



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.

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## 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

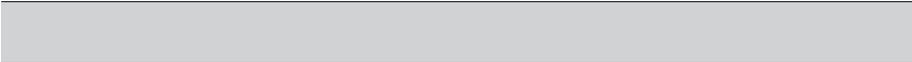
Indicates for which instrument variant a menu can be executed.

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## 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

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### 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.



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## 4.2 Setting up a connection

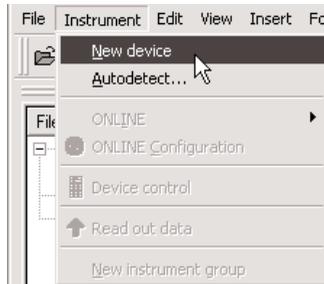
- 1 Start the testo ComSoft software.
- 2 Select **Instrument > Autodetect...**
  - The Autodetect (searching) window opens.



- 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**.

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## 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).



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## 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).

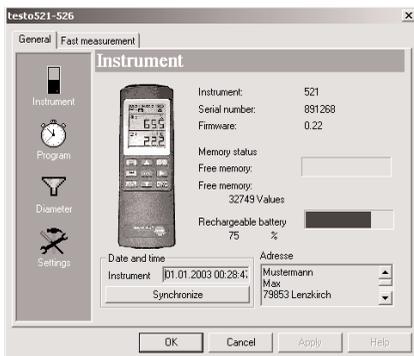
▶ Select **Instrument > Device control**.

! 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.

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## 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 .

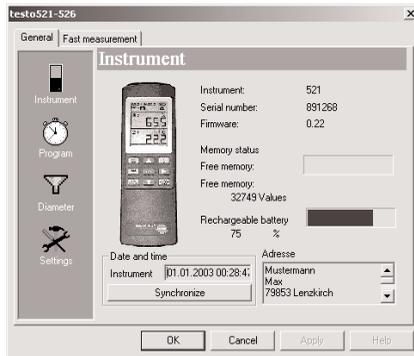


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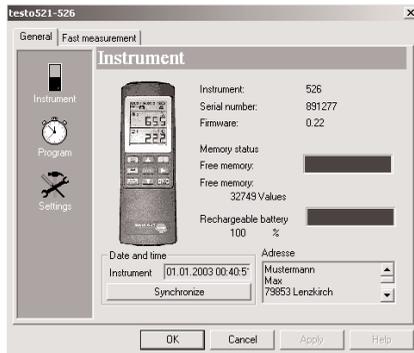
## Instrument

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

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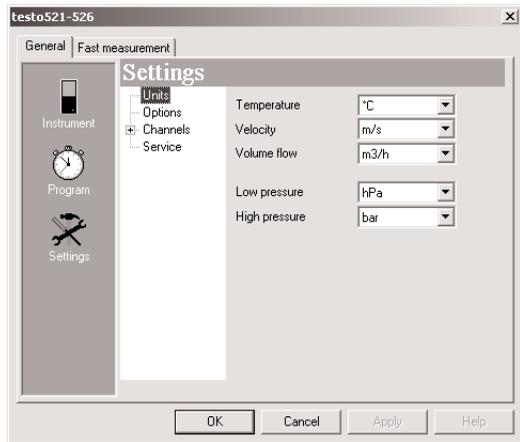
Date and time:

The set date and time are displayed.

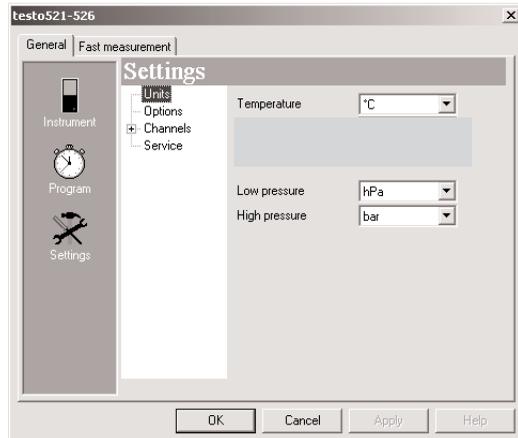
- ▶ Click on **Synchronize** to synchronize the date and the time with the clock of your PC.

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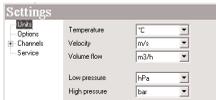
## Settings



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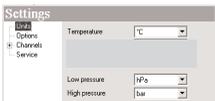


In the *Settings* window you can select the parameters

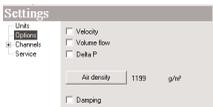


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**Units**  
Click on **Units**.



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**Options (testo 521)**

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

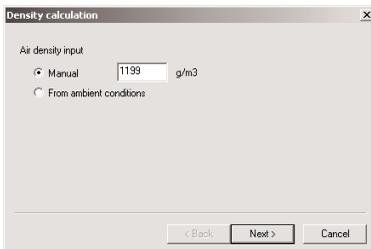
**Air density**

*Air density* button

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

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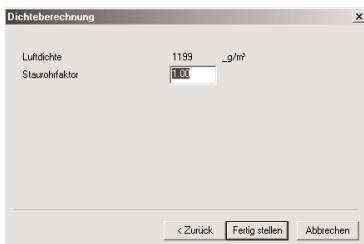
Manual density calculation



Activate the **Manual** menu item.

**Next >**

Press the **Next** button.



Enter the pitot tube factor.

**Finish**

Press the **Finish** button.



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Calculating density from ambient conditions

Density calculation

Air density input

Manual 1199 g/m<sup>3</sup>

From ambient conditions

< Back Next > Cancel

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



Press the **Next** button.

