



testo 110 – Temperature meter for NTC and Pt100

0563 0111

0563 0112

Instruction manual



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1 About this document

- The instruction manual is an integral part of the instrument.
- Keep this documentation at 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.

 **ATTENTION**

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

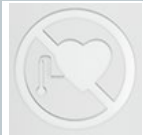
| | |
|--|-----------------------------|
| | Refer to instruction manual |
|--|-----------------------------|

5.2 TopSafe

The measuring instrument is supplied with the TopSafe protective case as standard to protect it from moisture (IP65 with probe connected), dirt and impacts.



Explanation of icons



Warning of danger due to magnetic field.
Not relevant, as no magnets are installed in this version of TopSafe.

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.

6 First steps






- 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 Inserting the measuring instrument in TopSafe

The measuring instrument should be placed in the TopSafe protective case to protect it from moisture, dirt and impacts.

- 1 | Remove the cover from the top of the TopSafe.
- 2 | Insert the measuring instrument into the TopSafe from above.
- 3 | Replace the cover on the top of the TopSafe.



Protection class IP65 is only achieved when the probe is plugged in.

Therefore, connect the probe directly after inserting the measuring instrument into the TopSafe.

6.2.2 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.

6.2.3 Switching the instrument on and off

Switching on

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

6.2.4 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.



- ▶ If necessary, press and hold (approx. 2 sec) the ◀ key to activate the Bluetooth® connection.

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 and lists them.

- 2 If multiple devices are found, select the instrument that you need and select **Connect**.

- ▶ If necessary, switch the instrument to be connected off and on again to restart the connection module.

- ▶ If the connection is successful, the Bluetooth® icon stops flashing and the instrument is visible on the app in the **Device list** menu item.

When the testo Smart App is connected to the measuring instrument, the  icon appears on the measuring instrument display.



Instrument detected

The following instrument is detected as available for connection. Do you want to connect?



- Remember my choice

Connect

Don't connect

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 |
|---|---|
| <p>MENU/ENTER</p>  | <p>For CP/CCP measurements: Send reading to app</p> <p>Open configuration mode</p> <p>Start continuous measurement / record multi-point readings (Operation also possible directly on measuring instrument if it is connected to the app)</p> <p>In configuration mode: Confirm input</p> |
| <p>Print (long press)</p>  | <p>Output readings via external printer</p> |
| <p>Arrow right</p>  | <p>In configuration mode: Increase value, select option</p> |

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.
- ▶ 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**.

8 Controls via testo Smart App

With the testo Smart App, you can extend the range of functions of your testo 110 and save readings digitally, create reports and make settings. There is a separate measurement program in the testo Smart App for digital CP/CCP control point measurements and documentation.




8.1 Overview of Food Safety

The  **Food safety** application area combines all the functions required for monitoring the temperature control points.

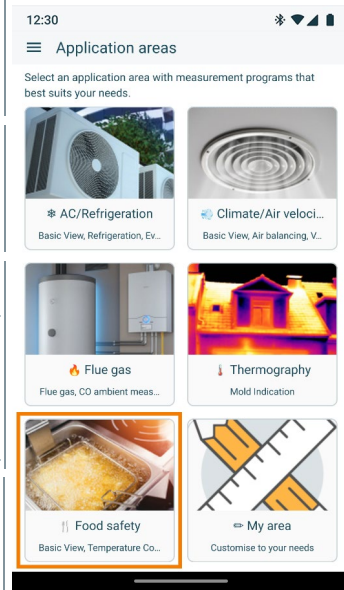
1 Click on  in the testo Smart App.

2 Select  **Application areas**.

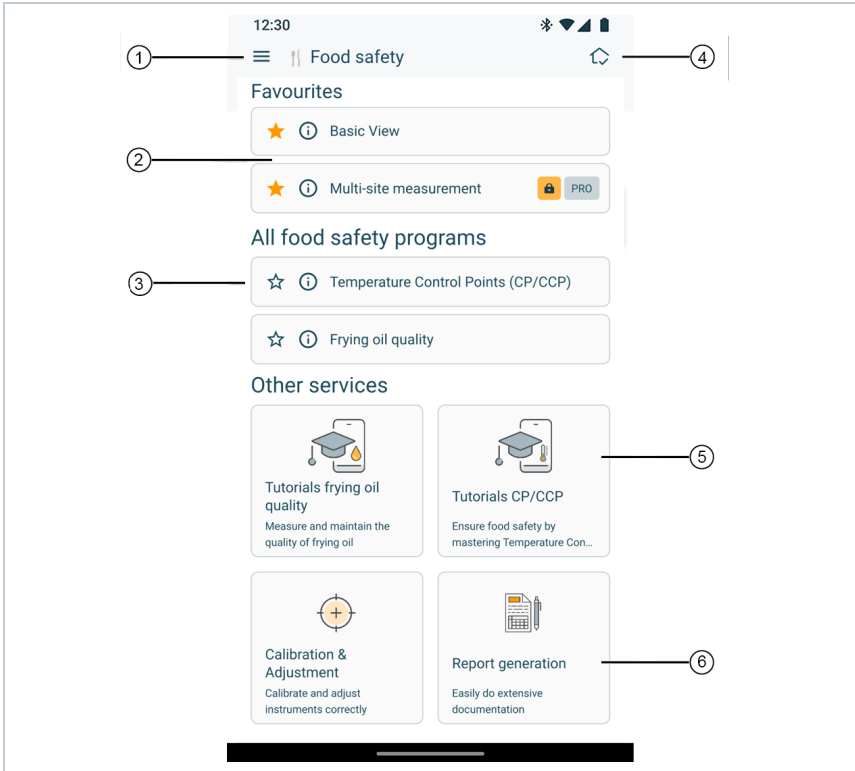
3 Select  **Food safety**.

