



testo 556/testo 560  
Refrigeration System Analyzer

Instruction manual

en (international)





# Contents

<b>Safety and the environment</b> .....	<b>4</b>
<b>Specifications</b> .....	<b>6</b>
<b>Product description</b> .....	<b>8</b>
<b>First steps</b> .....	<b>10</b>
<b>Using the product</b> .....	<b>12</b>
Setting the instrument .....	12
Preparing for measurement .....	13
Measuring .....	15
Performing actions .....	17
<b>Maintaining the product</b> .....	<b>20</b>
<b>Tips and assistance</b> .....	<b>22</b>

# Safety and the environment

## About this document

- › Please read this documentation through carefully and familiarize yourself with the product before putting it to use. Keep this document to hand so that you can refer to it when necessary. Hand this documentation on to any subsequent users of the product.
- › Pay particular attention to information emphasized by the following symbols:



- With the signal word **Warning!**:  
Warns against hazards which could result in serious physical injury if the precautionary measures indicated are not taken.



- With the signal word **Caution!**:  
Warns against hazards which could result in minor physical injury or damage to equipment if the precautionary measures indicated are not taken.

-  Important information!

## Avoiding personal injury / damage to equipment

- › Do not make measurements with the measuring instrument and its sensors on or near live components unless the instrument is expressly approved for current/voltage measurements!
- › Never store the measuring instrument together with solvents and do not use any desiccants.
- › Only operate the measuring instrument properly, for its intended purpose and within the parameters specified in the technical data. Do not use force.
- › Only carry out the maintenance and repair work that is described in the documentation. Follow the prescribed steps when doing so. Use only OEM spare parts from Testo.



### Warning!

Danger of injury exists if highly pressurized hot, cold and/or toxic refrigerants escape. For this reason, always wear protective glasses and protective gloves when carrying out measurements and other work on the refrigeration system.

If the measuring instrument falls down or is exposed to any other comparable mechanical strain, the end connections of the refrigerant hoses can break off. The valve knobs can also be damaged, which can lead to further damage in the interior of the instrument, which is not visible externally. For this reason, replace the refrigerant hoses after any fall or comparable mechanical strain with new, undamaged refrigerant hoses. For your own safety, send the instrument to Testo customer service for technical testing.

### Protecting the environment

- › Refrigerant gases can harm the environment. Please note the applicable environmental regulations.
- › Take faulty rechargeable batteries / spent batteries to the collection points provided for them.
- › Send the product back to Testo at the end of its useful life. We will ensure that it is disposed of in an environmentally friendly manner.

# Specifications

## Functions and use

testo 556 and testo 560 are refrigeration system analyzers for maintenance and service work on (large) refrigerating systems and heat pumps. The testo 560 furthermore offers a vacuum function for commissioning work. The instruments may only be used by qualified authorized personnel.

With their functions, the testo 556 and the testo 560 replace mechanical manifolds, thermometers and pressure/temperature tables. Pressures and temperatures can be loaded, adjusted, tested and monitored.

The range of functions can be expanded through comprehensive, separately available accessories, e. g.: Various temperature probes (also radio probes), clamp-on probe\*, refrigerant scale\*, oil pressure probe\*, PC software.

testo 556 and testo 560 are compatible with most non-corrosive refrigerants, water and glycol. testo 556-1 and testo 560-1 are not compatible with refrigerants which contain ammonia.

The product must **not** be used in areas at risk of explosion!

\* Option not available as standard. Please ask your local Testo subsidiary.

## Technical data

### Parameters

- High-pressure **pc**, low-pressure **po**, oil pressure **px**: kPa / MPa / bar / psi
- Vacuum **pv**: hPa / mbar / Pa / inH<sub>2</sub>O / psi / Micron / Torr / inHG / bar
- Temperature: °C / °F / K
- Mass: kg, lb
- Current: A

### Sensor

- Sensor: 2x pressure sensor, only testo testo 560: 1x vacuum sensor

### Interfaces

- Pressure connections 3x 7/16", 1x 5/8"
- 2x mini DIN socket: for Pt100 temperature probe, clamp-on probe, pressure probe, scale
- Radio: Radio module for radio probe (accessories)
- IrDA: for compatible Testo protocol printer
- USB socket: for mains unit and data transmission

