



**testo 110 – Temperature meter for NTC and Pt100
0560 0110**

Instruction manual



Contents

1	About this document	3
2	Safety and disposal.....	3
2.1	Security	3
2.2	Disposal	4
3	Product-specific information.....	5
4	Intended use	5
5	Product description	6
5.1	Instrument overview	6
6	First steps	7
6.1	Inserting / changing batteries	7
6.2	Getting to know the product	8
6.2.1	Connecting probes	8
6.2.2	Switching the instrument on and off	8
6.2.3	Switching the display illumination on and off	8
6.3	Establishing a Bluetooth® connection	9
6.3.1	Establishing a Bluetooth® connection to the testo Smart App	10
7	Using the product.....	11
7.1	Controls on the measuring instrument.....	11
7.1.1	Implementing settings	12
7.1.2	Opening configuration mode	13
7.1.3	Setting the unit	13
7.1.4	Setting alarm thresholds.....	14
7.1.5	Setting the alarm sound	14
7.1.6	Carrying out a reset of the setting menus.....	14
7.1.7	Carrying out a reset of the measuring instrument.....	14
7.2	Measuring	15
7.2.1	Freezing a reading, displaying the maximum/minimum value	15
7.2.2	Resetting maximum/minimum values.....	15
7.2.3	Carrying out multi-point mean calculation	15
7.2.4	Carrying out continuous mean calculation.....	16
7.3	Printing data	17
8	Controls via testo Smart App.....	18
8.1	Overview of operating controls.....	18
8.2	App options	20

Contents

8.2.1	Setting the language.....	20
8.2.2	Displaying App Info.....	20
8.2.3	Displaying the tutorial	20
8.3	Application menus	21
8.3.1	Selecting an application menu	21
8.3.2	Setting favourites.....	21
8.3.3	Displaying information about an application	21
8.4	Making measuring instrument settings	22
8.4.1	Configuring the measuring instrument menu	24
8.4.2	Setting Auto Off	25
8.4.3	Activating damping	25
8.4.4	Configuring alarms.....	26
8.4.5	Setting the surface increment	26
8.5	Display of the readings	27
8.6	Adjusting the view.....	27
8.7	Exporting readings.....	28
8.7.1	Excel (CSV) Export.....	28
8.7.2	PDF Export.....	29
8.8	Perform Firmware update	30
9	Maintaining the product	31
9.1	Inserting / changing batteries.....	31
9.2	Cleaning the instrument.....	31
10	Technical data for testo 110.....	32
11	Tips and assistance.....	34
11.1	Questions and answers	34
11.2	Accessories and spare parts.....	35
11.2.1	Compatible NTC probes	35
11.2.2	Compatible Pt100 probes (digital).....	35

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.
- Always use the complete original instruction manual.
- 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.

2 Safety and disposal

2.1 Security

General safety instructions

- Only operate the product properly, for its intended purpose, and within the parameters specified in the technical data.
- Do not apply any force.
- Do not operate the instrument if there are signs of damage to the housing or connected cables.
- Dangers may also arise from objects to be measured or the measuring environment. Always comply with the locally valid safety regulations when carrying out measurements.
- Do not store the product together with solvents.
- Do not use any desiccants.
- Only perform maintenance and repair work on this instrument that is described in this documentation. Follow the prescribed steps exactly when doing the work.
- Use only original spare parts from Testo.

Batteries

- Improper use of batteries may cause the batteries to be destroyed, or lead to injury due to current surges, fire or escaping chemicals.
- Only use the batteries supplied in accordance with the instructions in the instruction manual.
- Do not short-circuit the batteries.
- Do not take the batteries apart and do not modify them.

2 Safety and disposal

- Do not expose the batteries to heavy impacts, water, fire or temperatures in excess of 60 °C.
- Do not store the batteries in the proximity of metal objects.
- In the event of contact with battery acid: rinse affected areas thoroughly with water, and if necessary consult a doctor.
- Do not use any leaky or damaged batteries.

Warnings

Always pay attention to any information denoted by the following warnings. Implement the precautionary measures specified!

 **DANGER**

Risk of death!

 **WARNING**

Indicates possible serious injury.

 **CAUTION**

Indicates possible minor injury.


CAUTION

Indicates possible damage to equipment.

2.2 Disposal

- Dispose of faulty rechargeable batteries and spent batteries in accordance with the valid legal specifications.
- At the end of its useful life, deliver the product to the separate collection point for electric and electronic devices (observe local regulations) or return the product to Testo for disposal.



