



Software module for testo 521/526

Instruction manual

en





# Foreword/Copyright

## Foreword

Dear Testo customer

We are delighted that you have chosen a product from Testo. We hope that the product will give you a long period of satisfaction and will aid you in your work.

If problems should occur which you cannot rectify yourself, please consult our service department or your dealer. We will endeavour to provide fast and competent assistance to avoid lengthy down times.

## Copyright

This documentation is subject to the copyright of testo AG. Reproduction and use contrary to the legitimate interests of Testo AG are prohibited without the prior, written consent of the company.

We reserve the right to modify technical details from the descriptions, specifications and illustrations contained in this documentation.

**testo** AG  
Postfach 11 40  
79849 Lenzkirch  
Germany

## Trade marks

Microsoft and Windows are registered trade marks of Microsoft Corporation in the USA and/or other countries.






Intel and Pentium are registered trade marks of Intel Corporation in the USA and/or other countries.

Other trade marks or product names are the property of the respective owner.

# General notes

This documentation contains important information about the features and use of the product. Please read this document through carefully and familiarise yourself with the operation of the product before putting it to use. Keep this documentation to hand so that you can refer to it when necessary.

## Pictograms

Symbols	Meaning	Comments
 Warning!	Warning advice: <b>Warning!</b> Serious physical injury could be caused if the specified precautionary measures are not taken.	Read the warning advice carefully and take the specified precautionary measures!
 Caution!	Warning advice: <b>Caution!</b> Slight physical injury or damage to equipment could occur if the specified precautionary measures are not taken.	Read the warning advice carefully and take the specified precautionary measures!
	Note.	Please pay particular attention.
	Position the cursor over the specified element and click with the left mouse key.	–
	Position the cursor over the specified element and click with the right mouse key.	–

## Identification

- Terms which you will find on the screen again are shown in *italics*.
- Terms which you will find on the screen again and are also able to “click on” are shown in **bold**.

521

Indicates for which instrument variant a menu can be executed.

526



# Content

Foreword/Copyright .....	2
General notes .....	3
Content .....	4
1. Licence agreement .....	6
2. Intended purpose .....	7
3. Installation .....	8
3.1 System requirements .....	8
3.2 Installing the software .....	8
4. Programming .....	9
4.1 Connecting the testo 521/526 to the PC .....	9
4.2 Setting up a connection .....	10
4.3 Opening a connection .....	11
4.4 Programming the testo 521/526 .....	12
Module bar .....	13
Instrument .....	13
Settings .....	13
Cross-section .....	20
Measuring program .....	21
4.5 Fast measurement .....	23
Monitor functions .....	24
Settings .....	25
4.6 Scheduling .....	26
5. Troubleshooting .....	27





# 1. Licence Agreement

This is a legally binding contract between you, as the end user, and Testo.

Once you or another authorised person opens the sealed CD-ROM packaging, the conditions of this contract are recognised. If you do not agree with the conditions, return the unopened software package with all accompanying items, including all written documentation and boxes, to the point from which you purchased the software and your money will be returned in full.

## Concession

This licence authorises you to use a copy of the Testo software, acquired with this licence, on a single computer on condition that the software is only used on one computer at any one time. If you have acquired multiple licences for the software you can have so many copies in use as you have licences. The software is deemed as being "in use" on a computer if it is loaded in a cache i.e. RAM or if it is saved in a permanent memory e.g. on the hard disk of this computer, with the exception of a copy installed in a network server for the sole purpose of distribution to other computers which is then deemed as not being "in use". If the number of persons using the software exceeds the number of licences acquired you are then required to provide suitable mechanisms or procedures to ensure that the number of persons using the software simultaneously does not exceed the number of licences.

## Copyright

The software is protected against copying by copyright laws, international contracts and other legal stipulations. It is forbidden to copy the software, product manuals and other accompanying written documents on the software. The software should not be licenced, rented or leased. If the software is not provided with technical protection you can make a single copy of the software solely for security and filing purposes or you can transmit the software to one hard disk on the condition that the original is kept solely for security or filing purposes. Reverse engineering, decompilation, disassembly are not permitted. For every infringement of protective rights you or any authorised person are liable to claims from Testo GmbH & Co Lenzkirch.