### Measuring ranges

- High-pressure **pc** measuring range: 0...50bar (rel) / 0...725psi (rel) / 0...5000kPa (rel) / 0...5MPa (rel)  
Overload limit 100bar / 1450psi / 10000kPa / 10MPa
- Low-pressure **po** measuring range: 0...25bar (rel) / 0...362.5psi (rel) / 0...2500kPa (rel) / 0...2.5MPa (rel)  
Overload limit 50bar / 725psi / 5000kPa / 5MPa
- Vacuum **pv** measuring range (only testo): 0...200hPa (abs)/0...2.9psi (abs)
- Oil pressure **px** measuring range: 0...15bar / 0...217psi
- Temperature measurement range: -50...+200°C / -58...392°F

### Resolution

- Resolution of hp, lp, oil pressure: 0.1bar/1.45 psi/10 kPa/ 0.01MPa
- Vacuum resolution: 0.1 hPa / 0.1 mbar / 10 Pa  
0.04 inH<sub>2</sub>O / 0.0015 psi / 80 Micron / 0.08 Torr / 0.003 inHG / 0.0001 bar
- Temperature resolution: 0.1°C / 0.1°F

### Accuracy (Nominal temperature 22°C/71.6°F, ±1 digit)

- Accuracy of hp, lp, oil pressure, vacuum: ±0.5%fs

### Refrigerant

- Quantity: 30 (default), 40 (max.)
- Measurable media: All refrigerants, nitrogen, water, glycol, only testo 556-2, testo 560-2: Ammonia (R717) and other refrigerants which contain ammonia

### Ambient conditions

- Operating temperature: -20...60°C/-4...140°F, USB socket 0...60°C/32...140°F.
- Storage temperature: -20...60°C/-4...140°F

### Housing

- Material: ABS/PA/TPU
- Dimensions: 265 x 135 x 75mm
- Weight: approx. 1250g
- Protection class: IP54

### Voltage supply

- Current source: Rechargeable batteries / batteries  
4x 1.5V, Type AA/mignon/LR6 or mains unit (accessory part), buffer battery 1x 3V Lilon CR2032
- Battery life: approx. 40h (display light off)

### Display

- Type: Illuminated LCD
- Updating of readings: approx. 1s (depending on number of probes)

### Memory

- approx. 60000 readings

### Directives, standards and tests

- EC Directive: 2004/108/EEC

### Warranty

- Duration: 2 years
- Warranty conditions: See web page [www.testo.com/warranty](http://www.testo.com/warranty)

# Product description

## At a glance



- ① IrDA interface (printer),  
USB socket (mains unit, PC data transmission).
- ② Display: Low-pressure side (blue), high-pressure side (red)

### Display symbols

- : Battery capacity (: full, : empty)
- : Print function: sends data

- ③ 2x mini-DIN probe sockets, with socket cover
- ④ Control keys

### Key functions

- : On/off button: Switching the instrument on/off.
- : Function key (4x, orange): shows relevant function on the display.
- : Up/down keys: changes display view.
- : Light key: Switching the display / inspection glass illumination on/off.
- : Print key: Sending data to the Testo protocol printer.
- ⑤ Inspection glass for measuring medium flow.
- ⑥ 4x valve positioners, with two setting positions (see ②).



- ⑦ 3x connections 7/16" UNF,  
1x connection 5/8" UNF, testo 556-1 / 560-1: Brass, testo 556-2 / 560-2:  
Stainless steel. Left /right: Low-pressure / high-pressure, centre: Evacuation  
(5/8")/filling (7/16"), for refrigerant hoses with quick connect fitting, passage  
via valve positioner can be locked.
- ⑧ Unlock buttons for valve positioner.
- ⑨ Battery/radio module compartment. It is not possible to charge  
rechargeable batteries in the instrument!
- ⑩ Foldable suspension device, with eyelet for padlock (see ❶).
- ⑪ Plastic protector



### Warning!

Do not remove plastic protector for measurement and transport. It protects the screw connections of the measuring instrument from breaking off under mechanical strain.

- ⑫ Automatically opening/closing vacuum protection valve: Protects the integrated vacuum sensor from too high pressures.  
After longer periods of non-use:  
In depressurized state, use a blunt object to press the protective valve in, in order to prevent jamming



### Warning!

**Danger of injury due to escaping refrigerant** The danger of freezing (fast evaporation of liquid), poisoning or asphyxiation (displacement of air oxygen) exists for the user.