-  WEEE Reg. No. DE 75334352

3 Product-specific information

- Do not carry out measurements on live components.
- Do not expose handles and feed lines to temperatures in excess of 70°C unless they are expressly approved for higher temperatures. Temperature specifications on probes/sensors refer only to the measuring range of the sensor system.
- Only open the measuring instrument if this is expressly described in the documentation for the purposes of maintenance or servicing.

4 Intended use

The testo 110 is a compact measuring instrument for measuring temperatures. It is intended for indoor use only.

The product is designed for the following tasks/areas:

- Food sector
- Laboratory sector

The product should not be used in the following areas:

- In potentially explosive atmospheres
- For diagnostic measurements in the medical field



The following product components are designed for continuous contact with foodstuffs in accordance with Regulation (EC) 1935/2004:



from the tip of the measuring probe up to 1 cm before the probe handle or the plastic housing. If provided, the information about penetration depths in the instruction manual or the mark(s) on the measuring probe should be noted.

5 Product description

5.1 Instrument overview



1	Control keys	2	Display
3	Socket for NTC or Pt100 type probe with TUC connector	4	Speaker for alarm sound
5	Battery compartment		

Explanation of icons

	Refer to instruction manual
--	-----------------------------

6 First steps

6.1 Inserting / changing batteries


⚠ WARNING

Serious risk of injury to the user and/or destruction of the instrument. There is a risk of explosion if the batteries are replaced with ones that are the wrong type.






- Only use non-rechargeable alkaline batteries.

- ✓ The instrument is switched off.
- 1 Open the battery compartment (on the back of the instrument) via the snap lock.
- 2 Insert or replace batteries (3 x AA alkaline batteries).
Observe the polarity!
- 3 Close the battery compartment.



 When not in use for a long period: Take out the batteries.

Symbol explanation

	Do not allow children under 6 years of age to play with batteries.
	Do not throw batteries in the trash.
	Do not charge batteries.
	Do not place batteries near fire.
	Batteries are recyclable.

6.2 Getting to know the product

6.2.1 Connecting probes

Plug-in probes can be connected via the probe socket(s) on the head of the instrument.

- 1 Plug the probe's connector into the measuring instrument's probe socket.

6.2.2 Switching the instrument on and off

Switching on

- 1 Press the **On/Off** key (0.5 sec).
 - ▶ Measurement view is opened:

The current reading is displayed or ---- lights up if no reading is available.

Switching off

- 1 Press and hold down (2 sec) the **On/Off** key.
 - ▶ The display turns off.

6.2.3 Switching the display illumination on and off

- ✓ The measuring instrument is switched on.
- 1 Press and hold down (2 sec) the **MENU/ENTER** key.
 - ▶ The display illumination is switched on or off.

6.3 Establishing a Bluetooth® connection



The instrument can be connected to the **testo Smart App** via Bluetooth® connection

- ✓ The measuring instrument is switched on.

- ▶ To enable the Bluetooth® connection for the first time, press and hold (approx. 2 sec) the ◀ key.

While the instrument is trying to establish a Bluetooth® connection, the ✖ icon flashes on the display.

Bluetooth® remains enabled until it is disabled manually by pressing and holding (approx. 2 sec) the ◀ key.

The measuring instrument saves the Bluetooth® setting and, depending on the configuration, starts up with Bluetooth® enabled or disabled.



6.3.1 Establishing a Bluetooth® connection to the testo Smart App




To establish a connection via Bluetooth®, you need a tablet or smartphone with the Testo Smart App already installed on it.

You can get the App for iOS instruments in the App Store or for Android instruments in the Play Store.

Compatibility:

Requires iOS 13.0 or later/Android 8.0 or later, requires Bluetooth® 4.2.



- ✓ Bluetooth® is enabled in the measuring instrument.
 - 1 Open the testo Smart App.
 - ▶ The app automatically searches for Bluetooth® devices in the vicinity.
 - 2 In the **Sensors** menu, check whether the required instrument is connected.
 - ▶ If necessary, switch the instrument to be connected off and on again to restart the connection module.
 - ▶ When the testo Smart App is connected to the measuring instrument, the  icon appears on the measuring instrument display.
- The measuring instrument automatically synchronizes its date and time settings with the testo Smart App.
- Once connected successfully, the current measured value from the measuring instrument appears on the app screen in the Live view.

7 Using the product

7.1 Controls on the measuring instrument

- ✓ The instrument is switched on.
- ✓ The **testo Smart App** is installed on the smartphone and connected to the instrument via Bluetooth®.
- ▶ Settings and controls are implemented either on the instrument or via the app.



