






testo 400 - Universal IAQ instrument

Short instructions



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1 About this document

- The instruction manual is an integral part of the instrument.
- Keep this documentation to hand so that you can refer to it when necessary.
- Please read this instruction manual through carefully and familiarize yourself with the product before putting it to use.
- Hand this instruction manual on to any subsequent users of the product.
- Pay particular attention to the safety instructions and warning advice in order to prevent injury and damage to the product.



You will also find further information about your testo 400 universal IAQ instrument in the online instruction manual on the Testo website, www.testo.com, under the product-specific download.

2 Safety and disposal

Take the **testo Information** document into account (accompanies the product).

3 Product-specific safety instructions

DANGER

Integrated magnet

Danger to life for persons with pacemakers!

- Keep a distance of at least 20 cm between your pacemaker and the measuring instrument.

ATTENTION

Integrated magnet

Damage to other devices!

- Keep a safe distance from devices that may be damaged by magnetism (e.g. monitors, computers, credit cards, memory cards, etc.).
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4 Use

The testo 400 is an instrument for measuring climate-related parameters. The testo 400 is particularly suitable for carrying out comfort level measurements for workplace evaluation and flow measurements in and on air conditioning systems.



The instrument is only to be used by qualified expert personnel.
The product must not be used in potentially explosive atmospheres!

5 Product description

5.1 Front view



5.2 Rear view



1	Camera	2	Differential pressure measurement connections (+/- marking)
3	Magnets	4	Attachment point for carrying strap
5	USB port/mains connection		

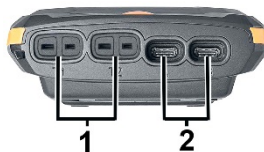
⚠ CAUTION

Make sure the pressure tube does not jump away from the connection socket.

Risk of injury!

- Ensure correct connection.

5.3 Probe connections



1	Thermocouple probe type K connection (T1 and T2)	2	Probe connection with TUC connector (A and B)
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6 Commissioning

6.1 Mains unit/energy storage unit

The measuring instrument is supplied with an energy storage unit.



Fully charge the energy storage unit before using the measuring instrument.



Plug the mains unit USB cable into the USB port on the side.



If the mains unit is connected, the measuring instrument is automatically powered via the mains unit.



Only charge the energy storage unit at an ambient temperature of 0 to 45 °C.

6.2 Switching the testo 400 on and off

Current status	Action	Function
Instrument off	Press and hold down the button (> 3 sec)	Instrument is switched on



When the measuring instrument is started for the first time, the setup wizard guides you through the following setting parameters step by step:

- **Language**
- **Country**
- **Units**
- **Wireless LAN**
- **Date and time**
- **Own company address**
- **E-mail account**
- **Customer registration**

After the setup wizard, a tutorial can be launched. The tutorial demonstrates the general operation and the most important functions of the measuring instrument using examples.

Current status	Action	Function
Instrument on	Press the button briefly (< 1 sec)	Instrument is switched to standby mode. The instrument is re-activated when the button is pressed again.
Instrument on	Press and hold down the button (> 1 sec)	Choice: press [OK] to switch the instrument off or press [Cancel] to cancel switch-off of the instrument.



The startup wizard and the tutorial can be executed again at any time in the main menu under **Setup wizard**.





Measuring values that have not been saved are lost when the measuring instrument is switched off.










6.3 Display – user interface



1		Open main menu
2		Display of the measurement period
3		Display of calculated measurement results
4		Number of connected probes
5		Reading for each probe

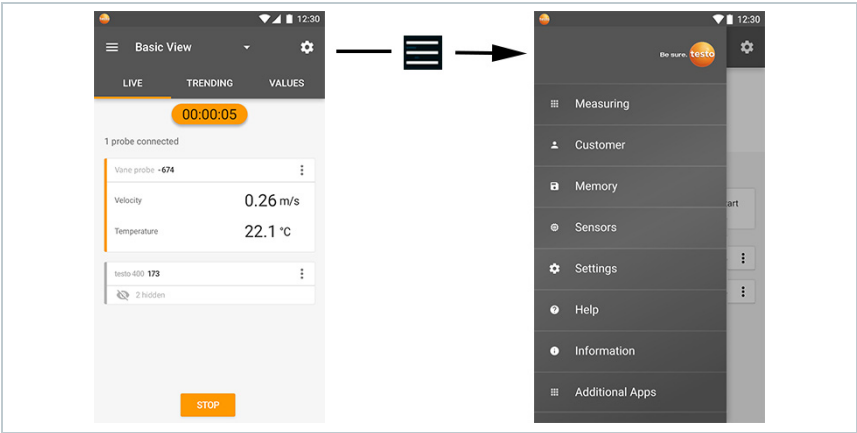
6		Can be controlled with different function keys
7		Instrument status bar
8		Options
9		Edit reading display