## Limited guarantee

Testo guarantees for a period of 90 days following the acquisition of the software by the buyer or for a longer minimum time period if stipulated by the laws in the country of purchase that the software generally corresponds to the standards defined in the accompanying documentation. Testo specifically does not guarantee that the software will run without interruptions or errors. If the software does not function normally in accordance with the accompanying documentation, the purchaser then has the right to return the software to Testo within the warranty time accompanied by a written description on the malfunction(s). Testo is only obliged, after a reasonable time period, to make a functioning copy of the software available to the purchaser or to refund the full purchase price if a copy is unavailable for whatever reason.

Any guarantees in relation to the software, the corresponding manuals and written documentation exceeding the above limited warranty are not admitted.

Neither Testo nor Testo suppliers are obliged to replace any damage occurring during use of this Testo product or caused by the inability to use this Testo product even if Testo has been informed of the possibility of such damage. This exclusion does not apply to damage caused deliberately or through gross negligence by Testo. Likewise claims supported by inalienable legal stipulations are unaffected.

Copyright © 2003 by Testo AG

## 2. Intended purpose

This software module is used for storing, exporting and evaluating individual readings and series of measurements and for configuring the handheld **testo 521** and **testo 526**.

The graphical presentation of readings is the main task of this program.

This software, when combined with the instruments and their probes, allows

- readings and measurement series stored in the instrument to be archived on a PC
- the handheld **testo 521** and **testo 526** instruments to be pre-programmed
- schedules to be planned
- individual print texts for logs to be set
- standard online measurements
- special quick online measurements
- pressure trends to be monitored and recorded according to trigger settings
- measurements to be graphically represented

The instructions contained in this manual presuppose that you are familiar with how to operate your computer under Windows® .



## 3. Installation

### 3.1 System requirements

#### Minimum system requirements

- PC with operating system
  - Microsoft Windows 95 or higher (if compatible)
  - Microsoft Windows NT 4, Service Pack 4 or higher (if compatible)
  - Windows 2000 or higher (if compatible)
- CD-ROM drive
- Pentium 100 MHz
- 32 MB RAM
- 15 MB hard disk space free
- Free serial interface (COM) or suitable adapter

### 3.2 Installing the software

The software interface (appearance, operation philosophy) is defined in accordance with the Microsoft® Office Standard. Icons and menu items are specified according to this standard. If you already use Office programs (Word®, Excel®, PowerPoint® ...), you will quickly become familiar with the user interface.

#### Installation process

In order to adapt the programming of your **testo 521/526** to your own particular requirements, you will need a PC on which the testo ComSoft software is installed.

Instructions for installing and operating the software can be found in the testo ComSoft manual.

- ▶ After successfully installing the software, continue with 4.1 Connecting the **testo 521/526** to the PC.



## 4. Programming

521 526

### 4.1 Connecting the testo 521/526 to the PC

To be able to connect the **testo 521/526** to your PC, you need a free serial interface (RS232).

If you only have USB interfaces, you need a USB-to-serial adapter, which can be obtained from your PC dealer. Testo recommends the following adapter: model no. F5U103 from Belkin. It has been checked for functional compatibility with the testo ComSoft software.

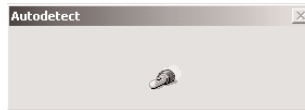
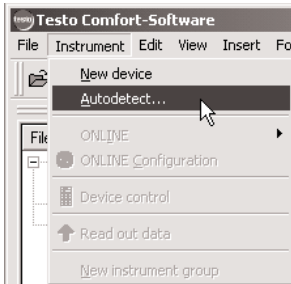
- 1 Connect the serial connecting cable (0409 0178) to your PC.
- 2 Connect the **testo 521/526** to the connecting cable.
- 3 Start the testo ComSoft software.