If the measuring instrument is connected to the **testo Smart App**, settings can only be made via the app. The measuring instrument then remains in the measurement view and other menus, e.g. Settings, cannot be opened.



1	On/Off / MODE/END key
2	Bluetooth® / ◀ key
3	Battery indicator
4	Selected unit
5	Current measured value
6	Print / ▶ key
7	Illumination / MENU/ENTER key

7.1.1 Implementing settings

Selecting, opening and setting functions

- 1 Press the relevant key to select the functions






Secondary assignment (long press)




All keys with a grey corner have a secondary assignment, which can be selected by pressing and holding the key for a longer time (2 sec).

Adjustable functions



Ensure correct settings: all settings are transferred immediately. There is no Cancel function.

Function	Setting options/comments
Bluetooth® (long press) 	Switch the Bluetooth® connection on or off
Arrow left 	Freeze reading (HOLD function), display maximum/minimum value. In configuration mode: Decrease value, select option
On/Off (long press) 	Switches the instrument on or off
MODE/END 	Select or end multi-point or continuous mean calculation.
Display illumination (long press) 	OFF (display illumination not active) or ON (display illumination active)

Function	Setting options/comments
MENU/ENTER 	Open configuration mode Start continuous measurement / record multi-point readings (Operation also possible directly on measuring instrument if it is connected to the app) In configuration mode: Confirm input
Print (long press) 	Output readings via external printer
Arrow right 	In configuration mode: Increase value, select option

7.1.2 Opening configuration mode

- ✓ The instrument is switched on and is in the measurement view.
- 1 Press **MENU/ENTER** until the display changes.
- ▶ The instrument is now in configuration mode.
- ▶ Press **MENU/ENTER** to switch to the next function. You can leave configuration mode at any time. To do this, press **MODE/END** until the instrument has changed to the measurement view. Any changes that have already been made in configuration mode will be saved.

7.1.3 Setting the unit

- ✓ Configuration mode is open, "UNITS" is displayed.
- 1 Press ◀ / ▶ to choose between metric ("METR") and imperial ("IMPER") units of measurement and confirm with **MENU/ENTER**.
- ▶ The currently set unit flashes.
- 2 Press ◀ / ▶ to set the required unit and confirm with **MENU/ENTER**.

7.1.4 Setting alarm thresholds

- ✓ Configuration mode is open, “🔔 min” is displayed.
- 1 Press ◀ / ▶ to set the lower alarm threshold value and confirm with **MENU/ENTER**.
- ▶ “🔔 max” is displayed.
- 2 Press ◀ / ▶ to set the upper alarm threshold value and confirm with **MENU/ENTER**.

7.1.5 Setting the alarm sound

- ✓ Configuration mode is open, “🔊” is displayed.
- 1 Press ◀ / ▶ to enable/disable the alarm sound (“ON” / “OFF”) and confirm with **MENU/ENTER**.

7.1.6 Carrying out a reset of the setting menus

- ✓ Configuration mode is open, “M. RES” (menu reset) is displayed.
- 1 Press ◀ / ▶ to select the required option and confirm with **MENU/ENTER**:
 - NO: Do not carry out reset.
 - YES: Carry out reset. All concealed menus that were hidden via the testo Smart App are displayed again.
- ▶ The instrument returns to measurement view.

7.1.7 Carrying out a reset of the measuring instrument



- ✓ Configuration mode is open, “RESET” is displayed.
- 1 Press ◀ / ▶ to select the required option and confirm with **MENU/ENTER**:
 - NO: Do not carry out reset.
 - YES: Carry out reset. The instrument is reset to the factory settings.
- ▶ The instrument returns to measurement view.

7.2 Measuring

- ✓ The instrument is switched on and is in the measurement view.
- 1 Put the probe into position and take the readings.




With the alarm function on and if the alarm threshold is exceeded or undershot:

- Alarm icon flashes and a signal tone is emitted until any key is pressed.
- An arrow symbol at the bottom left indicates whether the upper  or lower  alarm threshold has been exceeded or undershot.



7.2.1 Freezing a reading, displaying the maximum/minimum value

The current reading can be frozen. The maximum and minimum values since the last time the instrument was switched on in the standard view or during a multi-point or continuous measurement can be displayed.

- 1 Press  several times until the desired value is displayed.
- ▶ The following are displayed in turn:
 - Hold: frozen measured value
 - Max: Maximum value
 - Min: Minimum value
 - Current measuring value

7.2.2 Resetting maximum/minimum values



The maximum/minimum values of all channels can be reset to the current reading.

