location. “Measuring protocol” includes additional data on the protocol itself.

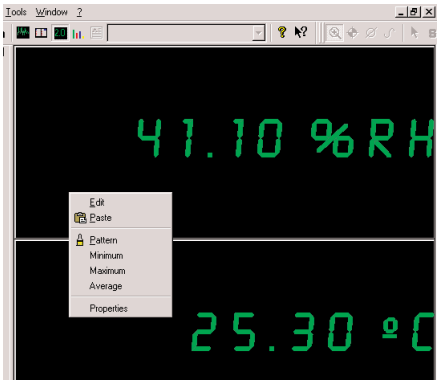


Context menu in diagrams and other presentation elements:

“Edit Line” leads to the settings menu for presenting the data and editing curves.

Note: This menu can be reached directly by clicking twice on the curve.

Menu layout: Context menus



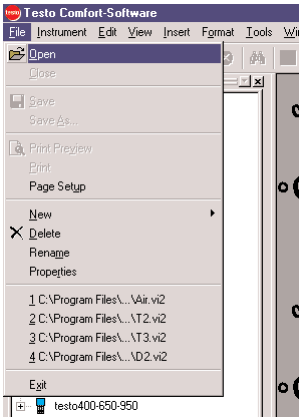
Short menu in digit box
Type of view, pattern/style and content can be selected.

Online help

Online help is available for many functions. This online help is activated by pressing F1 (function button on the keypad).

Example 1

Demo file without instrument

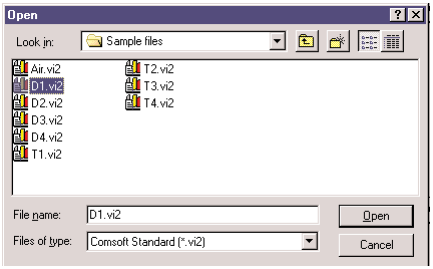


Measured data has to be opened first before it can be shown graphically.

The data is located in the memory of Testo instruments or in a directory on a PC data carrier for data, which has already been filed (in this case: demo files).

Once the “File” menu item has been selected, the “Open” menu element is selected.

The “File/Open” dialog mask then appears.



A drive or a folder can be selected in the top part of the dialog mask. A list with file names appears in the middle part. The type of files required is selected in “Files of type”.

The following file types are available:

- *.vi2 Standard files, created by Comsoft 3
- *.prn Files from the software versions 2.51 and older, saved as ASCII text file
- *.WKS Files from the software versions 2.51 and older, saved as WKS
- *.* All files.
- *.viw View files from earlier software versions are no longer available.

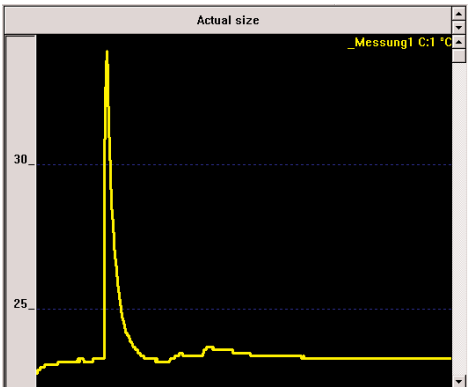
A file name is picked out and is opened by clicking on it twice or clicking on the “Open” button.

Example 1

Demo file without instrument

You can determine what form the measurement protocol is to appear in by clicking on one of the following: “Table”, “Digit box”, “Analog instrument”, “Diagram”, “Histogram” or “Parametric Graph”.

Diagram



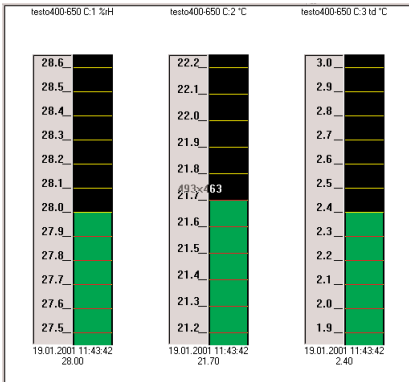
Table

Testo 17...	Date	Time	°C	%rH
1	26.05.2000	12:51:12	25,46	37,00
2	26.05.2000	12:51:42	25,54	37,00
3	26.05.2000	12:52:12	25,54	36,90
4	26.05.2000	12:52:42	25,54	37,00
5	26.05.2000	12:53:12	25,54	37,00
6	26.05.2000	12:53:42	25,54	37,00
7	26.05.2000	12:54:12	25,54	36,90
8	26.05.2000	12:54:42	25,54	37,00
9	26.05.2000	12:55:12	25,54	37,10
10	26.05.2000	12:55:42	25,54	36,90
11	26.05.2000	12:56:12	25,54	37,00
12	26.05.2000	12:56:42	25,54	37,00
13	26.05.2000	12:57:12	25,54	37,00
14	26.05.2000	12:57:42	25,54	37,00
15	26.05.2000	12:58:12	25,54	37,10
16	26.05.2000	12:58:42	25,54	37,10
17	26.05.2000	12:59:12	25,54	37,00
18	26.05.2000	12:59:42	25,54	37,00
19	26.05.2000	13:00:12	25,54	37,00
20	26.05.2000	13:00:42	25,54	37,10
21	26.05.2000	13:01:12	25,54	37,10
22	26.05.2000	13:01:42	25,54	37,10

Example 1

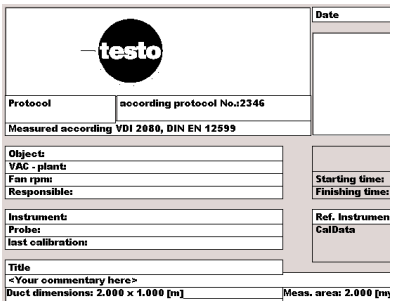
Demo file without instrument

Histogram



Digit box

Form



Example 1

Demo file without instrument

Load the “D1” file from the “Sample files” folder and then play around with the toolbar palette in diagram:

Zoom
Zooms sections

The limits for the area to be shown are set by drawing a rectangle in the diagram window (keep left mouse button pressed inside window). This function can also be carried out during an online measurement. The selected section always shows the current value.

The diagram is returned to its normal size by clicking on “Actual size”. All of the section zooms are then undone.

“Crosshair”
Select a measurement curve to demonstrate a crosshair, which follows the curve. The reading number, date, time and reading are also shown in a window.

“Mark section”
Selective statistics.
You can determine the section in diagrams, which is to be calculated or saved:

Click on the left of a curve to determine the section to be calculated, you can move the section limits using the left mouse button and the complete window using the right mouse button.

Example 1

Demo file without instrument

Notes:

- The section is a time section.
  If you have determined a section for a measurement protocol, all of the calculations apply to this section. Remove the section limits if you wish to have the whole data sequence calculated.
- Section limits and mean calculation.
  Select a measurement curve to determine the time range to which the following calculations and data saving, if required, are limited. Section limits, the minimum and maximum of the limited value curve and the arithmetic mean are all shown in the status bar.

“Compensating curve”
Compensating curves are a help to better assess large amounts of data, “runaways” are suppressed and the actual curve is imitated using a theoretical, mathematical function.

Select a measurement curve to show a compensating curve or to switch it off. The degree of the curve is determined at between 0 to 7 in the context menu for the curve (right mouse button). 0 degree corresponds to a pure mean calculation, 1 degree describes the linear trend, a higher degree helps curves with several minimum and maximum values.