521 526

## 4.2 Setting up a connection

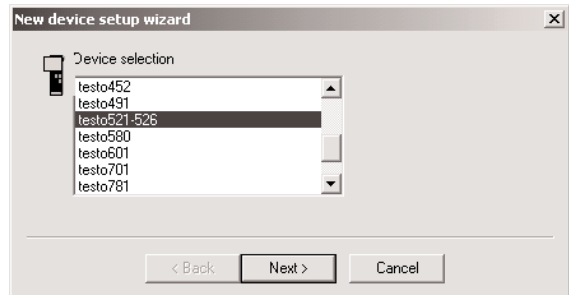
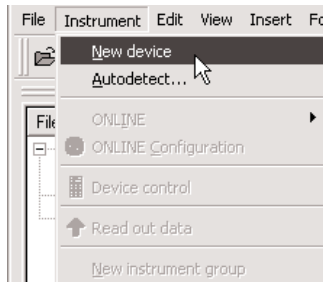
- 1 Start the testo ComSoft software.
- 2 Select **Instrument > Autodetect...**
  - The Autodetect (searching) window opens.



- A connection to the found instrument is set up automatically and the name of the connection then appears in the archive window.

-or-

- 2 Select **Instrument > New device**.
  - The New device setup wizard window opens.
- 3 From the devices available, select **testo 521/526**



and click on **Next**.

- 4 Under Connection, select the interface through which you connected the instrument to your PC and then click on **Next**.
- 5 Enter a name for the connection and click on **Finish**.

521 526

## 4.3 Opening a connection

Filename	Comments
archive	
testo521-526	
Saved settings	

- ▶ In the *archive* window, double-click on the connection you want to open.
- If a measurement log is stored in the **testo 521/526**, the log symbol and the short name of the log will appear under the opened connection.

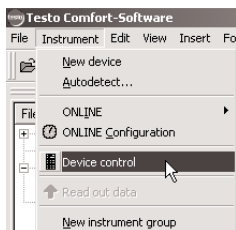
Filename	Comments
archive	
testo521-526	
Saved settings	

- ! When the connection is opened the readings stored in the **testo 521/526** are not transferred to the PC. To transfer the readings:
  - ▶ Double-click on the short name of the log (see instruction manual for the testo ComSoft software).



521 526

## 4.4 Programming the testo 521/526



! Programming will result in the loss of any readings that are stored in the device.

▶ Any data in the device should be exported before programming (see instruction manual for the testo ComSoft software).

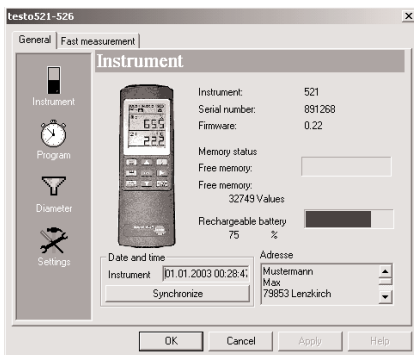
▶ Select **Instrument > Device control**.

! This function is only activated if the name of the connection is highlighted in colour. If this is not the case:

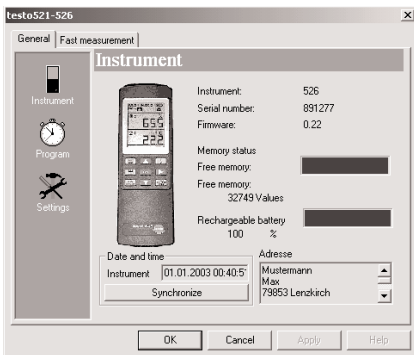
▶ First click on the name of the connection and then select **Instrument > Device control**.

- The window for programming the **testo 521** or **testo 526** opens.

521




526





521

## Module bar

On the left-hand side is a bar in which the available modules are represented. You can select these by clicking on them with the mouse .

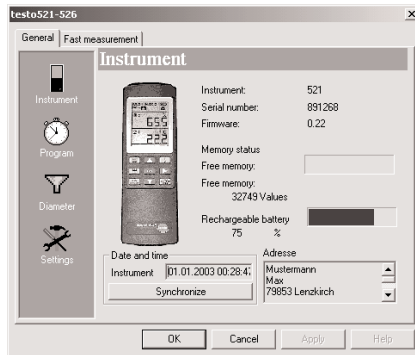


526

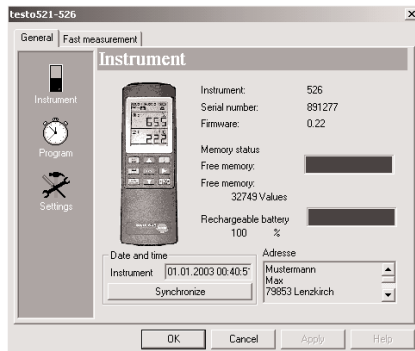
## Instrument

In the **Instrument** module you can read general information about the **testo 521** or **testo 526**.