 The menu  **Food safety** can be selected as default page of the app by clicking on .

▶ When the  **Food safety** menu is called up for the first time, a tutorial with an introduction to the functions starts automatically.

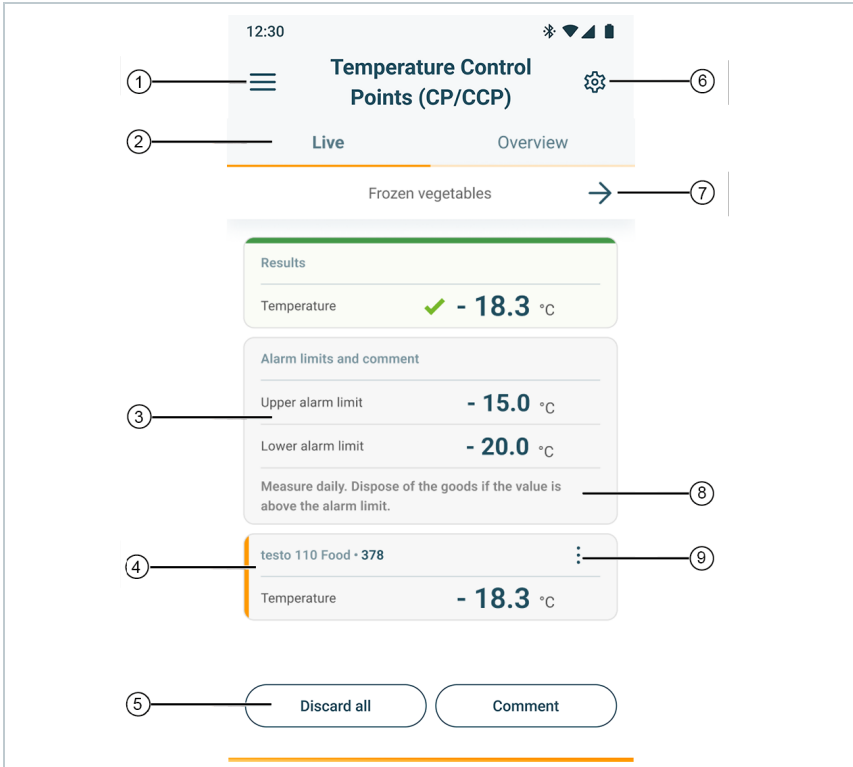


8.2 Overview of temperature control points (CP/CCP) configuration page



| | | | |
|---|--|---|--|
| 1 | Choice of applications | 2 | Possibility to define certain measurement programs as favourites |
| 3 | Program for temperature control points | 4 | Possibility to define the actual view as default site |
| 5 | Tutorials with additional information | 6 | Menu for report generation |




8.3 Overview of operating controls



| | | |
|---|--|---|
| 1 | Choice of applications | 2 Switch between the views: - Live = actual control point - Overview = Overview of selected control points |
| 3 | Measurement results (Measured value and alarm interpretation are displayed here after pressing the ENTER button on the device) | 4 Display of connected measuring instruments |
| 5 | Buttons (A comment on the measurement can be stored via Comment) | 6 Measurement configuration (Selection and configuration of control points) |
| 7 | The arrow allows to change to the next control point | 8 Display of entered comment for the actually selected control point |
| 9 | Configuration of the measuring unit | |

8.4 App options



8.4.1 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.

8.4.2 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.

8.4.3 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.



In addition, separate tutorials for CP/CCP measurements are available under Application areas | Food safety.

8.5 Application menus

8.5.1 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.

8.5.2 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: .

8.5.3 Displaying information about an application

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

8.6 Making measuring instrument settings

- ✓ The measuring instrument is connected to the testo Smart App.

- 1 | Click on .
- ▶ | The main menu opens.
- 2 | Click on  **Measurement instruments**.
- ▶ | The **Measurement instruments** 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”.