By contrast, if “Mark measurement points” is selected, the measurement points along the curve are marked. It is only at these points that the value shown corresponds exactly to the measured value. The curve between the points comes about through interpolation. If there is a measurement, the measurement points are interpolated linearly - are connected by straight lines. The curve can be smoothed if the measurement is stopped.

Smoothing in this case means that the measurement points are connected by an interpolating curve. This curve goes through all of the measurement points. It is, therefore, not a compensating curve. Only the space between two points is filled by a curve, or a type of spline.

If you encounter problems when clicking on a section of the curve, you

have probably clicked on the section of the curve which is particularly steep. The capturing process functions better if you select a less steep section. If you are working with several, which overlap, it is better to work by zooming sections.

“Display status info”
Provides detailed error description of invalid readings.

“Edit pattern”
Is used in diagrams and parametric graphs to set background and grid line colour and to change the line type in the grid.

Used to add/delete **Text** to/from diagram.

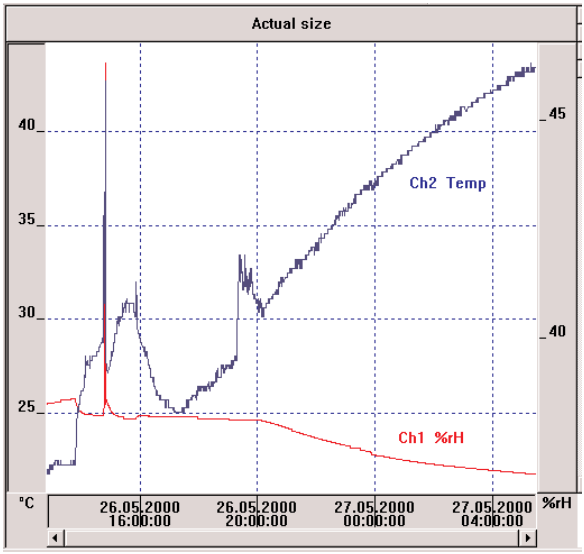
Move text:
Use the left mouse button (drag and drop).

Change font type and colour:
Click with the right mouse button on the text.

Use the **“Eraser”** mouse function from the palette to delete the activated diagram text. The activated text now has a frame around it.

Example 1

Demo file without instrument



Start by clicking on the respective curve twice and first adapt the line width and pattern, smooth the curve and mark the measurement points, if required.

Define the required limit values in “Data sequence” and define how they are to be displayed in “Limit value display”.

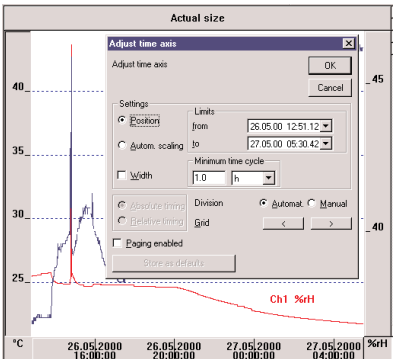
You can click away a curve or reactivate a curve by clicking twice in the diagram section.

Using the right mouse button in the diagram section, you will find modification possibilities for background and grid lines in Pattern.

Example 1

Demo file without instrument

Edit the time axis:

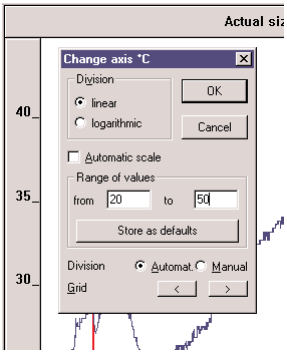


You can define the resolution, start and finish of the view window by clicking twice on the time axis.

- “Relative timing” sets the starting time at 00:00, the time then starts relative to this start mark.
- “Width” defines a fixed frame which can be moved over the time axis.
- “Position” defines a fixed section.

Note

Depending on the font set, there may be problems with the display . Select “Verdana, 8 pt.”, for example.



Optimise the value range/y axis

For an improved overview, it is better to scale the range of values for the respective curve. Enter the menu by clicking on the right of the y axis. The grid can be set via the arrow buttons or can be entered manually.

Example 1

Demo file wihout instrument

Comfort-Software V3:	Device	Page 1/1		Min:	Max:	Mean:
Conditions: <Your conditions here>			C:1 %rH	30.50	58.10	38.40
Comment: <Your commentary here>			C:2 °C	21.00	23.10	21.88
			C:3 td °C	3.00	13.60	6.79

Log1	Date	Time	%rH	°C
1	27.07.00	17:05:24	52.40	28.10
2	27.07.00	17:05:26	61.20	28.20
3	27.07.00	17:05:27	72.80	28.30
4	27.07.00	17:05:29	79.20	28.50
5	27.07.00	17:05:31	82.90	28.70
6	27.07.00	17:05:32	86.10	28.80
7	27.07.00	17:05:34	88.60	29.00
8	27.07.00	17:05:36	90.40	29.10
9	27.07.00	17:05:37	91.50	29.30
10	27.07.00	17:05:39	92.70	29.50
11	27.07.00	17:05:40	93.90	29.60
12	27.07.00	17:05:42	95.50	29.80
13	27.07.00	17:05:44	96.80	30.00
14	27.07.00	17:05:45	97.70	30.20
15	27.07.00	17:05:47	98.40	30.30
16	27.07.00	17:05:49	99.00	30.50
17	27.07.00	17:05:50	99.30	30.70
18	27.07.00	17:05:52	99.60	30.80
19	27.07.00	17:05:54	99.80	31.00
20	27.07.00	17:05:55	99.90	31.20
21	27.07.00	17:05:57	99.90	31.30
22	27.07.00	17:05:59	99.90	31.40

Log1	Date	Time	%rH	°C
23	27.07.00	17:06:00	99.90	31.60
24	27.07.00	17:06:02	99.80	31.70
25	27.07.00	17:06:04	99.70	31.80
26	27.07.00	17:06:05	99.50	31.90
27	27.07.00	17:06:07	99.30	32.00
28	27.07.00	17:06:09	99.30	32.10
29	27.07.00	17:06:10	99.10	32.20
30	27.07.00	17:06:12	98.90	32.30
31	27.07.00	17:06:14	98.80	32.40
32	27.07.00	17:06:15	98.60	32.50

Printout of table

Printing measurement data

Measurement data can be printed in diagram or table form. A standard sheet is printed as follows:

- Protocol header with title (pre-set with the file or instrument name)
  - Date,
  - Start and finishing time of a measurement (tables only),
  - Channel and reading number (tables only)
  - Consecutive page number
  - Option of entering “Conditions”,
  - Other additional comment lines.

Special protocol headers can be selected from a list via the toolbar.

The printed protocol header contains information on the whole measurement protocol.

It is recommended to use portrait format when printing tables, and landscape format when printing diagrams. Select the format required in the “Page Setup” menu.