521

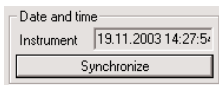


526





## 14 4. Programming



521 526

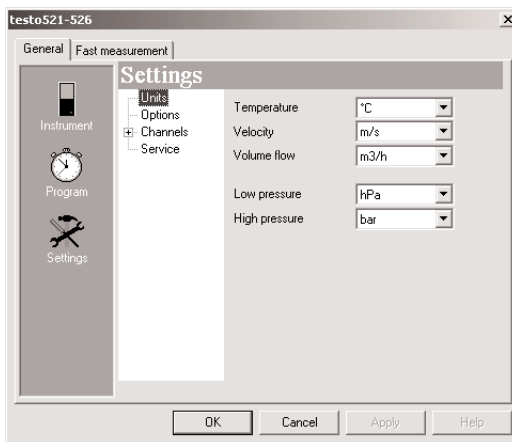
Date and time:

The set date and time are displayed.

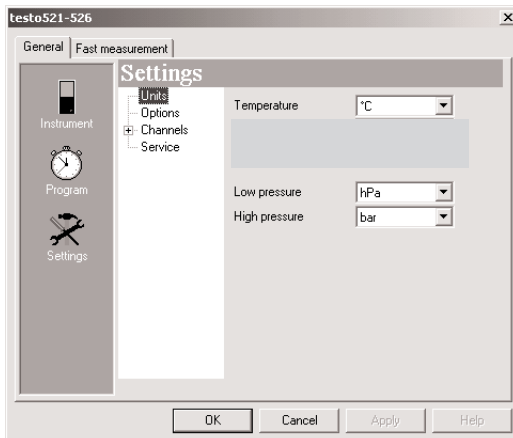
- ▶ Click on **Synchronize** to synchronize the date and the time with the clock of your PC.

521

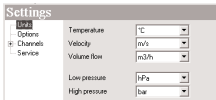
## Settings



526

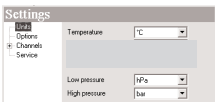


In the *Settings* window you can select the parameters

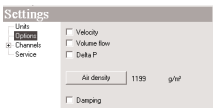


521

**Units**  
Click on **Units**.



526



521

**Options (testo 521)**

To switch additional parameters on or off, click on **Options**.

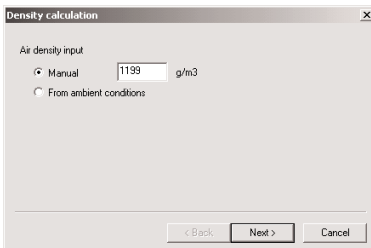
**Air density**

*Air density* button

The **Air density** button starts the wizard for calculating the air density.

521

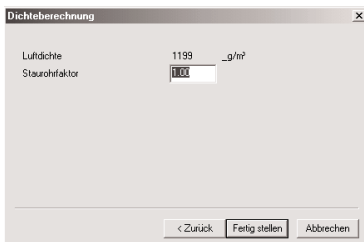
Manual density calculation



Activate the **Manual** menu item.

**Next >**

Press the **Next** button.



Enter the pitot tube factor.

**Finish**

Press the **Finish** button.

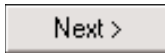


## 16 4. Programming

521

Calculating density from ambient conditions

Activate the **From ambient conditions** menu item.



Press the **Next** button.

- Inputting ambient conditions manually

Activate the **Manual** menu item.

Enter values.

- Ambient conditions from height

Select the **From height** menu item and press the **Next** button.

Enter the height and the pressure difference from the ambient pressure at the channel and then click on **Next**.



Density calculation

Air density 1199 g/m<sup>3</sup>

Pitot tube factor 1.00

< Back Finish Cancel

Enter the pitot tube factor.

- Barometer value of ambient conditions

Density calculation

Ambient conditions

Air moisture 50 %H

Temperature 20.0 °C

Absolute pressure

Manual 1013 hPa

From height

With barometer value

< Back Next > Cancel

Select the **With barometer value** menu item and click on **Next**.