Density calculation

Ambient conditions

Air moisture 60 %rH

Temperature 20.0 °C

Absolute pressure

Manual 1013 hPa

From height

With barometer value

< Back Next > Cancel

- Inputting ambient conditions manually

Activate the **Manual** menu item.

Enter values.

Density calculation

Ambient conditions

Air moisture 60 %rH

Temperature 20.0 °C

Absolute pressure

Manual 1013 hPa

From height

With barometer value

< Back Next > Cancel

- Ambient conditions from height

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

Density calculation

Height above mean sea level 835 m

Differential pressure in duct 924 hPa

< Back Next > Cancel

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**.



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### 526 Options (testo 526)

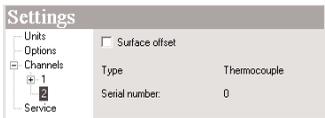


Switching additional parameters on or off

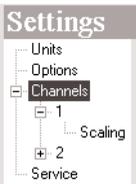
### 521 526

#### Channels

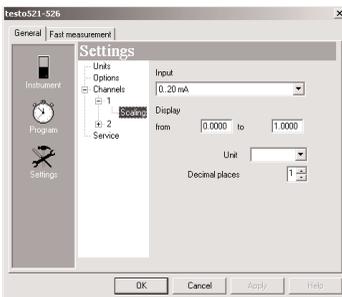
Click on **Channels**.



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**.

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**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.

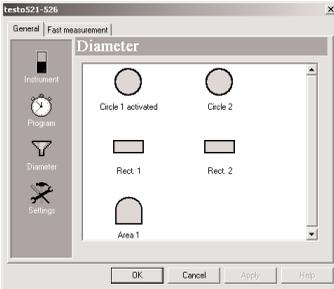
If you select **No**: factory reset will be cancelled.

! Instrument memory is cleared.

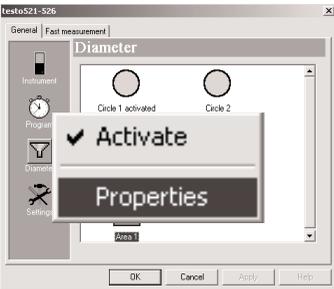
! You will need to set the language again.



## Cross-section



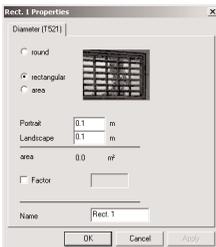
Activate the desired cross-section with the  mouse key.



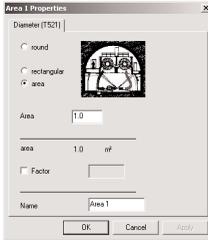
Then press the  mouse key and open the **Properties** menu.



- Enter the value for round surfaces.



- Enter the value for rectangular surfaces.



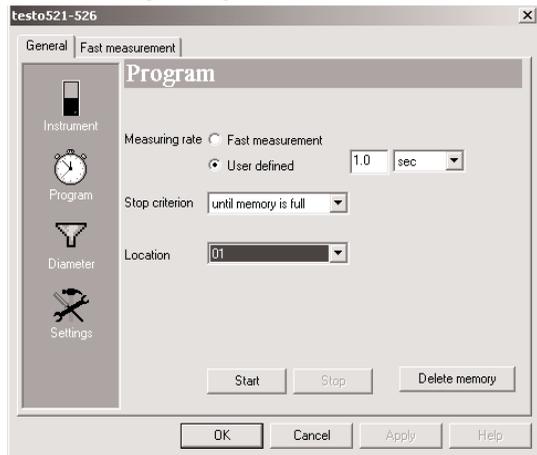
- Enter the value for the area.

Factor: Enter offset factor.

Confirm each input by pressing **OK**.

## Measuring program

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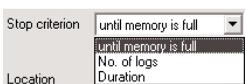


Measuring rate:

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.



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Location:

Location:

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

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### 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

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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.

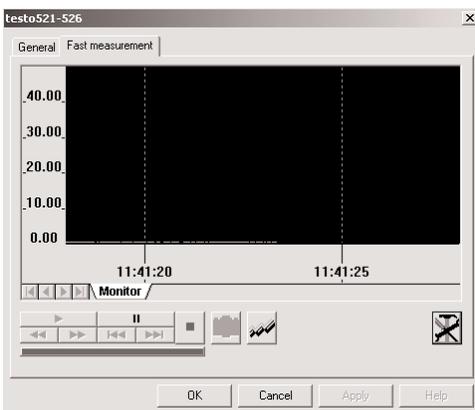
The monitor log runs for as long as the fast measurement mask is visible. The monitor can be paused with the pause function, but recording will continue. Once the pause is over, the data recorded in the meantime will be presented.

! 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.



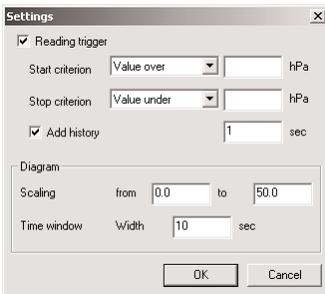
## Settings

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

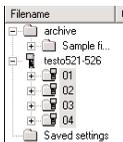
Enter the required width of the time window.

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



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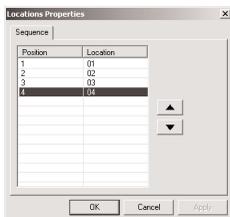
## 4.6 Scheduling



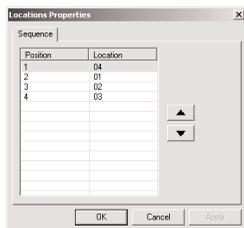
Activate the sites (keep shift button pressed and click on locations with left mouse button) located at the testo 521/526 instrument driver. Then click the right mouse button on a highlighted site.



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).



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