- › Operate the instrument only with protective equipment (protective goggles, protective gloves). For ammonia refrigerants, additionally wear breathing equipment.
- › Observe the descriptions of danger and information on protective equipment in the safety data sheet of the respective refrigerant use.
- › In case of malfunction of the vacuum protection valve: Discontinue using instrument and send in to Testo customer service.



### Warning!

Externally connected instruments and accessories can be damaged by electromagnetic discharge during the filling process.

# First steps

## > Inserting batteries / rechargeable batteries / radio module:


**i** Radio probes may only be used in countries in which they are permitted (see radio probe instructions).

A radio module (accessory part) is required for the use of radio probes. The instrument can establish a connection with a maximum of two radio probes.

Each radio probe has a probe ID (RF ID). This consists of the last 3 numbers of the serial no. and the position of the slide switch in the radio probe (H or L).

- 1 Fold out the suspension device and open the battery compartment (clip lock).
  - 2 Insert buffer battery (included in delivery, 1x 3V lithium CR2032) in the battery compartment. Observe the polarity (positive pole up)!
  - 3 Push radio module (accessory) into the module slot underneath the buffer battery until the module engages (contact strip facing up).
  - 4 Insert batteries (included in delivery) or rechargeable batteries (4x 1.5V, type AA / mignon / LR6) into the battery compartment. Observe the polarity!
  - 5 Close the battery compartment.
- i** When not in use for long period: Read out memory and remove batteries (not the buffer battery).
- i** When operating the instrument with the mains unit, insert batteries in order to avoid switching off the instrument in case of a power interruption.

## > Switching the instrument on:

- › Press .
- Initialization phase:
    - All display segments are lit (length of time: 2s).
    - Instrument designation, serial number and firmware version are displayed (duration: 2s).
  - Measurement view is opened.

-or-

- Switching on the first time after changing the battery: **Language** is displayed.
  - 1 Set language using ▲ and ▼ and confirm entry with **OK** function key.
    - **Set the Batterytype (Rech/Bat)** is displayed.

The type of battery used must be entered so that the calculation of the battery capacity is carried out correctly.

- 2 Set battery type using ▲ and ▼ and confirm entry with **OK** function key.
  - **Date/time** are displayed.
- 3 Set blinking number with ▲ and ▼ and change to next number with ◀ and ▶.
  - 4 Confirm the entry with the **OK** function key.
    - The configuration menu is opened.

#### > Switching the instrument off:

- > Press ☺.

#### > Operate valve positioner:

The function of the valve positioners is independent of the selected setting position. For easier operation, it is recommended that you unlock the required valve positioners. For transport, the valve positioners should be retracted.

- > Unlock valve positioners: Press unlock button.
- > Retract valve positioner: Press valve positioner into the housing. The refrigeration system analyzer acts like a conventional four-way manifold with regard to the refrigerant path. The passages are opened by opening the valves. The adjacent pressure is measured with valves closed as well as with them open.
- > Open valve: Turn the valve positioner anticlockwise
- > Close valve: Turn the valve positioner clockwise.



#### Warning!

Tighten valve positioner only hand-tight. Do not use tools to tighten the valve positioner, as the thread may be damaged thereby!

# Using the product

## Setting the instrument

### > Setting the instrument:

- 1 Press the **Set** function key.
  - The configuration menu is opened.
- 2 Select function and set parameters:

#### Key functions

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- ◀▶ : Select function / settings.
- ▲▼ : Select function or change parameters / settings.
- **OK** : Activate function or confirm parameters / settings, exit configuration menu.
- **Apply** : Activate function or confirm parameters / settings, do not exit configuration menu.
- **esc** : Exit configuration menu (without saving).