Example 2

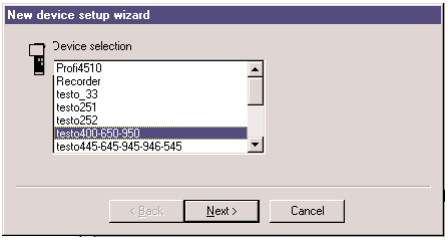
testo 400 and humidity probes
Logging measurement sequence

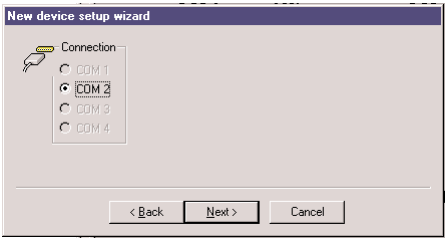
Logging air humidity and temperature values using a testo 400 instrument and connected humidity probes.

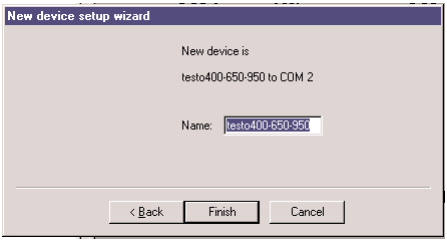
For details on application limits, initial operation, error messages etc. please see the instrument instruction manual.

Initial operation/Connecting hardware

- Connect humidity probe to instrument
- Connect instrument to PC via cable to RS 232
- Switch on instrument
- Call up software
- Select an instrument from the “Instrument” - “New device” list: for example “testo400-650-950”
- Follow the assistent until the instrument symbol appears in Archive.

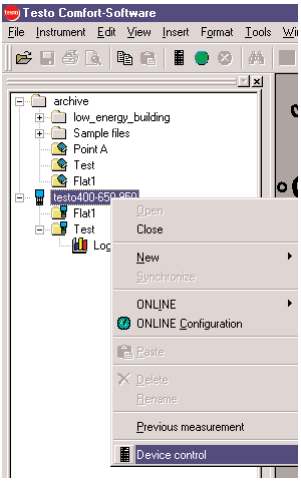






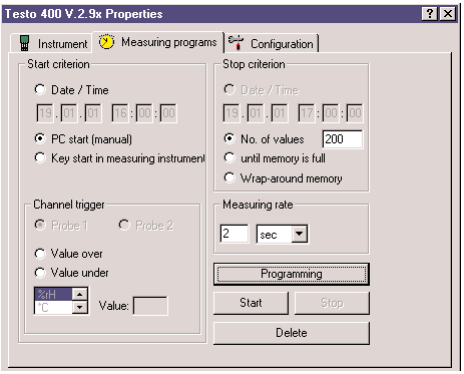
Example 2

testo 400 and humidity probes
Logging measurement sequence



Selecting instrument/Device control

- Click, activate context menu via right mouse button, select “Device control”, then “Delete memory” in Configuration Instrument



Programming instrument

- “Measuring programs” in register
- PC Start
- Number of values: 200
- Measuring rate: 2 s
- Program, “Start” and cover probe tip with hand (produces interesting curve)
- Close instrument via context menu.

Example 2

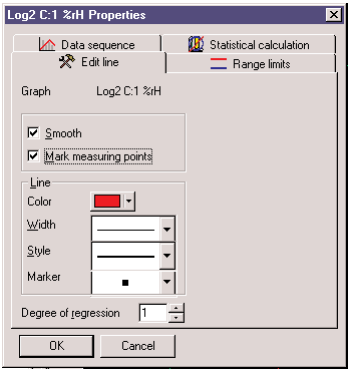
testo 400 and humidity probes
Analysing measurement sequence

Protocol 

Location 

Reading out instrument
- Open instrument via context menu
- Drag the protocol by mouse into the work area and you go straight into a table
- Drag the location by mouse into the work area, activates the readout assistent with automatic search function in archive.
- Right mouse button on button at top left of table gives additional infromation on protocol or point of measurement; comments can be edited.

Context menu in the table
- Content: deactivates columns (insert/remove columns)
- For example, a new dew point column can be generated via “Insert, Formula”.



View as diagram
Click on curve
- Smooth and mark measuring points
- Define line width and style/pattern

Data sequence
- Upper and lower limit values should have different colours

Click on axis
- Set division
- Select ranges

Context menu in diagrams
- Insert text
- Label header for printout

Example 2

testo 400 and humidity probes
Exporting saved data

Editing readings
Managing reference data
In diagrams, it is possible to save the data just measured with the curve of a previous measurement (reference data). To do this, the reference protocol has to be read from the file and assigned* to a diagram. Depending on the length of the reference protocol (relative time scales apply in this case...), this reference data is visible in addition to the data from the current measurement, provided it is also shown in the diagram.

*) determines which view is assigned which curve. Values can be added to or exchanged in a diagram, table or scale.

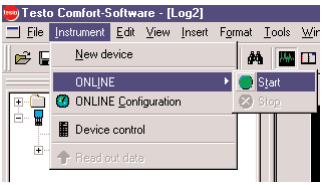
Depending on the quality of the view
- 8 measurement sequences from different protocols can be shown in diagrams
- All of the measurement sequences of a protocol are shown in tables

Exporting to other programs for further editing
Open the program parallel to Comsoft 3 to transmit data e.g. in MS EXCEL®. Drag data from the instrument via drag&drop over the EXCEL® button to the footnote in the EXCEL® worksheet.
If a location is dragged to the button, all of the connected protocols are transmitted to an EXCEL worksheet.
Data can also be transmitted to other programs which support this function.
You can also use Copy/Paste as an alternative to drag&drop.

Last measurement

Example 3

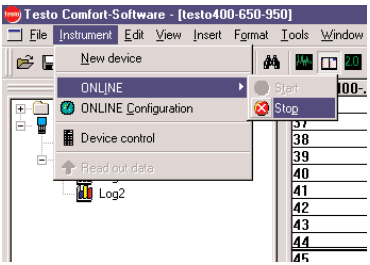
testo 400 and humidity probes
Displaying readings



Measuring

Measurement is via “Instrument/ONLINE/Start-Stop”. The measuring rate can be set in advance via “Instrument/ONLINE Configuration”.
The number of data which can be saved is limited, the maximum possible duration of the measurement is shown with the selected setting.

ONLINE data transmission from the measuring instrument to the measurement protocol can be started, frozen or continued. The various buttons can be accessed, depending on the program mode.

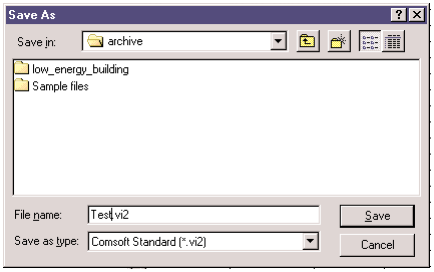


Start: starts a new measurement. A new measurement protocol is set up.
Stop: stops a measurement

Displaying measured data

Measured data can be shown in diagrams or tables. Several of these views can be shown simultaneously in windows. The values shown are updated constantly during measurements.
Click on the respective symbol in the toolbar.

Saving measurement data



Measurement protocols can be copied as a file on the hard disk of your computer for editing at a later stage, printing or to be opened.

Example 3

testo 400 and humidity probes Displaying readings

If data is lost, you can use this method to restore data from the last measurement. The data comes from a backup file, which is only updated every 30 seconds. In some cases, the last measurement data could be missing.

Example 4

testo 175/177: Reading out and exporting sections

Consult the Data logger Instruction manual to find out how to set up a connection between data logger and software and how to program the data logger.

Place a logger, which has values saved, in the desk-top holder which is connected to an interface.