- 1 Press  several times until Max or Min is shown.
- 2 Hold down  (approx. 2 s).
- ▶ All maximum and minimum values are reset to the current reading.




7.2.3 Carrying out multi-point mean calculation

- 1 Press **MODE/END**.
- ▶  flashes.

7 Using the product

- ▶ The number of readings recorded is displayed in the upper line, while the current reading is displayed in the lower line.
- 2 To record readings (in the desired quantity):
Press **MENU/ENTER** (several times).
- 3 To end measurement and calculate the mean value:
Press **MODE/END**.
- ▶  and  flash.
The number of measured values and the calculated multi-point mean value are displayed.
- 4 To switch back to the measuring view:
Press **MODE/END**.

7.2.4 Carrying out continuous mean calculation

- 1 Press **MODE/END** twice.
- ▶  flashes.
- ▶ The elapsed measuring time (mm:ss) is displayed in the upper line, while the current reading is displayed in the lower line.
- 2 Start measurement:
Press **MENU/ENTER**.
- 3 To interrupt/continue measurement:
Press **MENU/ENTER** each time.
- 4 To end measurement and calculate the mean value:
Press **MODE/END**.
- ▶  and  flash.

The measurement period and the calculated continuous mean value are displayed.

- 5 To switch back to the measuring view:

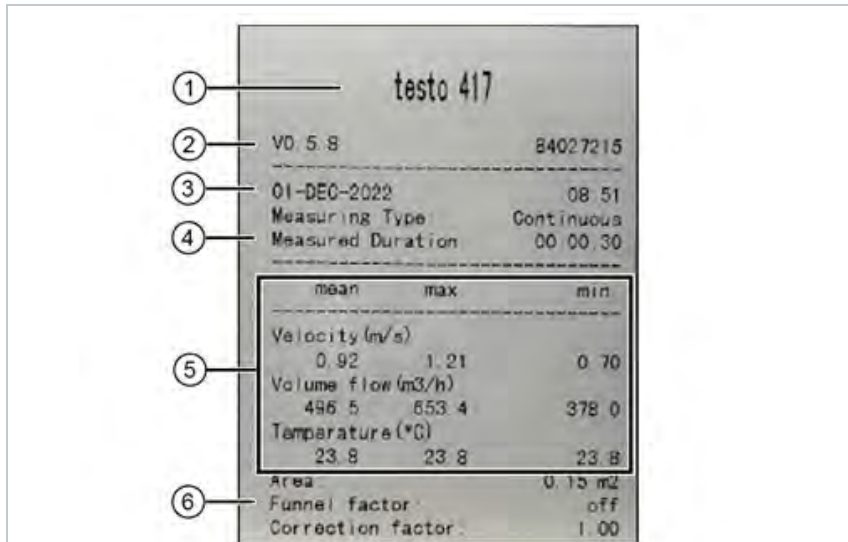
Press **MODE/END**.

7.3 Printing data

- ✓ A testo Bluetooth®/IRDA printer (order no. 0554 0621) is connected via Bluetooth and switched on.

i When first setting up a connection between the testo measuring instrument and the testo Bluetooth®/IRDA printer, the initialization phase can last up to 30 seconds.

- 1 Press and hold ► to transfer the data to the printer.
- Data is printed out (LED on the printer lights up green).



1	Instrument name	2	Firmware version and serial number
3	Date and time of printout	4	Measuring type and measured duration
5	Measurement values	6	Measurement parameters










8 Controls via testo Smart App


If the measuring instrument is connected to the testo Smart App, it is primarily operated via the app. The measuring instrument remains in the measurement view and settings menus cannot be opened on the measuring instrument.


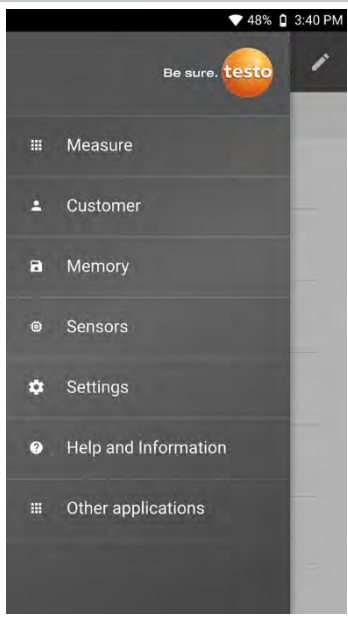






8.1 Overview of operating controls

1	Choice of applications	2	Switch between the views (live, graphic, table)
3	Display of connected measuring instruments including readings	4	Start/stop
5	Measurement configuration (the menu changes depending on the measuring instrument connected and the application selected)	6	Configuration of the measuring instrument

Additional symbols on the user interface of the app (not numbered)


	One level back
	Exit view
	Share measurement data/report
	Searching
	Favourite
	Deleting
	Further information
	Display report
	Multiple selection

The **Main menu** can be accessed via the  icon at top left. To exit the main menu, select a menu or right-click on the guided menus. The last screen displayed is shown.