#### Functions and settings / parameters

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- **P-relative/P-absolute** :
  - **P=0** : Zero pressure sensors.
  - **pabs, prel** : Change between absolute and relative pressure displays.
- **Refrigerant** : Set refrigerant.
  - **R...** : Refrigerant number of refrigerant according to ISO817.
  - **---** : No refrigerant selected.
- **Memory** :
  - **Select installation** : Activate customer / system. Select customer (▲▼), select system (◀▶). Symbol \* behind the designation: Protocols are stored in the memory.
  - **Free memory** : Display of the free memory space.
  - **View protocol** : Display measurement protocols. Select customer (▲▼), select system (◀▶). Change display view (▲▼), select protocol (◀▶).
  - **Erase memory** : Delete **Customer, Installation, Protocol** or entire memory (**All**).
- **Alt** : Set height. Change blinking number (▲▼), change between numbers (◀▶).
- **Device settings** :
  - **Units** : Set units for **Pressure, Temperature, Vacuum, Altitude** and **Mass**. Choose parameter (◀), choose unit (▲▼).
  - **Auto off** : Switch automatic switch-off off (**Off**) or on (**On**) (◀▶), enter duration (minutes after button was pressed for the last time) (▲▼).
  - **Date/time** (Format dependent upon selected language) : Set date (day, month, year) and time (hours, minutes).
  - **Language** : Set language (the setting affects the available units and the date format).
  - **PIN** : Enter instrument PIN (protects a running measuring program from manual intervention), deactivate PIN request (enter ----).
  - **Recharge/Standard Bat** : Set battery type (important for correct calculation of battery capacity).
  - **Factory settings** : Reset instrument to condition upon delivery. Caution! Memory is deleted.
  - **Diagnostic** : Display instrument data

- **Probes :**
    - **Radio probe select** : Carry out search for switched-on radio probes. Select probe (▲▼), assign radio probe to low-pressure / high-pressure side (blue or red: **Apply**), delete probe assignment (select ---- and **Apply**).
    - **Probe search** : Carry out search for connected probes or other accessories.
    - **Probe mapping** : Assign radio probes / connected probes to the parameters. Select parameter (▲▼), select probe (◀▶), assign probe (**Apply**).
  - **Saturated steam table** : Display saturated steam table. Select refrigerant (▲▼), change pressure value (◀▶).
- 3 Press **OK** function key to save the settings and to exit the configuration menu.

## Preparing for measurement

### > Connecting the temperature probe / accessories:

- i** Probes / accessories must be connected before the measuring instrument is switched on so that they are recognized by the measuring instrument. If probes / accessories are connected afterwards, a probe search must be carried out: **Set > Probes > Probe search**. Alternative (only available in standard measurement view): **Set** must be held down for 2s.
- i** If radio probes are to be used, these must first be selected (**Set > Probes > Radio probe select**) and assigned (**Set > Probes > Probe mapping**).

- 1 Open socket cover on the left/right side of the instrument.
- 2 Insert the connector of the accessory into the probe socket:

Accessories	Measurement task (measurement channel)	Socket
Temperature probe (blue)	Overheating (toh) or temperature difference (t1)	left
Temperature probe (red)	Undercooling (tcu) or temperature difference (t2)	right
Clamp-on probe*	Compressor performance (l)	right
Refrigerant scale*	Fill / drain (m)	right
Oil pressure probe*	Oil lubrication of the compressor (px)	right

\* Option not available as standard. Please ask your local Testo subsidiary.

- 3 Position accessories according to measurement task:

Measurement task (measurement channel)	Position
Overheating (toh)	On the end of the evaporator
Undercooling (tcu)	On the end of the liquefier
Temperature difference (1)	Measured object 1
Temperature difference (t2)	Measured object 2
Current measurement (l)	On the electrical consumers
Fill / drain (m)	On the system
Oil lubrication of the compressor (px)	At compressor oil measurement fittings

> **Zeroing the pressure sensors:**

Carry out a zeroing of the pressure sensors before every measurement.

**i** The measurement values can be falsified by a change in the position of the measuring instrument. After zeroing, the position of the measuring instrument must not be changed. Carry out zeroing before every measurement in order to compensate faulty positioning or long-term zero-point drift. Zeroing is only possible in a range of  $\pm 1 \text{ bar (rel) / } \pm 14.5 \text{ psi (rel)}$  or  $0 \dots 2 \text{ bar (abs) / } \pm 29 \text{ psi (abs)}$ .

- 1 Press **Set** function key.
  - **p=0** is displayed.
- 2 Press **OK** function key to carry out zeroing.