The connection is set up by clicking twice on instrument in the archive. The log saved in the instrument appears under instrument.

A context menu will appear by clicking right on the log icon. Select “Reading out sections ...”.

The “Reading out sections” window opens. Select the value range which you want to show: “Date/Time”, “Lines” or “From time mark”. The time mark is an intermediate mark which can be set in the data logger (refer to the Data logger Instruction manual).

The selected values are shown.

Select “Copy” in the toolbar.

Open Microsoft Excel and select “Edit” > “Paste”.

The readings are accepted into the Excel table.

Error messages

Instrument is not responding ...:

- **Check if instrument is switched on.**
- **Check connection cable.**

This message appears if the PC program cannot communicate with the connected measuring instrument or if the measuring instrument does not respond.

- Is the instrument switched on?
- Has the instrument sufficient power?
- Is the connection cable connected?
- Is it the correct connection cable?
- Correct COM Port connection?

Your instrument has indicated that probes are not working Measuring impossible.

- You are trying to get an online measurement from an instrument to which a probe is not connected.
- Connect the corresponding probes.
- Not all of the input variables for the function "..." are contained in the measurement protocol. You have selected a pre-defined function, which needs more or other parameters than those included in the measurement protocol e.g. you want to calculate the dew point, but only the temperature is available, the humidity parameter is missing.

The folder is not empty. Not possible to delete:

The program does not allow you to simply delete full folders. First delete the data or locations in the folder in order to be able to delete the empty folders or delete the folder in Windows Explorer.

Not possible to delete protocol:

Close and delete the file.

- You want to delete a file, which is still open for editing. Open files cannot be deleted.
- Close the file.

Error messages

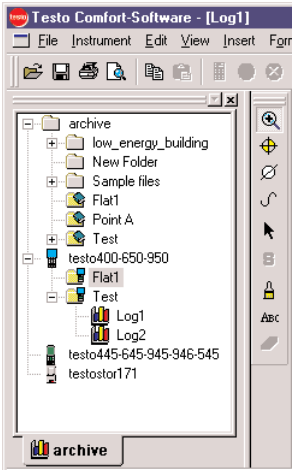
Invalid name: **: !,?,*,:,\ cannot be used in location and folder names.**	Rename the location/folder and do not use these characters.
An instrument setting with this name is already available: **Please select a new name.**	Different names should be used when setting up new instruments. The same names should not be used for different instruments.
The time ranges overlap	- You are trying to connect protocols using invalid data. Overlapping time ranges cannot always be put together in a common protocol.

Details/Background

Display ranges

Testo Comfort software has all the functions needed to control and configure Testo measuring instruments, to transmit data to your PC and to edit it. This Chapter describes all the commands necessary.

Testo Comfort-Software is divided into two main parts: the archive and the work area.



Archive

Your measuring instruments and measurement data are managed in this area.

All of the measuring instruments are inactive when the program starts. If you want to activate a measuring instrument, which is connected, click twice on the symbol for the measuring instrument. Connection to the measuring instrument is set up and the symbol for the instrument changes.
Alternatively, you can click on the symbol for the instrument with the right mouse button and you will then receive a context sensitive menu from which to select. Select “Open”, to activate the required measuring instrument. The measuring instrument has to be connected and switched to the correct port.

Locations and directories can be set up in the archive; familiar to you from Windows Explorer®. You can set up, copy, delete etc. sub-directories by clicking the right mouse button on a directory or a location.

If there are saved measurements in the measuring instrument and these are shown below the measuring instrument, you can drag and drop the data from the measuring instrument to a folder in the archive. You can copy several items by keeping the Control button pressed.
You can also copy the data (from the measuring instrument or archive) into the work area for display purposes. Mark the required data with the mouse and drag it into the work area.

Display ranges

A folder is represented by the symbol for

folder 

A location is represented by the symbol for

location 

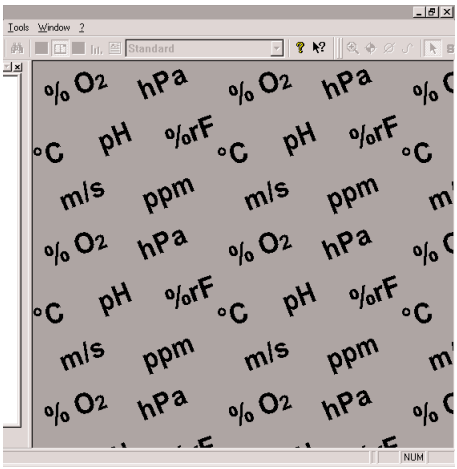
A measurement protocol is represented by the symbol for

protocol 

The measuring instruments which follow are then represented by different symbols. The symbol changes if an instrument has been opened successfully.

Work area
Your data is shown in this area.
If you copy your data from the archive to the work area, the data will be shown. You can decide which type of display to take.

It is possible to change the view, if so required. Simply click on the corresponding symbol in the toolbar.

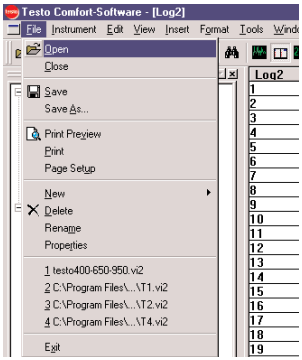


Once you have displayed a measurement in the work area, you can call up a menu, in which further settings can be carried out, by clicking with the right mouse button in the display:

The exact appearance of this menu depends on the view selected.

Details/Background

Main menu item: “File”



File/Open

The data of a measurement protocol can be read in. For example, you can save the current measurement as reference data or display later, as often as required, for checking purposes.
Measurement data files have the file name extension “prn” or “vi2”. Only files which were set up using this version, a previous version, or the Testo PC adapter software are accepted! “wks” files can also be read in.

Measurement protocols contain

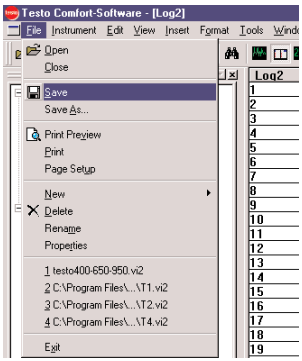
1. per data block:

   A protocol header: The units of the measured parameters and additional information from the measuring instrument are located here, depending on the structure of the measured data.

2. many data items within a data block consisting of:

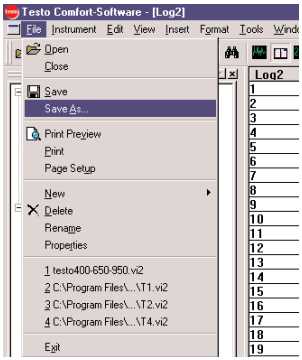
   Time mark: Date and time of respective measurement

   Readings: From all the connected channels



File/Save

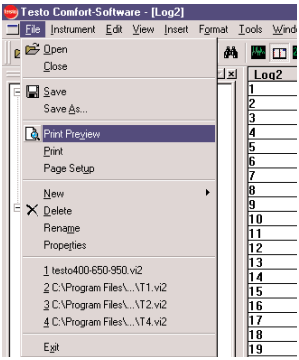
Measurement protocol data is saved as the name (and type) displayed in the top line, using this function. If it is newly created data, which does not yet possess a name, it is necessary to select one. In this case, the type of protocol is “vi2” and is marked by the symbol 



File/Save As

Measurement protocol data is saved in a file on the hard disk of your computer. Data is saved in the RAM memory of your computer during the measurement. This is deleted once you exit the program. If you wish to create protocols with stable values or you wish to analyse, print the data etc. with this or

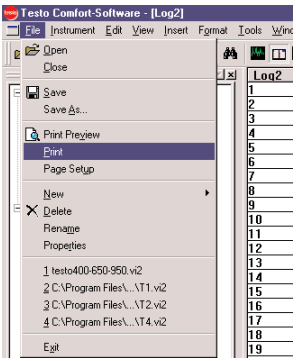
Main menu item: “File”



other programs at a later stage, you should save the data in a file.