Further symbols on the user interface (without numbering)

	One level back
	Exit view
	Share report
	Search
	Favourite
	Delete
	More information
	Display report
	Multiple selection

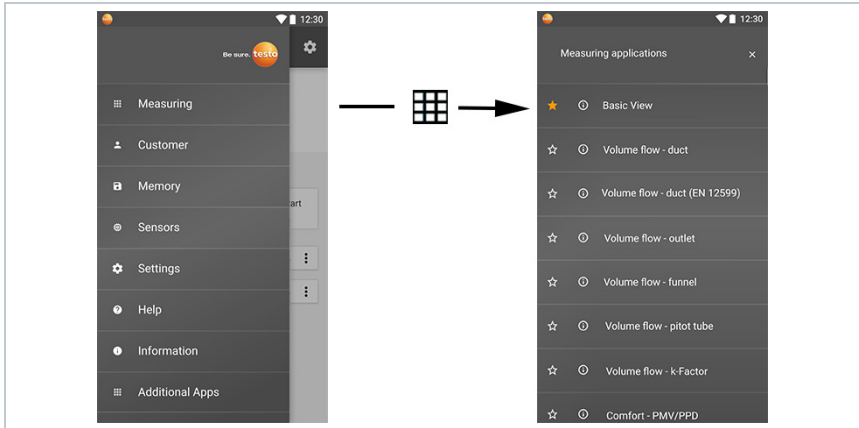
7 Using the product

7.1 Overview of main menu (☰)



Menu	Description
Measuring	List with various application-specific menus
Customer	Create, edit and delete customer and system information.
Memory	Call up, edit, send, export (different formats possible) and delete measurements that have been carried out.
Sensors	Overview of integrated sensors and connected probes. <ul style="list-style-type: none"> - Adjustment via the input of calibration information - Damping - Serial number - Firmware version - Battery level (Bluetooth® probe)
Settings	Instrument settings <ul style="list-style-type: none"> - Language and country - Date & Time - Units - Own company address - Wireless LAN
Help & Information	Aids <ul style="list-style-type: none"> - Device Registration - Device information (serial number, app version, firmware version, update information) - Tutorial - Instruction manual - Startup wizard
Additional Apps	Additional applications <ul style="list-style-type: none"> - Settings - Camera - Clock - E-mail - Gallery - Browser - Calendar - Pocket calculator - Downloads - QuickSupport - File manager

7.2 Overview of measurement types (📊)



Measuring applications

Basic view

Volume flow – Duct

Volume flow – Duct traverse (EN 12599)

Volume flow – Duct traverse (ASHRAE 111)

Volume flow – Outlet

Volume flow – Funnel

Volume flow – Pitot tube

Volume flow – k-factor

Comfort – PMV/PPD (EN 7730 / ASHRAE 55)

Discomfort – Draft rate

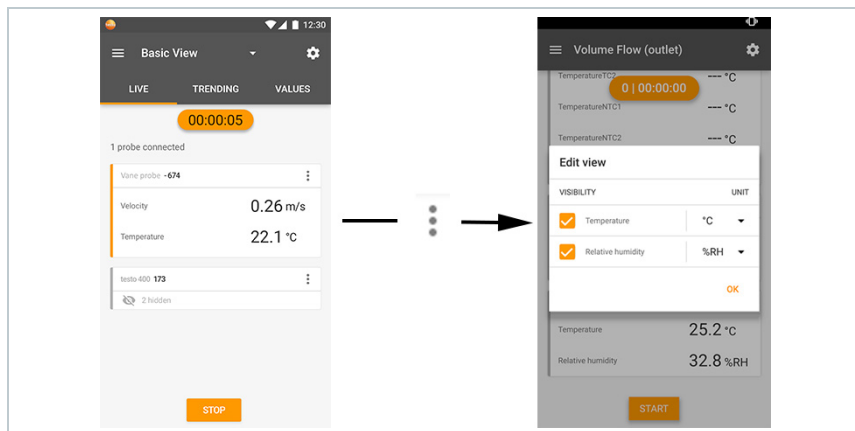
Differential temperature (ΔT)

Differential pressure (ΔP)



You will also find further information about the individual measurement types in the online instruction manual on the Testo website, www.testo.com, under the product-specific download.