> **Connect refrigerant hoses:**

- ✓ The valve positioners are closed.
- 1 Connect refrigerant hoses for low-pressure side (blue) and high-pressure side (red) to the measuring instrument.
  - 2 Connect refrigerant hoses to the system.



**Warning!**

If the measuring instrument falls down or is exposed to any other comparable mechanical strain, the end connections of the refrigerant hoses can break off. The valve knobs can also be damaged, which can lead to further damage in the interior of the instrument, which is not visible externally. For this reason, replace the refrigerant hoses after any fall or comparable mechanical strain with new, undamaged refrigerant hoses. For your own safety, send the instrument to Testo customer service for technical testing.

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# Measuring



## Warning!



**Danger of injury due to highly pressurized hot, cold or poisonous refrigerants!**

- › Always secure the measuring instrument with the carabiner suspension hook before pressurizing the instrument, in order to prevent falls (danger of breakage).
- › Before each measurement, ensure that the refrigerant hoses are intact and correctly connected. Do not use tools to connect the hoses. Connect the hoses only hand-tight (max. torque 5.0Nm/ 3.7ft\*lb).
- › Wear protective glasses and protective gloves.
- › Observe permitted pressure range!

## › Measuring:

- ✓ The steps described in the chapter "Preparing for measurement" have been completed.
- 1** Check whether customer / system (assignment of the readings by saving), pressure display (absolute / relative) and refrigerant are correctly selected, see the chapter "Setting the instrument".
- 2** Pressurize the measuring instrument.
- 3** Read off readings or monitor trend display (next to the readings):
- i** With zeotropic refrigerants, the evaporation temperature **to** is displayed after the complete evaporation / is displayed after the complete condensation **tc**.

**Key functions**

-   : Changing the reading display. The availability of the individual reading displays and the parameters varies depending on the availability of the measuring signal (probe / accessories connected, radio probe logged on, probe assigned).

<b>Evaporation pressure <math>p_o</math></b> <b>Refrigerant evaporation temperature <math>t_o</math></b>	<b>Condensation pressure <math>p_c</math></b> <b>Refrigerant condensation temperature <math>t_c</math></b>
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<b>Evaporation pressure <math>p_o</math></b>	<b>Condensation pressure <math>p_c</math></b> Right probe socket measuring signal
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<b>Temperature <math>t_1</math></b> <b>Temperature <math>t_2</math></b>	<b>Temperature <math>t_3</math></b> <b>Temperature <math>t_4</math></b>
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<b>Refrigerant evaporation temperature <math>t_o</math></b> <b>Measured temperature <math>t_{oh}</math></b>	<b>Refrigerant condensation temperature <math>t_c</math></b> <b>Measured temperature <math>t_{cu}</math></b>
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<b>Refrigerant evaporation temperature <math>t_o</math></b> <b>Overheating <math>\Delta t_{oh} / t_{sh}</math></b>	<b>Refrigerant condensation temperature <math>t_c</math></b> <b>Undercooling <math>\Delta t_{cu} / t_{sc}</math></b>
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- Function key **Hold/Min/Max** : Record readings, display min.-/max. readings (since last switch on or last reset).
- Function key **RESET** : Reset min. / max. readings. Only available if min. or max. readings are displayed.
- When critical pressure of refrigerant is reached: Reading and display illumination blink.

> **Saving readings:**

- 1 Press the **Save** function key.
- 2 Check if the customer / system are correctly selected,  
If necessary: Change customer using   change system using 
- 3 Press **OK** function key to save.

> **Saving series of readings:**

- 1 Press the **Save** function key.
- 2 Check if the customer / system are correctly selected,  
If necessary: Change customer using   change system using 
- 3 Press the **Serial?** function key.



- 4 Enter parameters cycle/cycle length (min. 2s, max. 60min) and duration (in hours/minutes) for series of readings: Set value using ▲▼ change between parameters using ◀▶ function keys.
- 5 Confirm the entry with the **OK** function key.  
With active PIN request, see the chapter "Setting the instrument":
  - › Enter PIN: Set number using ▲▼, change between the numbers using ◀▶ function keys.
- 6 Start the series of readings with the **Start** function key.

## Performing actions

### > Fill or drain:

In principle, the fill and drain actions are the same in terms of process, only the values change conversely.