Print Preview

The view will be printed exactly as it appears on the screen.

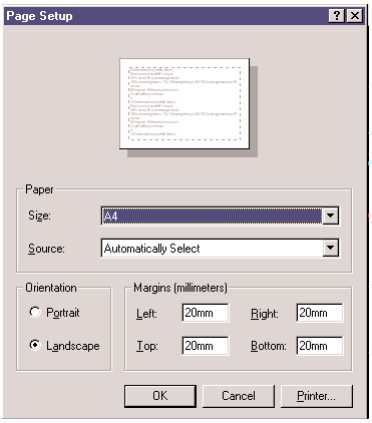


Printing

Measured data can be printed in diagram or table form. A sheet is printed containing the following elements:

1. Protocol header with title (pre-set with file or instrument names), date, start or finishing time of a measurement (tables only), channel and reading number (tables only), current page number, “Conditions” line and additional comment lines.

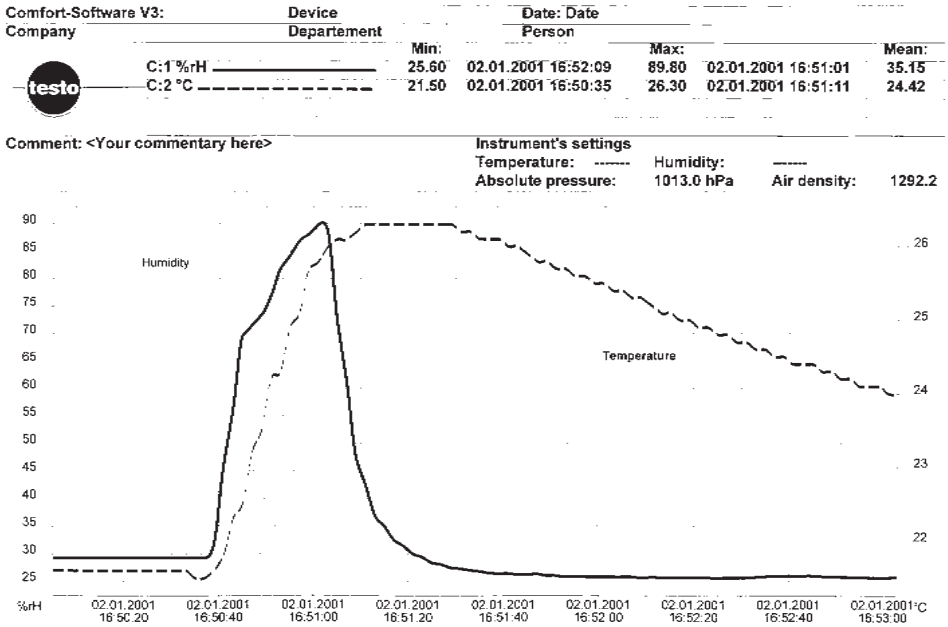
2. Measured data in diagram or table form.
   When printed, the protocol header contains information on the complete measurement protocol. It is recommended to use portrait format when printing tables and landscape format when printing diagrams.
   Set the format with “Page Setup”.



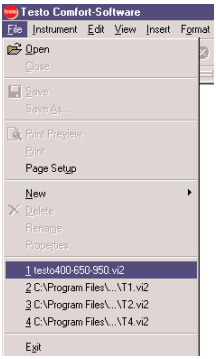
Details/Background

Main menu item: “File”

Example of printout: diagram



Main menu item: “File”

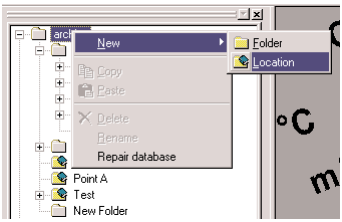


Opening the files last used

The files last used can be opened here. The required file is opened by clicking on the respective file name. However, if you have already deleted or moved this file to another location, you will, of course, not be able to open it and you will receive a message.

Setting up a new location

You can assign as many locations as required within archive, which can then be managed and structured in one of the tree structures familiar from Windows Explorer®. The location or also the location name is used to assign measurement data (reading, unit, time) a name relevant to a specific location or other attributes.



Preparing the measurement

It is recommended to set up a fixed structure in archive for comprehensive measurements at many different locations e.g. when measuring the climate data of a whole house. These locations can then be transmitted to the testo 400 instrument with additional information such as required value, channel dimensions etc., if so required.

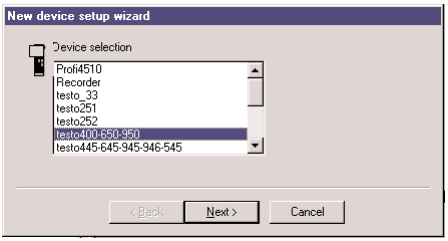
The location names are in the display on site. Selection is possible via “up/down, OK” or barcode pen. Saved data is then coupled with a location name until it is filed in the PC archive.

Main menu item: “Instrument”

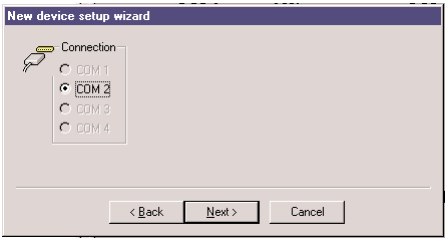
New device

The assistent for setting up the instrument supports you when adding additional measuring instruments to your configuration. You will get to the next page via “Continue” and to the previous page via “Back”.

The instrument, which is to be set up, should be connected to the computer and switched on, since the New device setup wizard checks the connection to the measuring instrument once setup is complete.

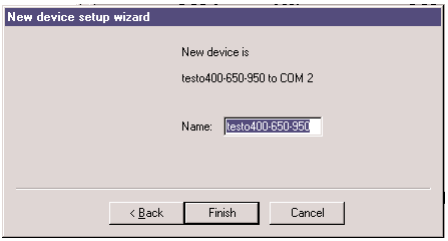


1. A list of instrumentsappears for you to select. Select the instrument which you have just connected.



2. The next step is to select the interface to which the instrument is connected. It is only when you have selected an interface that you can leave this page.

3. You can now assign your newly setup instrument a name, under which it should appear in the Comfort software. Make sure that you choose a name which is not already being used for another instrument. The name of the measuring instrument is shown as standard.