8.6.1 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
- 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.

8.6.2 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).


8.6.3 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”.

8.6.4 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”.

8.6.5 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”.

8.7 Display of the readings



The available readings can be displayed in different views.




For carrying out measurements of temperature control points in the food sector, we recommend the **Temperature Control Points (CP/CCP)** measurement menu.

The standard views can be used for other measurements (e.g. time curve measurements).

- 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 ◀ ▶.




8.8 Adjusting the view

- 1 | Click on .
- 2 | Select **Edit view**.

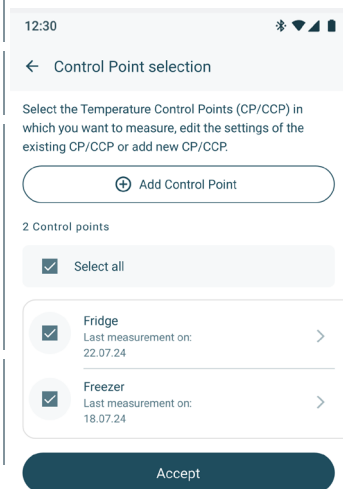
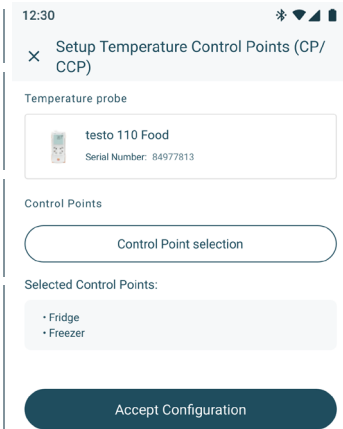
▶ An overview of all measurement channels and their measurement parameters is displayed.
- 3 | Deselect the “check mark” to hide a measuring instrument’s measurement channel.
- 4 | Click ▼ to select the unit of a measurement channel.
- 5 | Click **OK** to confirm the settings.

8.9 Configuring control points

The **Temperature Control Points (CP/CCP)** measurement program makes it possible to create multiple measuring points and then measure them one after the other in a measurement round.

- 1 Click  in the testo Smart App.
- 2  Select **Application areas**.
- 3  Select **Food safety**.
- 4 Select **Temperature control points (CP/CCP)**.
- 5 Select **[Control Points Selection]**.
 - ▶ The **Control Points Selection** menu is displayed.
- 6 Select **[Add control point]** if new control points are to be created.




To do this, enter the **Name** of the control point as well as the **Upper alarm limit** and **Lower alarm limit** and click on **[Apply]** to save.
- 7 Select control points already created for the measurement round and click **[Accept]** to accept the selection.



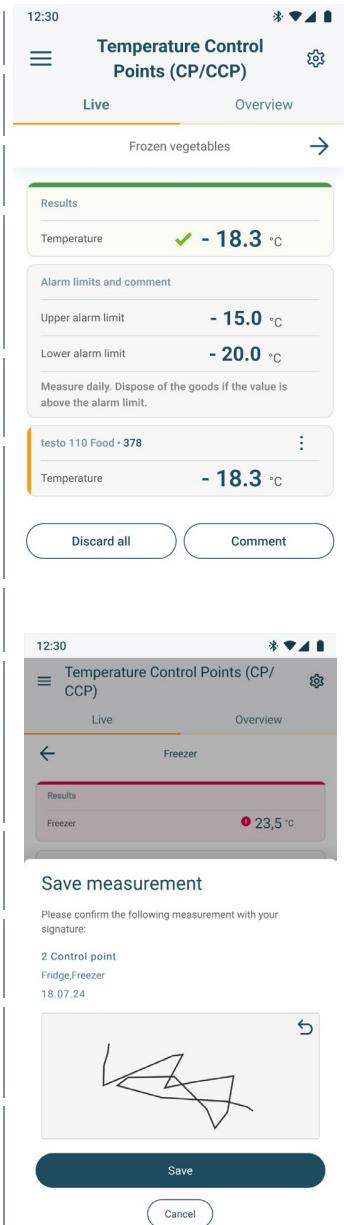
8.10 Measuring control points

The **Temperature Control Points (CP/CCP)** measurement program allows you to measure multiple selected measuring points one after the other in a measurement round and to add a comment and/or a signature to the measurement results.

8 Controls via testo Smart App

- 1 Click  in the testo Smart App.
- 2  Select **Application areas**.
- 3  Select **Food safety**.
- 4 If necessary, use **Control Point Selection** to change the control points selected for the measurement round.
- 5 Start the measurement round with **Accept Configuration**
- 6 Measure the first control point and save the reading by pressing the **MENU/ENTER** key on the measuring instrument.
 - ▶ Use **[Comment]** to enter a comment on the measurement.
- 7 Use the arrow to switch to the next control point, measure this one as well and save the reading by pressing the **MENU/ENTER** key on the measuring instrument.
- 8 Measure the control points one after the other.
- 9 When no more control points are to be measured, select **[Finalize]**.
 - ▶ The **Save measurement** menu is displayed with the option of entering a signature.
- 10 Press **[Save]** to store the readings.