	Measure	
	Customer	
	Memory	
	Sensors	
	Settings	
	Help and Information	
	Other applications	

8.2 App options


8.2.1 Setting the language

- 1 | Click on .
- 2 | Select **Settings**.
- 3 | Select **Language**.
 - ▶ A selection list is displayed.
- 4 | Select the required language.
 - ▶ The language is changed.

8.2.2 Displaying App Info




In App Info you can find the version number of the installed App.

- 1 | Click on .
- 2 | Select **Help and Information**.
- 3 | Select **Instrument information**.
 - ▶ The version number of the app and the ID are displayed.

8.2.3 Displaying the tutorial




The tutorial guides you through the first steps in operating the testo Smart App.




- 1 | Click on .
- 2 | Select **Help and Information**.
 - ▶ The tutorial is displayed. In the tutorial, swipe to display the next page.
- 3 | Click **X** to quit the tutorial.

8.3 Application menus



8.3.1 Selecting an application menu

- 1 | Click on .
- ▶ | A selection of menus for various applications is displayed.
- 2 | Select the required application.
- ▶ | Your selected application is displayed.



8.3.2 Setting favourites

- 1 | Click on .
- ▶ | A selection of menus for various applications is displayed.
- 2 | Select the application you want to set as a favourite.
- 3 | Click on .
- ▶ | The star is displayed in orange: .

8.3.3 Displaying information about an application

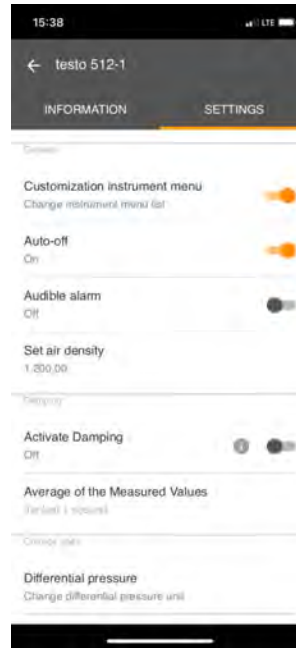
- 1 | Click on .
- ▶ | A selection of applications is displayed.
- 2 | Click on .
- ▶ | The information about an application is displayed.

8.4 Making measuring instrument settings

- ✓ The measuring instrument is connected to the testo Smart App.
 - 1 Click on .
 - ▶ The main menu opens.
 - 2  Click on **Sensors**.
 - ▶ The **Sensors** menu opens.
 - 3 Click on the required measuring instrument.
 - ▶ Information about the model, order number, serial number and firmware version is displayed.
 - 4 Click on the **Settings** tab.
 - ▶ A window with settings for the respective measuring instrument opens.
- In addition to the settings that can be performed on the measuring instrument, additional settings can also be made.

- 5 Click on the blue text under a settings heading to activate or disable settings or to open an input window to enter a specific value or select a unit.

For details on the settings options, see the following sub-sections.



- ▶ Changes to the measuring instrument settings in the app are transferred directly to the measuring instrument. Synchronization with the app is confirmed on the measuring instrument via “SYNC DONE”.



8.4.1 Configuring the measuring instrument menu

The testo Smart App can be used to set which settings menus should be available or hidden on the measuring instrument itself.

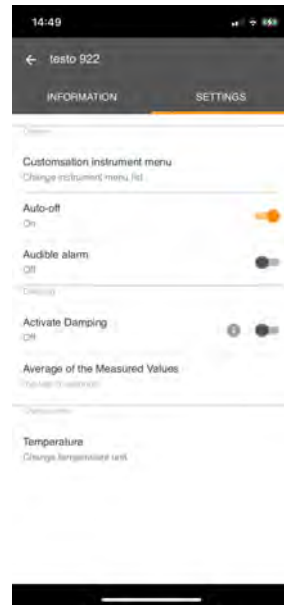
- ✓ The **Settings** tab in the **Sensors** menu is open.

- 1 - Activate **Customization instrument menu** and click on the blue text **Change instrument menu list** under the settings heading.

- ▶ The **Customization instrument menu** dialogue opens.