4. An attempt is made to set up a connection to the instrument.

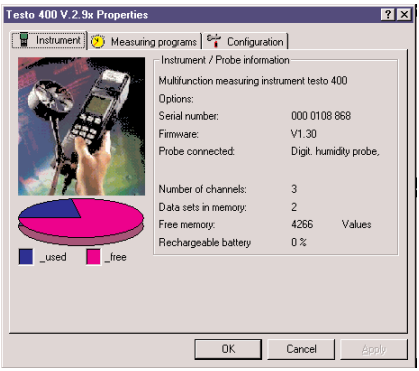
Details/Background

Main menu item: “Instrument”

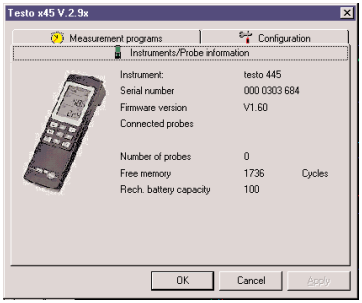
Device control

This menu item is used to call up the configuration page of the selected instrument. These are adapted to the corresponding instruments and make available the respective setting options on offer.

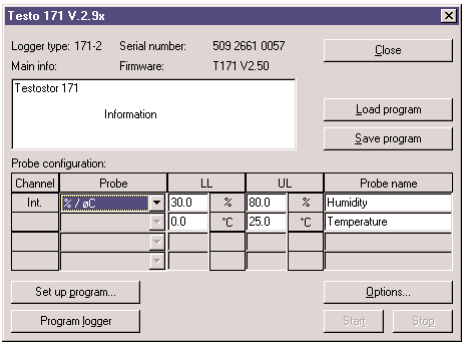
testo 400



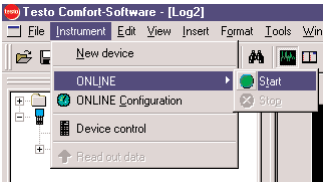
testo 445



testostor 171



Main menu item: “Instrument”

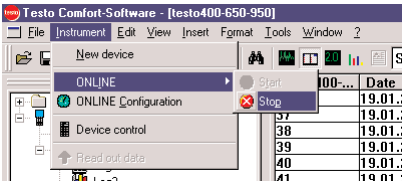


Online

One of the following two elements appears in this menu item, once you have opened an instrument:

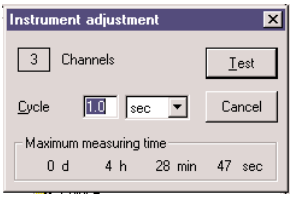
Start

Start the online measurement with this menu item/icon. Data is shown automatically in the work area.



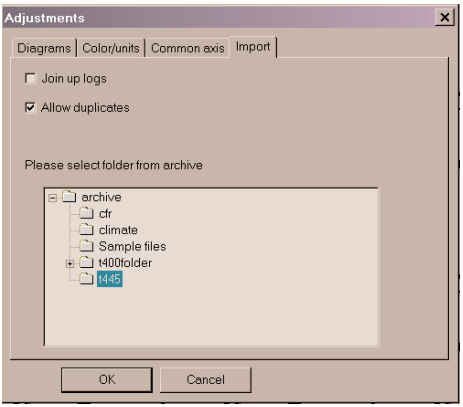
Stop

You can hold the current online measurement with this menu item/icon. You can now also save the protocol from the work area on your hard disk.



ONLINE Configuration

The measuring rate for online measurement is set here. The maximum number of measurements is calculated from this measuring rate. The minimum adjustable measuring rate depends on the instrument and is checked accordingly.

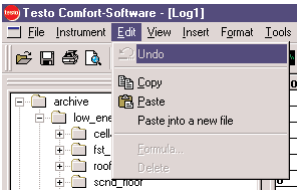


The data is buffered, at regular intervals, in a temporary file on the hard disk. Measurement finishes automatically once the maximum measurement time has been reached.

Automatic cache

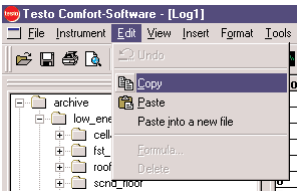
Automatic saving of online protocols protocols can be activated at **Tools/Settings/Save**.

Main menu item: “Edit”



Undo

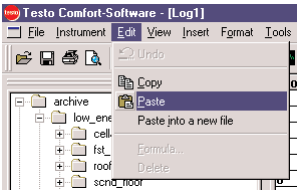
Undoing the last action
Use this menu item to undo the last action.



Copy

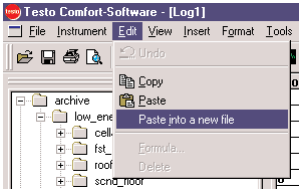
Diagrams, tables or sections of the tables can be copied into the WINDOWS clipboard which are then available in other application programs in the PASTE menu item. In this way, you can get a graph or values from another table into another program. You can also copy the data within Comfort software in the same way.

Note:
To prepare the picture of a graph for subsequent printing using a different program, please first select the line and background colour or patterns/styles which can be printed.



Paste

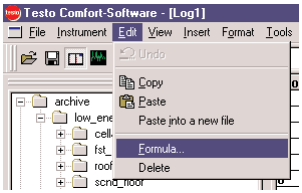
Measurement sequences, locations or directories which were copied from the archive to the clipboard can be pasted in the required point.



Paste into a new file

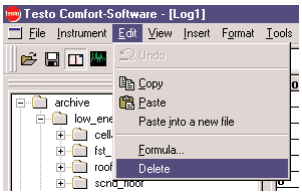
The files copied in the WINDOWS clipboard are pasted into a newly opened file.

Main menu item: “Edit”



Formula

A complete pre-defined formula can be edited or redefined using this command.



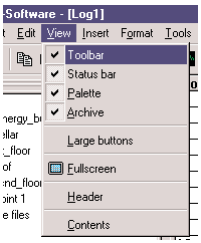
Delete

Deletes all the formulated functions and contents for this measurement data.

Main menu item: “View”

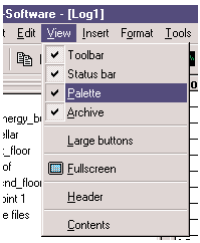
All of the functions pertaining to screen layout and graphic design are located here. The graphical presentation of readings is the main task of this program. Readings can be shown in diagrams and tables, for example. Several such views can be shown simultaneously in a window. The values shown are constantly updated during measurement.

The following is a list of the functions included in this menu:



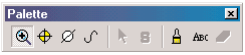
Toolbar

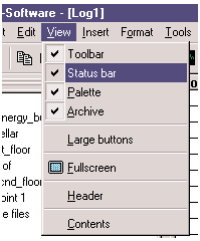
Switches functions, which appear in “Tools, Customize”, on or off, as required. In this way, you have more space on your screen to show data.



Palette

The palette, used to edit diagrams, is switched on or off as required.

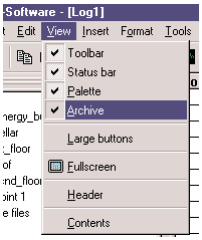




Status bar

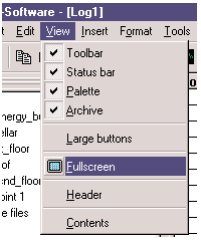
The bottom window line is switched on or off. Information, statuses and notes normally appear at this point.

Main menu item: “View”



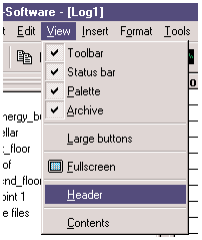
Archive

The archive and registered instruments are activated or deactivated.