Density calculation

Barometer value 1013 hPa

Height above mean sea level 352 m

Differential pressure in duct 922 hPa

< Back Next > Cancel

Enter the barometer value, height and pressure difference and click on **Next**.

Density calculation

Air density 2181 g/m<sup>3</sup>

Pitot tube factor 1.00

< Back Finish Cancel

Enter the pitot tube factor.

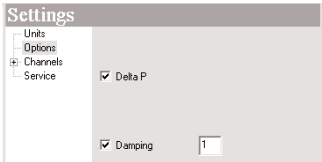
**Finish**

After entering the values, click on **Finish**.



## 18 4. Programming

### 526 Options (testo 526)

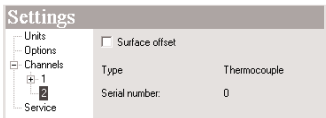


Switching additional parameters on or off

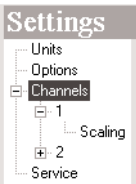
### 521 526

#### Channels

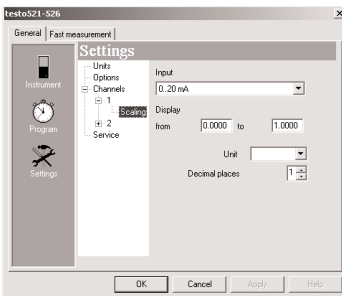
Click on **Channels**.



With scalable sensors, scaling coefficients can be stipulated for the sensor inputs.



Activate the channel to which the power cable is connected. Click on **Scaling**.



Select the input value and unit and confirm with **OK**.

521 526

**Service**Click on **Service**.

- Address

 A screenshot of the 'Enter address' dialog box. It contains several input fields: 'Name' (Mustermann), 'First name' (Max), 'Location' (79853 Lenzkirch), 'Street' (Testo Str. 1), 'Company' (Testo AG), and 'Telephone' (07653/681-0). At the bottom, there are 'OK' and 'Cancel' buttons.

Press the **Address** button. The Enter address window is then opened. Create the user address. Confirm the input with **OK**.

A maximum of 24 characters can be entered per input field.

- Printed heading

 A screenshot of the 'Printed heading' dialog box. It has a single input field containing 'Testo AG' and 'OK' and 'Cancel' buttons at the bottom.

Press the **Printed heading** button. The *Printed heading* window opens. Enter the heading. Confirm the input with **OK**.

- Factory reset

 A screenshot of a 'Note' dialog box. It features a question mark icon and the text 'Reset default'. At the bottom, there are 'Yes' and 'No' buttons.

Press the **Factory reset** button. The Factory reset window opens. You are asked whether a factory reset is to be performed.

If you select **Yes**: the factory reset will be performed and all adjustable parameters will be reset.

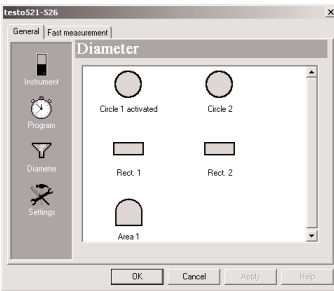
If you select **No**: factory reset will be cancelled.


! Instrument memory is cleared.

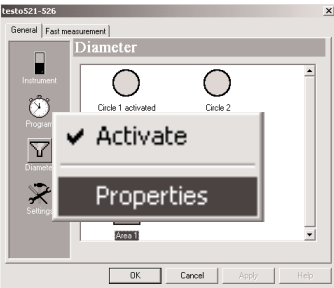
! You will need to set the language again.




## Cross-section



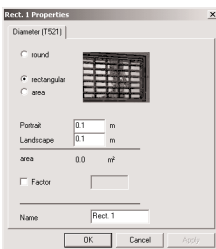
Activate the desired cross-section with the  mouse key.



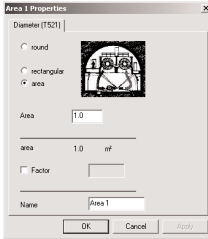
Then press the  mouse key and open the **Properties** menu.



- Enter the value for round surfaces.



- Enter the value for rectangular surfaces.