On the measuring instrument, the following menus can be displayed or hidden:

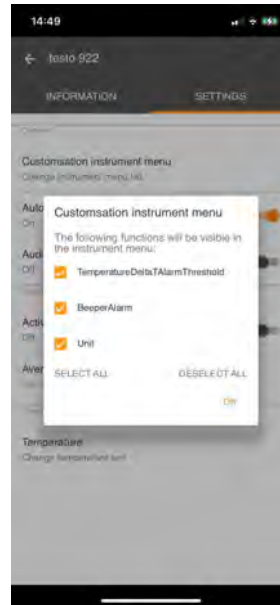
- Configuring alarms
- Alarm sound on/off
- Setting the unit
- Pitot tube factor (testo 512-1 only)
- Absolute pressure (testo 512-1 only)



- 2 Deactivate the checkboxes for the measuring instrument menus that are no longer to be displayed on the measuring instrument itself.

- ▶ The menus belonging to the deactivated entries will no longer be displayed in the measuring instrument menu after the next synchronization.

 These settings can be reset via the menu reset "M.RES" and then all settings menus will be displayed on the measuring instrument again.




8.4.2 Setting Auto Off

- ✓ The **Settings** tab is open.
- 1 Enable **Activate Auto-off** using the slider.
- ▶ The measuring instrument switches off automatically if no key is pressed for 10 min.

Exception: a frozen reading is shown on the display ("Hold" is displayed).


8.4.3 Activating damping

 If the readings fluctuate wildly, it is advisable to damp the readings.

- ✓ The **Settings** tab is open.
- 1 Enable **Activate damping** using the slider.
- 2 Click on **Average of the measured values**.

- ▶ The window for Average of the measured values opens.
- 3 Enter a value between 2 and 20 measured values.
- ▶ Changes to the measuring instrument settings in the app are transferred directly to the measuring instrument. Synchronization with the app is confirmed on the measuring instrument via "SYNC DONE".

8.4.4 Configuring alarms

- ✓ The standard view with the **LIVE** tab is open.
- 1 Click on  .
- 2 Select **Alarm configuration**.
- ▶ The menu with the overview of alarms that can be activated opens.
- 3 Click on the checkbox to activate a specific alarm.
- 4 Click on **EDIT**.
- ▶ The input window for activating and defining upper and lower warning and alarm values is displayed.
- 5 Click **OK** to confirm the settings.
- ▶ Changes to the measuring instrument settings in the app are transferred directly to the measuring instrument. Synchronization with the app is confirmed on the measuring instrument via "SYNC DONE".

8.4.5 Setting the surface increment



Surface probes withdraw heat from the measured surface immediately after the initial contact. As a result, the measurement result is lower than the actual surface temperature without the probe (the reverse is true for surfaces that are colder than the probe). This effect can be corrected by an increment in % of the reading.

- ✓ The **Settings** tab is open.
- 1 Activate **Surface increment** using the slider.
- 2 Enter the value for the surface increment and confirm with **OK** .

- ▶ The changes are transferred to the measuring instrument and synchronization with the app is confirmed on the measuring instrument via “SYNC DONE”.

8.5 Display of the readings



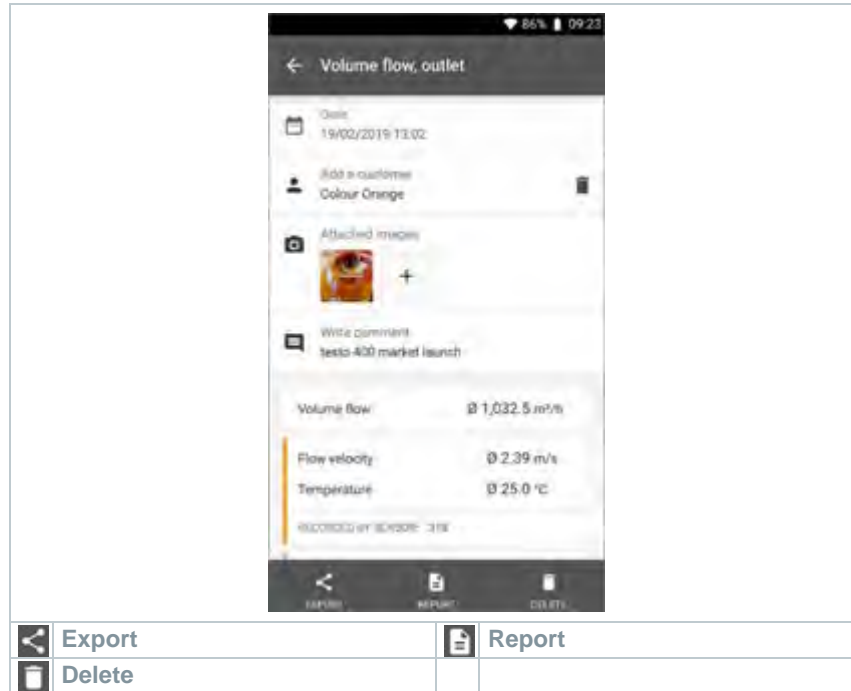
The available readings can be displayed in different views.