**i** The maximum display range for the mass **m** is: -999.9 ..9999.9 kg or. -9999 ..99999 g/lb/oz . Before starting the action, check the correct setting of the unit, and in case of doubt switch to the "larger" unit (kg/lb), as no measurement value is displayed if the display range is exceeded or fallen short of (display **uuuuu/ooooo**).

- 1 Press the **Action** function key.
- 2 Using ◀▶ function keys, select **Fill** or **Vacate** and confirm entry using **OK** function key.
- 3 Using ▲▼ set customer, set system using ◀▶ function keys and confirm entry using **OK** function key.
- 4 Set refrigerant using ▲▼ and confirm entry using **OK** function key.
- 5 Connect refrigerant scale\* to the right probe socket, switch on and confirm using the **OK** function key.

\* Option not available as standard. Please ask your local Testo subsidiary.

Only for the action Fill: An optional alarm can also be activated that will go off when a defined fill level is reached (mass **m** or overheating **T**) (**Alarm** blinks):

- › Open input menu (**Alarm?**). Set alarm value (▲▼): Set number, ◀▶ : change between the numbers). Activate alarm (**OK**).
- 6 Close bottle and set on the scale. Confirm with **OK** function key.
  - 7 Using the **Start** function key, start recording the filling or draining process and open the valve of the the bottle.

The option "Changing the reading display" is available, see chapter "Measuring".

- 8 If necessary: Change bottle (**Bot. 02**, continue with step 6).
- 9 After completion of the filling or draining process: Stop recording using the **Exit** function key and confirm with the **OK** function key.

#### > Macro (only testo 560):

The macro function serves to measure small pressures (max. 200hPa).

**i** Measurement on the low-pressure side (**pv**) takes place via the vacuum sensor (finer resolution). Note permissible pressure range!

- 1 Press the **Action** function key.
- 2 Using ◀ ▶ function keys, select **Macro** and confirm entry with the **OK** function key.
- 3 Using ▲ ▼ set customer, set system using ◀ ▶ function keys and confirm entry using **OK** function key.

The "Change reading display", "Display Hold/Max/Min", "Save reading / series of readings" options are available, see the chapter "Performing the measurement".

- 4 Create necessary connections and carry out macro pressure measurement.

#### > Evacuate (only testo 560):

**i** Measurement on the low-pressure side (**pv**) takes place via the vacuum sensor (finer resolution). Note permissible pressure range!

- 1 Press the **Action** function key.
- 2 Using ◀ ▶ function keys, select **Evacuation** and confirm entry with the **OK** function key.
- 3 Using ▲ ▼ set customer, set system using ◀ ▶ function keys and confirm entry using **OK** function key.
  - The refrigerant is automatically set to **H2O**.

The "Change reading display", "Display Hold/Max/Min", "Save reading / series of readings" options are available, see the chapter "Performing the measurement".

- 4 Create necessary connections and carry out evacuation of the system.

#### > Current measurement (current):

- 1 Press the **Action** function key.
- 2 Using ◀ ▶ function keys, select **Current** and confirm entry with the **OK** function key.

- 3 Connect clamp-on probe\* to the right probe socket and confirm using the **OK** function key.

\* Option not available as standard. Please ask your local Testo subsidiary.

The "Change reading display", "Display Hold/Max/Min", "Save reading / series of readings" options are available, see the chapter "Performing the measurement".

➤ **Calculate pressure difference (differential pressure):**

- 1 Press the **Action** function key.
- 2 Using ◀ ▶ function keys, select **Pressure difference** and confirm entry with the **OK** function key.
- 3 Connect oil pressure probe\* to the right probe socket and confirm using the **OK** function key.

\* Option not available as standard. Please ask your local Testo subsidiary.

- 4 Using the **px=0** function key, zero the differential pressure probe (unpressurized).

**i** A zeroing is only possible in the following area:  
±1bar (rel)/±14.5psi (rel) or 0...2bar (abs)/±29psi (abs).

- 5 Confirm using **OK** function key bring probe into circuit.

The "Change reading display", "Display Hold/Max/Min", "Save reading / series of readings" options are available, see the chapter "Performing the measurement".

# Maintaining the product

## > **Cleaning the housing:**

- › If dirty, clean the housing with a damp cloth (soap solution). Do not use aggressive cleaning products! Immediately remove oils, refrigerants and solvents from the housing.!