7.3 Overview – editing the reading display (:)



Menu	Description
Edit view	The display can be edited for each connected probe. The available measurement parameters can be selected and deselected and the unit for each parameter can be adjusted. These changes are saved for the next measurement.
Zero pressure sensor	Once the testo 400 has been brought into the operating position for a differential pressure measurement, the sensor should be zeroed against ambient air.
Adjusting Degree of Emission	If the testo 805i is connected, the selection of emissivity appears here. This can be set individually depending on the measuring surface.

7.4 Getting the readings in 5 steps

- 1 Switch instrument on: Press button > 1 sec.



- 2 Connect probe via cable or Bluetooth®.



- 3 Place probe in the application.



- 4 Start measurement and read off measuring values.



5 Save and send readings

You will also find further information about your testo 400 universal IAQ instrument in the online instruction manual on the Testo website, www.testo.com, under the product-specific download.

8 Software

The testo 400 has a USB port, via which the measuring instrument can be connected to the PC.



Knowledge of Windows® operating systems is required to work with the software.

8.1 Purpose

The testo DataControl measurement data management and analysis software enhances the functionality of the testo 400 measuring instrument with lots of useful functions:

- Manage and archive customer data and measuring point information
- Read out, evaluate and archive measurement data
- Presenting readings in graphic form
- Create professional measurement reports from the existing measurement data
- Conveniently add pictures and comments to measurement reports
- Data import from and data export to the measuring instrument

8.2 System requirements



Administrator rights are required for installation.

Operating system

The software can be run on the following operating systems:

- Windows® 7
- Windows® 8
- Windows® 10

Calculator

The computer must meet the requirements of the operating system in each case. The following requirements must also be met:

- Interface USB 2 or higher
- DualCore processor with minimum 1 GHz
- Minimum 2 GB RAM
- Minimum 5 GB available hard disk space
- Screen with a resolution of at least 800 x 600 pixels

8.3 First steps

8.3.1 Installing the software/driver

- 1 Insert the program CD into the CD-ROM drive of the computer.
or
Download the program (www.testo.com/download-center) and unpack the zip file using a suitable compression tool.
 - 2 Launch the **TestoSetup.exe** file.
 - 3 Follow the instructions of the installation wizard.
 - 4 Click on [**Finish**] to complete the software installation.
 - 5 Once the software installation is completed, connect the instrument to the computer to continue with the driver installation.
 - 6 Use the USB-cable to connect the instrument to the PC.
- The connection will be established.

8.3.2 Launching testo DataControl



The user interface of the software is opened in the language of the operating system, if it is supported. If the operating system language is not supported, the user interface will be in English.

Windows® program menu

Windows® 7:

Click on **[Start]** | **All Programs** | **Testo** | **testo DataControl** (double-click on left mouse button).

Windows® 8:

Click on **[Start]** | Right mouse button | **Search** (Enter the application name in the search field) | **testo DataControl** (double-click on left mouse button).

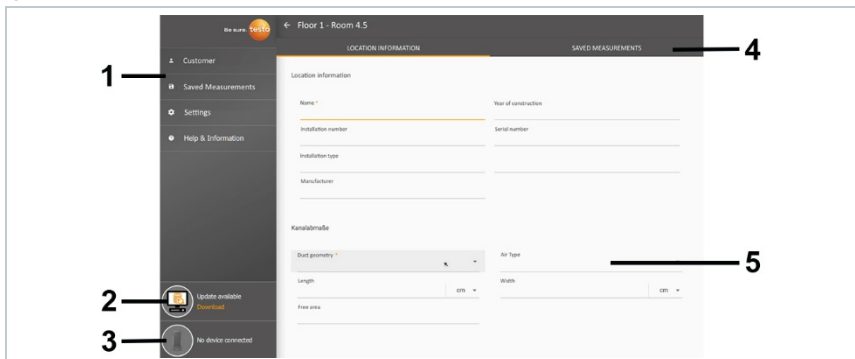
Windows® 10:

Click on **[Start]** | **All Apps** | **Testo** | **testo DataControl** (double-click on left mouse button).

testo DataControl launches automatically.