- **Live view:**
The readings transmitted by the measuring probes can be displayed in a live view. Readings from all connected measuring probes are displayed.
- **Graphic view:**
Up to four different readings can be displayed in graph format. Readings to be displayed can be selected by tapping on a reading above the diagram.
- **Table view:**
In the table view, all readings are displayed in sequence according to date and time. Different readings from the individual measuring probes can be displayed by pressing ◀ ▶.

8.6 Adjusting the view

- 1 Click on .
- 2 Select **Edit view**.
 - ▶ An overview of all measurement channels and their measurement parameters is displayed.
- 3 Deselect the “check mark” to hide a measuring instrument’s measurement channel.
- 4 Click ▼ to select the unit of a measurement channel.
- 5 Click **OK** to confirm the settings.

8.7 Exporting readings



- 1 Click on
- 2 Select **Memory**.
- 3 Click on **Select measurement**.

8.7.1 Excel (CSV) Export

- 1 Click on
- ▶ A selection of export options is displayed.
- 2 Click on **Start export**.
- ▶ A selection of sending/export options is displayed.
- 3 Select the required sending/export options.

8.7.2 PDF Export

- 1  Click on **Report**.
 - ▶ A selection window is displayed.
- 2 If required, activate the **Create PDF with all readings** button.
- 3 Click on **Create**.



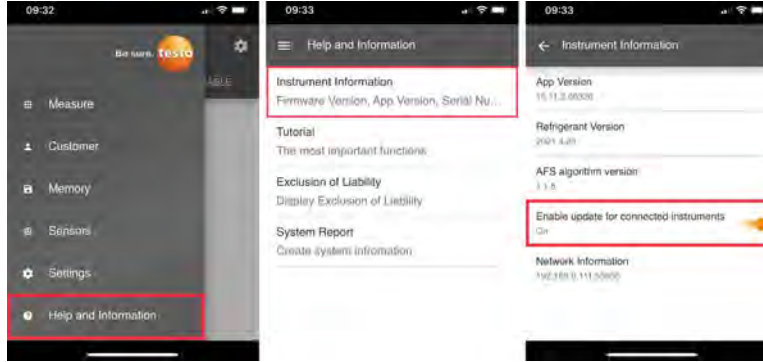
For measurements, please be aware that the option **Create PDF with all readings** is only possible up to 30 pages, due to the resulting file size and number of pages. In the testo DataControl software, however, PDF reports can be created for all measurements without any restrictions.

- ▶ A report containing all the information is created.
 - ▶ A selection window is displayed. The report can be sent via e-mail or Bluetooth®.
- 4 Click on **E-mail** or **Bluetooth®**.
- ▶ The report will be sent.

8.8 Perform Firmware update



Ensure that the option for **Enable update for connected instruments** in **Instrument Information** is always enabled.



- ✓ If a new firmware is available for your measurement instrument, an update notification is shown after connecting the instrument with the testo Smart App.

- 1 Click **Start Update** to perform the update.

If you click **Later**, the Update notification is shown again during the next connection.



During the instrument update the Bluetooth connection must **not** be disconnected.

The update needs to be performed completely and takes approx. 5-10 minutes depending on the used smartphone.





After the update the measuring instrument is restarting.
The firmware can be checked in the instrument menu or via the app.
A restart of the testo Smart App is recommended after the instrument update.

9 Maintaining the product

9.1 Inserting / changing batteries

⚠ WARNING

Serious risk of injury to the user and/or destruction of the instrument. There is a risk of explosion if the batteries are replaced with ones that are the wrong type.

- Only use non-rechargeable alkaline batteries.

- ✓ The instrument is switched off.
- 1 Open the battery compartment (on the back of the instrument) via the snap lock.
- 2 Insert or replace batteries (3 x AA alkaline batteries).

Observe the polarity!
- 3 Close the battery compartment.



When not in use for a long period: Take out the batteries.

9.2 Cleaning the instrument

- 1 If the housing of the instrument is dirty, clean it with a damp cloth.



Do not use any aggressive cleaning agents or solvents! Mild household cleaning agents and soap suds may be used.