Fullscreen

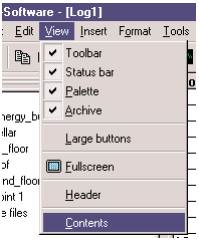
Enlarges the presentation area to screen size.



Header

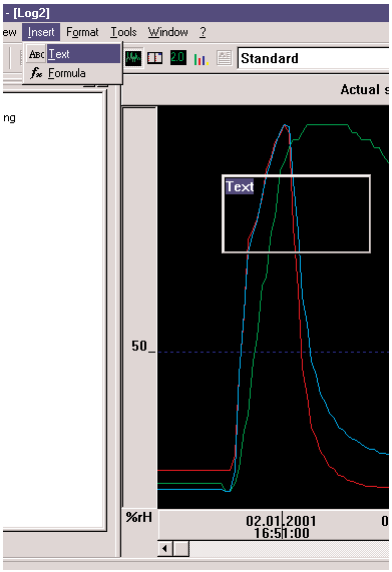
Use to fill header of current diagram/table. The appearance of the protocol header depends on the chosen layout.

Main menu item: “View”



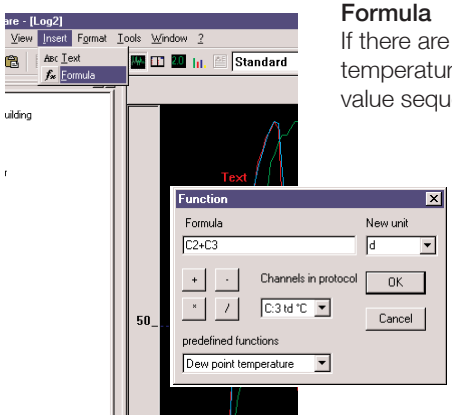
Contents
Individual channels can be activated or deactivated in the protocol shown.

Main menu item: “Insert”



Text

Text can be added to diagrams.
The text entered in the text box can be moved (hold right mouse button and drag) to any point on the diagram area.
If you click twice on the right mouse button when the text box is activated, the font attributes can be changed.
The “Eraser” palette symbol deletes a selected text box from the screen.



Formula

If there are several channels in a measurement protocol e.g. temperature, humidity, they can be offset. The result is a new value sequence which can be displayed and edited.

Formulae

You can subject the measured data to individual calculation by inputting formulae. For example, the formula “(K<Index>-32)*5/9” converts a temperature value with “Degree Fahrenheit” to “Degree Celsius”. Formulae can be applied to the data sequences of individual protocols.

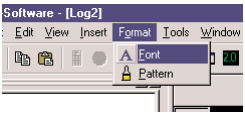
Main menu item: “Insert”

Notes
The decimal point is as follows: 10.50. Values on a parameter list are separated by a comma e.g.: td (K2,K1).

Syntax
Permitted digits/symbol sequence for a formula and an arithmetical printout.

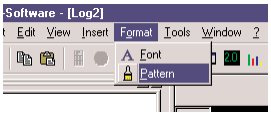
Symbols
Numerical constants e.g.: 3.14
Channel references: K<Index> e.g.: K1
Mathematical operators: +, -, *, /, ^ for exponents
Mathematical functions: sqrt(<Printout>)
Trigonometric functions: sin(<Printout>), cos(<Printout>)
Gradient operator “e.g.: K2” to determine the timed derivation of the parameter measured in channel 2
Case differentiation: if <Condition> then <Printout> else <Printout>

Main menu item: “Format”



This menu item contains the following entries:

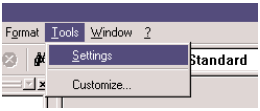
Font
You can set the fonts to be used here. This font is then used for protocols and to label diagrams.



Pattern
Used to set units, common axes, background colour and limit value colours.

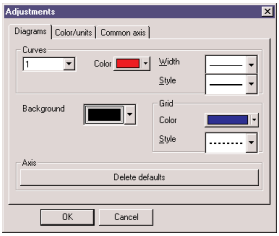
Details/Background

Main menu item: “Tools”

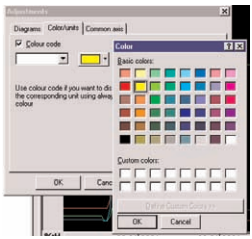


Settings

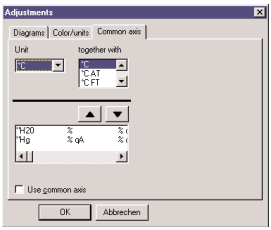
The Settings menu contains the following elements:



- **Diagrams**:
  Curves: Standard allocation of colour, width and style to the eight curves shown in a diagram.
  In diagrams and parametric graphs: sets background and grid colour, line type in grid.



- **Color code**: Tick this box to enable the allocation of the diagram line and histogram bar to the parameter. The axis in diagrams is labelled with a colour associated with a parameter. Histogram bars are coloured individually within the limit values.



- **Common axes**: Tick this box to show more than three different parameters together in one diagram. Use UP/DOWN to select the parameters which are to be assigned to a common variable axis.

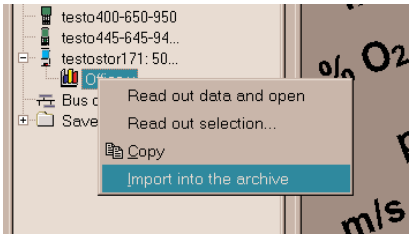
Customizing

Main menu item: “Tools”

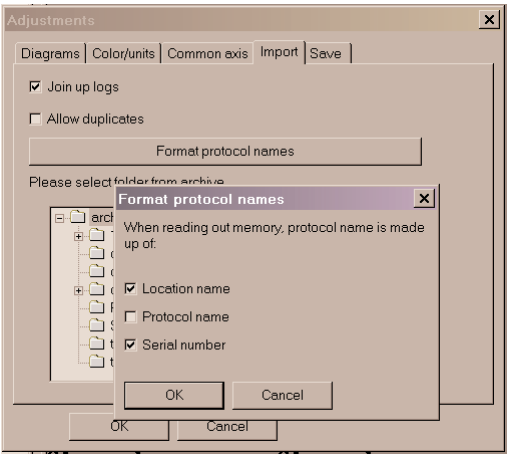
Import function

In the case of separate protocols in data loggers such as **testostor 171** this function adds the contents of the data logger protocol to an already existing file in the archive. Different links can be connected if the channel assignment corresponds.

The function searches in the table for a file which matches the short title in the data logger

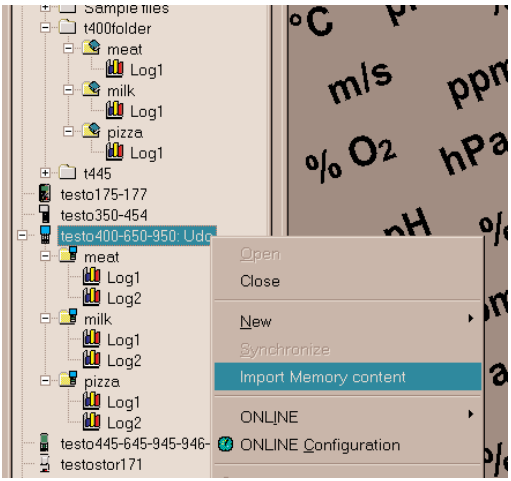


The operation mode of the import function is set up in **Tools/Settings/Import**:



The real file name can be composed from separate components.