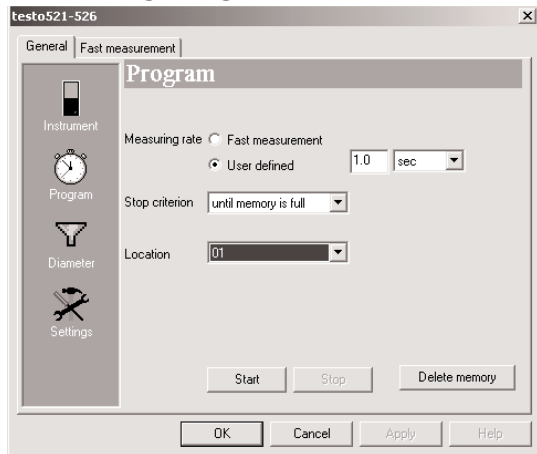
- Enter the value for the area.

Factor: Enter offset factor.

Confirm each input by pressing **OK**.

## Measuring program

521 526

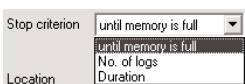
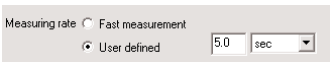


Measuring rate:

You have a choice between fast measurement and user defined. Fast measurement activates the measuring cycle 0.04 s, while user defined enables a free value to be entered.

- ▶ Choose the cycle at which the measurements are to be performed.

You have a choice between the time units sec (seconds), min (minutes), h (hours) and d (days).



Stop criterion:

- ▶ Select the desired criterion for stopping the measurement program.

You have a choice between until memory is full, no. of logs and duration.



## 22 4. Programming

Location:

Location:

- ▶ Choose the location at which the measurements are to be performed.

526

### Tightness test parameter

**Tightness test parameter**

Press the **Tightness test parameter** button.

**Tightness test parameter**

Slow-down time:    
 Test time:    
 Reference:  mbar  
 Max. pressure drop:  mbar

Enter the parameter for the tightness test.

The terms used in this software are called the following in the instrument:

PC software	Instrument
Slowdown time	t SIDo Req
Test time	t Test
Reference pressure	P Req
Max. pressure drop	ΔP Req

Press **Input from table**.

**Tightness test table data**

Material:

Procedure:

Nominal diameter:

Test time: 5.0 min  
 Reference pressure: 10.0 mbar  
 Max. pressure drop: 2.5 mbar

Enter the parameters.

Confirm the inputs with **OK**. Press **Start** to start the measurement program.

## 4.5 Fast measurement

521 526

Fast measurement records dynamic pressure processes. These can occur unexpectedly. In some circumstances large volumes of data can be created during recording, even though there is no event. The trigger function can be used to define a rule that filters out the interesting data material. These data are stored separately and visibly in individual mutually independent logs. The software shows the monitoring log and several snapshot pages. All logs are presented as line diagrams. They are displayed on registers.

The monitor time window shows the measured data with a time offset (approx. 2 s) for measurements in the handheld instrument.

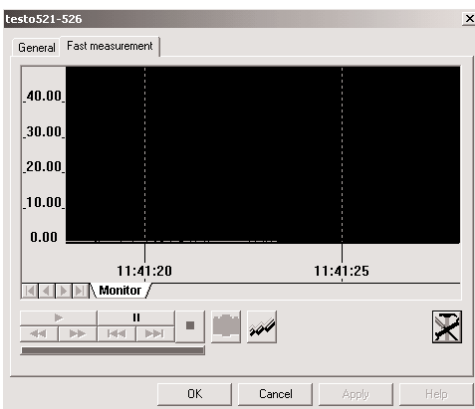
The monitor log runs for as long as the fast measurement mask is visible. The monitor can be paused with the pause function, but recording will continue. Once the pause is over, the data recorded in the meantime will be presented.

! The monitor log is discarded on closing.

! Measuring rate 25/sec.

Fast measurement

Click on **Fast measurement**.



The Fast measurement window opens.

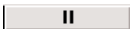


## Monitor functions



- Play

Display the monitor log online. Only the “Pause” and “Snapshot” or “Trigger” buttons can be selected.



- Pause

The monitor pauses. The scroll functions and “Snapshot” can be selected.