10 Technical data for testo 110

Feature	Value
Measurement parameters	°C, °F
Accuracy	NTC: ± 0.2 °C (-20 to +80 °C) ± 0.3 °C (other ranges) Pt100: according to digital probe
Resolution	NTC: 0.1 °C Pt100: according to digital probe
Measuring range	NTC: -50 to +150 °C Pt100: -200 to +800 °C
Operating temperature	-20 to +50 °C
Storage temperature	-20 to +50 °C
Operating humidity	0 to 80 %RH / For indoor use only
IP class	IP20 (with connected probe IP40)
Level of contamination	PD2
Max. operating altitude	≤ 2000 m above sea level
Nominal output	2 W @ 4,5 V DC
Battery type	3 x 1.5 V AA battery (included in the scope of delivery)
Battery life	>100 h
Dimensions	135 x 60 x 28 mm
Weight	187 g

10 Technical data for testo 110

With Topsafe (0516 0224) and the following probes, this product complies with guidelines in accordance with the EN 13485 standard:

Part no.	Measuring range
0572 2163	-40 ... +85 °C
0615 1212	-40 ... +150 °C
0615 1712	-40 ... +125 °C
0618 0071	-40 ... +85 °C
0618 0072	-40 ... +85 °C
0618 0073	-40 ... +85 °C
0618 0275	-40 ... +85 °C

Suitability: S, T (storage, transport)

Environment: E (transportable thermometer)


Accuracy class: 0.5

Measurement range: see table above

According to EN 13485, the measuring instruments should be checked and calibrated regularly under the terms of EN 13486 (Recommended: Yearly).

11 Tips and assistance

11.1 Questions and answers

Question	Possible cause	Possible solution
 is displayed (top right on the display)	Instrument battery is almost spent	Replace instrument battery
Instrument switches itself off	<ul style="list-style-type: none"> • Auto Off function is switched on • Remaining battery capacity is insufficient 	<ul style="list-style-type: none"> • Switch off Auto Off function • Change the battery.
Display responds sluggishly	Ambient temperature is very low	Increase ambient temperature
Display: ----	Sensor error	Please contact your dealer or Customer Service.
Display: OOOOO	Permissible measuring range has been exceeded	Keep within the permissible measuring range
Display: UUUUU	Permissible measuring range has been undershot	Keep within the permissible measuring range
Display: BT Fail	Bluetooth connection could not be established	<ul style="list-style-type: none"> • Check Bluetooth® connections. • Restart measuring instrument, restart testo Smart App.
Display: Print Fail	Printout could not be performed successfully	<ul style="list-style-type: none"> • Check Bluetooth® connections, switch off and then on again if necessary. • Switch printer off and then on again.
Display: Probe Fail	Probe damage	Please contact your dealer or Customer Service.
Display: OTA Fail	The update process "over the air" of the measuring instrument could not be completed successfully.	Restart the measuring instrument and testo Smart App and check the Bluetooth® connection.
Display: APP Lost	Connection to the testo Smart App was interrupted. Keys are locked for 3 s.	Restart the measuring instrument and testo Smart App and check the Bluetooth® connection.

11.2 Accessories and spare parts

Description	Order no.
Bluetooth®/IRDA printer	0554 0621
Topsafe protective case	0516 0224

11.2.1 Compatible NTC probes

Description	Order no.
Waterproof immersion/penetration probe – with NTC temperature sensor	0615 1212
Robust air probe – with NTC temperature sensor	0615 1712
Temperature probe with Velcro and NTC temperature sensor	0615 4611
Clamp probe with NTC temperature sensor – for measurements on pipes (Ø 6-35 mm)	0615 5505
Pipe wrap probe with NTC temperature sensor – for measurements on pipes (Ø 5-65 mm)	0615 5605
Stub temperature probe (digital) - with NTC temperature sensor	0572 2162

11.2.2 Compatible Pt100 probes (digital)

Description	Order no.
High-precision immersion/penetration probe with Pt100 temperature sensor	0618 0275
Immersion/penetration probe with Pt100 temperature sensor	0618 0073
Air temperature probe with Pt100 temperature sensor	0618 0072
Flexible immersion probe with Pt100 temperature sensor and flexible PTFE probe tube	0618 0071
Laboratory probe with Pt100 temperature sensor in glass tube (Duran 50), resistant to aggressive media	0618 7072
WBGT-Pt100 probe for ambient temperature	0618 0070
WBGT-Pt100 probe for wet bulb temperature	0618 0075
Temperature cable probe with Pt100 temperature sensor	0572 2163
Pt100 special probe	0618 9999