If there are several protocols in the instrument memory e.g. in the testo x45 instrument series, this function imports all the protocols of the instrument memory in predefined sites in the archive. Protocols are linked if the target folder is empty or contains a single protocol. Channel assignment must match and the time ranges should not overlap.



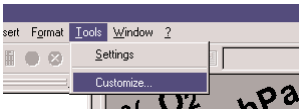
Note
Duplicates are not recognised when linking.

If a target cannot be recognised for the import function, new folders and sites are set up in the table.

It is recommended to delete the source files in the instrument following import since duplicates can be created with each additional import, which then cannot be linked.

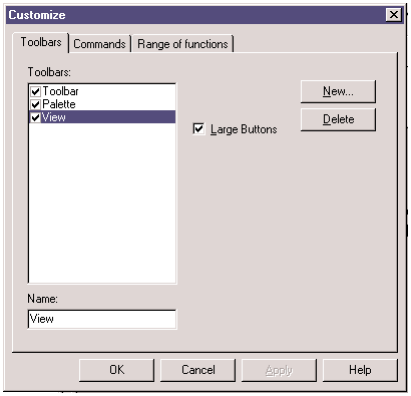
Details/Background

Main menu item: “Tools”

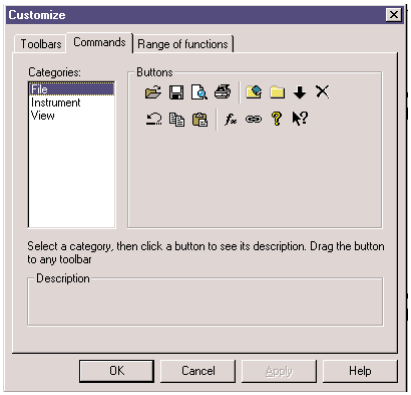


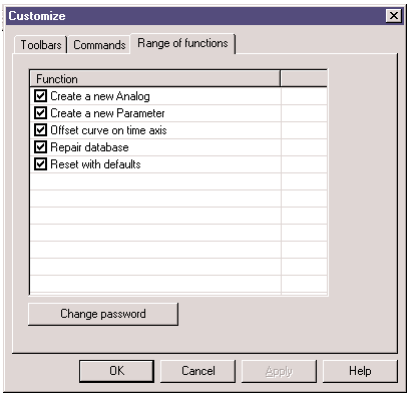
It is possible to influence the appearance of the Comfort software with this menu item. You can set the following:

- Display/Not display toolbar
- Use large or small symbols
- Which symbols are to appear in the toolbar

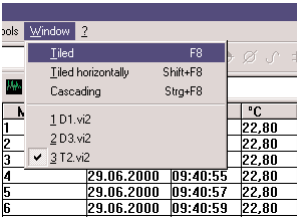


Open the register to change the toolbar shown and move the corresponding symbol to the required location. Click on the bottom of the symbol for more information.





Main menu item: “Window”



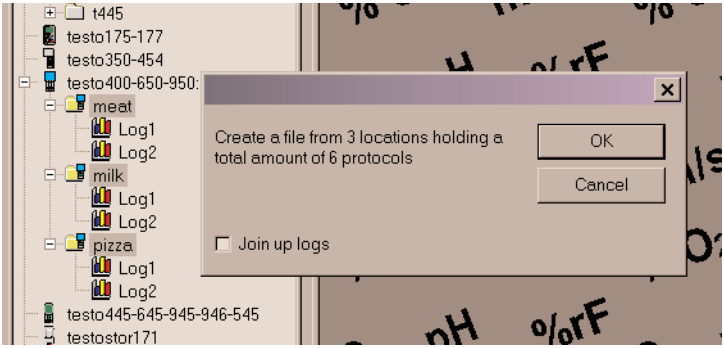
Window
The following sub-menu items can be selected:

Tiled
Tiled horizontally
Cascading

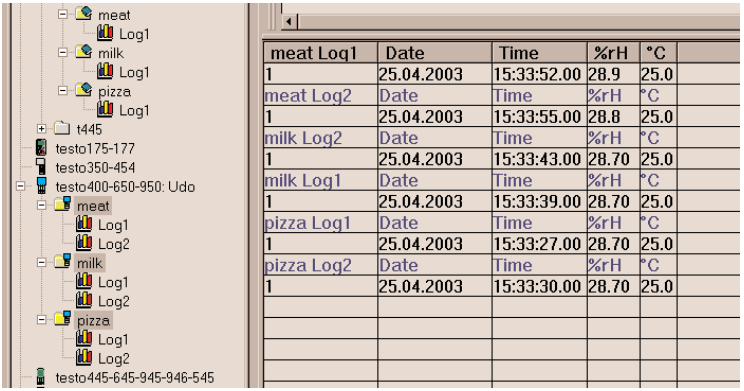
The names of all the open measurement protocols are shown. Is ticked when activated (is in foreground)

Linking the protocols of several sites in one file

To input the protocols from several sites in a closed file, highlight them directly in the instrument and drag them into the table.



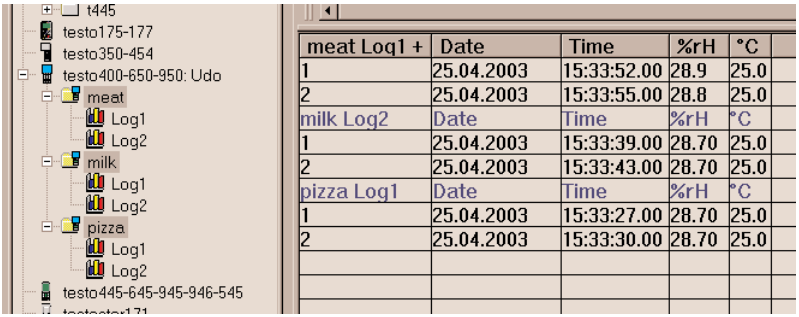
Once carried out, it will look as follows:



meat Log1	Date	Time	%rH	°C
1	25.04.2003	15:33:52.00	28.9	25.0
meat Log2	Date	Time	%rH	°C
1	25.04.2003	15:33:55.00	28.8	25.0
milk Log2	Date	Time	%rH	°C
1	25.04.2003	15:33:43.00	28.70	25.0
milk Log1	Date	Time	%rH	°C
1	25.04.2003	15:33:39.00	28.70	25.0
pizza Log1	Date	Time	%rH	°C
1	25.04.2003	15:33:27.00	28.70	25.0
pizza Log2	Date	Time	%rH	°C
1	25.04.2003	15:33:30.00	28.70	25.0

Linking the protocols of several sites in one file

Measurements from the same site are brought together when **Linking protocols** is activated.



meat Log1 +	Date	Time	%rH	°C
1	25.04.2003	15:33:52.00	28.9	25.0
2	25.04.2003	15:33:55.00	28.8	25.0
milk Log2	Date	Time	%rH	°C
1	25.04.2003	15:33:39.00	28.70	25.0
2	25.04.2003	15:33:43.00	28.70	25.0
pizza Log1	Date	Time	%rH	°C
1	25.04.2003	15:33:27.00	28.70	25.0
2	25.04.2003	15:33:30.00	28.70	25.0

Notes

Notes

testo AG

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