## > **Keep connections clean:**

- › Keep screw connections clean and free of grease and other deposits, clean with a moist cloth as required.

## > **Regularly replace refrigerant hoses**



### **Warning!**

If the measuring instrument falls down or is exposed to any other comparable mechanical strain, the end connections of the refrigerant hoses can break off. The valve knobs can also be damaged, which can lead to further damage in the interior of the instrument, which is not visible externally. For this reason, replace the refrigerant hoses after any fall or comparable mechanical strain with new, undamaged refrigerant hoses. For your own safety, send the instrument to Testo customer service for technical testing.

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## > **Remove oil residues:**

- › Carefully blow out oil residues in valve block using compressed air.

## > **Ensure accuracy of measurement:**

Testo customer service would be glad to further assist you if you so wish.

- › Check instrument regularly for leaks (Recommended: annually). Keep to the permissible pressure range!
- › Calibrate instrument regularly (Recommended: annually).

## > **Changing the batteries / rechargeable batteries / radio module:**

- ✓ Instrument is switched off.
- › Before removing the batteries: Read out memory to avoid data loss.
- 1 Fold out the suspension device and open the battery compartment (clip lock).
- 2 Remove empty batteries / rechargeable batteries, empty buffer battery or radio module.

- 3 Insert batteries / rechargeable batteries, empty buffer battery battery, radio module:
  - Push radio module into the module slot underneath the buffer battery (contact strip facing up).
  - Insert new batteries / rechargeable batteries (4x 1.5V, type AA, mignon, LR6). Observe the polarity!
  - Insert new buffer battery (1x 3V lithium CR2032) in the battery compartment. Observe the polarity (positive pole up)!
- 5 Close the battery compartment.
- 6 Set battery type and check / set date / time, see the chapter "First steps", "Switch instrument on".

> Replacing the valve or the positioner knob:



**Warning!**

Replacing of the positioner knob and the valve by the customer is not allowed. Send the instrument to Testo customer service.

# Tips and assistance

## Questions and answers

Question	Possible causes	Possible solution
🔋 flashes.	· Batteries are almost empty.	· Change batteries.
Instrument switches itself off.	· <b>Auto Off</b> function is switched on. · Residual capacity of the batteries is too low.	· Switch function off. · Change batteries.
<b>uuuu</b> illuminates instead of parameter display.	· Permitted measuring range was undershot.	· Keep to the permitted measuring range.
<b>oooo</b> illuminates instead of parameter display.	· Permitted measuring range was exceeded.	· Keep to the permitted measuring range.
<b>----</b> illuminates instead of parameter display.	· Probe not connected. · Probe break.	· Connect probe. · Replace probe.
Refrigerant escaping from valve positioner	· Valve positioner not tight	· Please contact your dealer or Testo customer service.

### testo 560 only

Evacuation function:

**oooo** is displayed instead of meas. parameter, despite vacuum is < 200 mbar

- connected pressure higher than atmospheric pressure
- protective valve of vacuum sensor has been triggered

- decrease pressure
- reset vacuum protection valve (see arrow) with a blunt object



If we could not answer your question, please contact your dealer or Testo Customer Service. For contact data, see back of this document or web page [www.testo.com/service-contact](http://www.testo.com/service-contact)

## Accessories and spare parts

Designation	Article no.
<b>Probe</b>	
Air probe, PT100	0609 1773
Surface probe, PT100	0609 1973
Immersion / penetration probe, PT100	0609 1273
Pipe wrap probe, PT100, with Velcro tape, 2.9m pipe	0609 5602
Pipe wrap probe, PT100, with spring clamping device	0609 5605
<b>Miscellaneous</b>	
Refrigerant scale *	0554 5606
Clamp-on probe *	0554 5607
Oil pressure probe *	0638 1742
easyKool PC software	0554 5604
USB data transmission cable, instrument - PC	0449 0047
Padlock for instrument security	0554 1747
Stainless steel adapter for NH <sub>3</sub> (ammonia), 3x 7/16" on 1/2", 1x 5/8" on 1/2"	0554 5561
Protocol printer, IrDA	0554 0547

\* Option not available as standard. Please ask your local Testo subsidiary.

For a complete list of all accessories, please refer to the product catalogs and brochures or look up our website at: [www.testo.com](http://www.testo.com)