- Scroll forward/back

1/10<sup>th</sup> the width of the window each time



- To the start / To the end

Select the first or the last log.



- Manual snapshot

Recording begins from Start. At the end a new page with the snapshot log is inserted. This button is only active if the trigger is deactivated.



- Retrospective snapshot

Only possible during a pause. In the monitor log, define the start and end of a section (click in the display field with the right mouse key). If boundaries are defined, the snapshot function supplies a log that only contains this section.



- Trigger

Trigger rules generate start/end criteria. At every end a new page with the snapshot log is inserted. If the trigger is active the “Manual snapshot” function is deactivated.



Signal field

- Signal field

The signal field is green while the log is running, and otherwise is red.

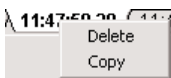


- Delete or copy snapshot

Click with the right mouse key on the register to be deleted.

**Delete** means that the log is deleted without a confirmation request.

**Copy** means that the measurement is displayed in tabular form.





## Settings

Recording can optionally be controlled by means of the reading trigger. Triggers generate snapshot logs. A history can also be added to the log.

! Once the starting event has arrived, only 10s can be used as history. If the starting event arrives immediately after the time window has started, the history will not be included.

Press the Settings button.

The *Settings* window opens.



- “Reading trigger” box

Activates start, stop and history

- Start criterion

Selection list: *Value over/under; enter the threshold.*

- Stop criterion

Selection list: *Value over/under and seconds later.*

Enter the threshold or value for the time margin.

! The start and stop criteria must be logically exclusive, otherwise the trigger will not be activated.

- Add history box

Activates inputting of the time margin in sec. for recording the values before a start event of the trigger. Enter value from 1 to 10 seconds.

- Scaling

Enter values from/to.

- Time window

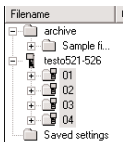
Enter the required width of the time window.

! The diagram shows a time window of adjustable width. If the curve leaves the time window, the window is scrolled.



521 526

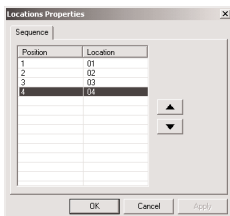
## 4.6 Scheduling



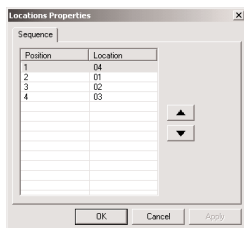
Activate the sites (keep shift button pressed and click on locations with left mouse button) located at the testo 521/526 instrument driver. Then click the right mouse button on a highlighted site.





Select the **Extras** menu.



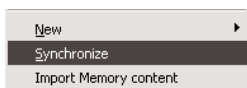
The *Locations Properties* window is opened.



The order of locations can be changed. Select the location that is to be moved. Use the arrow keys  or  to move the location and confirm with **OK**.



Activate the device driver with the right mouse key.



Click on the **Synchronize** dialogue field.

The message “Reprogramming will result in the saved data being deleted” appears. When you press **Yes** the data will be deleted.

The chosen order of locations is shown in the device in the **Locations** menu.

## 5. Troubleshooting

<b>Fault</b>	<b>Possible causes</b>	<b>Remedy</b>
Scheduling is not accepted.	Device and PC are not synchronized	Synchronize device and PC with the "Synchronize" button
Fast measurement: Connection lost. Rectify the fault and press OK to continue	Connection lost, battery empty	Find and rectify the cause
Measuring program: Maximum program duration is %s	Program duration too long.	Clear memory
Fast measurement: Invalid or missing range selection	Snapshot function with fast measurement is lost	Add range selection
Fast measurement: Invalid trigger values	Illogical trigger configuration	Change settings accordingly

If we were unable to answer your question, please contact your distributor or Testo Customer Service. You will find contact details in the Warranty booklet or in Internet at [www.testo.com](http://www.testo.com).



testo AG  
Postfach 11 40, 79849 Lenzkirch  
Testo-Strasse 1, D-79853 Lenzkirch  
Germany  
Telephone: +49 (0) 7653 681-0  
Fax: +49 (0) 7653 681-100  
e-mail: [info@testo.de](mailto:info@testo.de)  
Internet: <http://www.testo.com>