8.4 Using the product

8.4.1 Overview

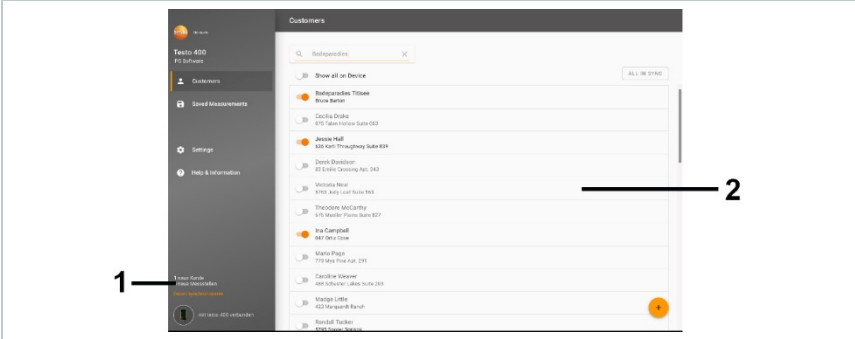


1	Main menu	3	Connection status of the measuring instrument
2	Update notification	4	Multi-function bar
5	Display area		

Operation of the software is based on the same functional principle as the instrument firmware for the testo 400.

 You will also find further information about testo DataControl in the online instruction manual on the Testo website, www.testo.com, under the product-specific download.

8.4.2 Synchronizing data



1	Synchronization status	2	Display area
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The data can be synchronized selectively per customer or as a whole across all customers simultaneously.

9 Technical data

General

Feature	Value
Probe connections	<ul style="list-style-type: none">- 2x type K thermocouple- 2x Testo Universal Connector (TUC) for connecting cable probes to the corresponding plug- 1x differential pressure- 1x absolute pressure (integrated)- 4x Bluetooth® probe or testo Smart Probe
Interfaces	<ul style="list-style-type: none">- Mini USB for connection to PC or for battery charging with mains unit- WLAN 802.11 b/g/n- Bluetooth® 4.0
Internal memory capacity	2 GB (corresponds to 1,000,000 readings)
Rechargeable battery life	10 hours of continuous operation / 3200 mAh
Measuring cycle	0.5 sec / display update 1 sec

Feature	Value
Operating temperature	-5 to +45 °C
Storage temperature	-20 to +60 °C
Charging temperature	0 to +45 °C
Dimensions in mm	186 x 89 x 41 (L x W x H)
Housing material	PC, ABS, TPE
Weight	500 g
Protection class	IP 40
Display	5.0 inch HD display (1280*720 pixels)
Camera	- Front camera 5.0 MP - Rear camera 8.0 MP

Integrated sensors (at 22 °C, ±1 digit)

Characteristics	Measuring range	Accuracy	Resolution
Temperature (TC type K) ¹	-200 to +1370 °C	± (0.3 °C + 0.1% of m.v.) Internal cold junction measurement: ± 0.5 °C	0.1 °C
Temperature (NTC)	-40 to +150 °C	±0.2 °C (-25.0 to +74.9 °C) ±0.4 °C (-40.0 to -25.1 °C) ±0.4 °C (+75.0 to +99.9 °C) ±0.5% of m.v. (rest)	0.1 °C
Differential pressure ²	-100 to +200 hPa	± (0.3 Pa + 1% of m.v.) (0 to 25 hPa) ±(0.1 hPa + 1.5% of m.v.) (25 to 200 hPa)	0.001 hPa
Absolute pressure	+700 to +1100 hPa	± 3 hPa	0.1 hPa

¹ The accuracy information applies in an adjusted, stable temperature state. Plugging in the mains unit, charging the battery or adding digital probes can distort this temporarily, and additional errors may occur.

² The accuracy specification applies immediately after zeroing of the sensor. For long-term measurements, mains operation with fully-charged battery is recommended.

9.1 Product-specific approvals

Please find the current approvals in the attached **Approval and Certification** document(s).

9.2 Contact and support

If you have any questions or need further information, please contact your dealer or Testo Customer Service. For contact details, please visit www.testo.com/service-contact.



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