If necessary, enter a signature beforehand.






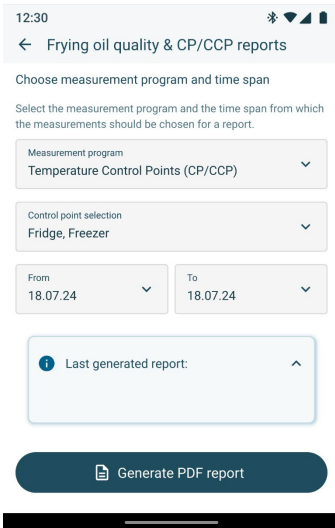
- ▶ The **Measurement finalized** menu is displayed.

The readings are now available for reporting.

8.11 Exporting readings

Determined measurement results can be displayed and exported as reports in PDF format for one or more control points and freely definable time periods.

- 1 Click  in the testo Smart App.
 - 2  Select **Application areas**.
 - 3  Select **Food safety**.
 - 4 Select **Report generation**.
 - 5 Specify report details and click **[Generate PDF report]**.
- ▶ The desired report is generated and can be shared with other apps.

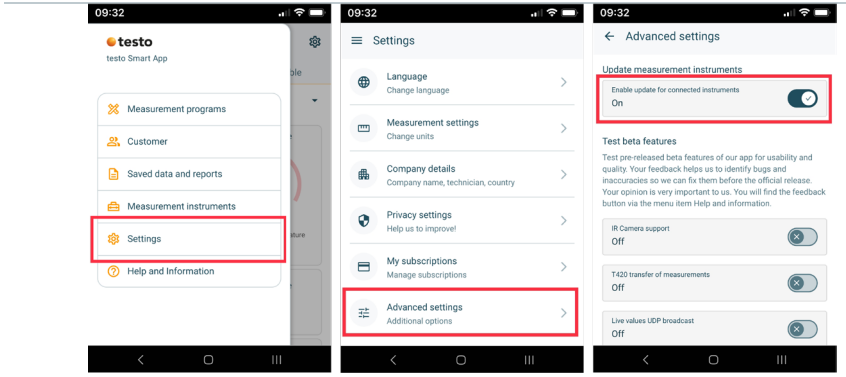


8.12 Performing a firmware update



In **Advanced settings**, make sure that the toggle switch for **Enable update for connected instruments** is always enabled.

8 Controls via testo Smart App



- ✓ If new firmware is available for your measuring instrument, an update notification will appear on the screen after you connect the instrument to the testo Smart App.

- 1 Click on **Start update** to carry out the update.

If you click on **Later**, the update notification will appear again the next time you connect.



The Bluetooth connection must **not** be interrupted during the instrument update.

The update must be carried out completely and takes approx. 5 to 10 minutes depending on the smartphone used.



Update in Progress

Please do not disconnect the instrument



After the update, the measuring instrument will reboot.

The firmware can be checked in the instrument menu or via the app. It is recommended to restart the testo Smart App after performing 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: $\pm 0.2 \text{ °C} \pm 1 \text{ digit}$ (-20 to +80 °C) $\pm 0.3 \text{ °C} \pm 1 \text{ digit}$ (other ranges) Pt100: according to digital probe |
| Solution | 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 ... 80% RH / For indoor use only |
| IP class | Measuring instrument inserted in Topsafe and with probe connected: IP65 Measuring instrument without Topsafe: IP20 (with connected probe IP40) |
| Level of contamination | PD2 |
| Max. operating altitude | $\leq 2000 \text{ m}$ 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 | Measuring instrument: 135 x 60 x 28 mm Topsafe: 165 x 75 x 46 mm |
| Weight | Measuring instrument: 187 g Topsafe: 100 g |

With Topsafe (0516 0225) and the following probes, this product fulfils the guidelines as per EN 13485 and NSF:

EN 13485

| Order no. | Measuring range |
|-----------|-----------------|
| 0572 2163 | -40 ... +85 °C |
| 0615 1212 | -40 ... +150 °C |
| 0615 1712 | -40 ... +125 °C |
| 0615 1912 | -40 ... +150 °C |

| Order no. | Measuring range |
|-----------|-----------------|
| 0615 2211 | -40 ... +150 °C |
| 0615 2411 | -25 ... +150 °C |
| 0615 3211 | -40 ... +140 °C |
| 0615 3311 | -40 ... +150 °C |
| 0618 0071 | -40 ... +85 °C |
| 0618 0072 | -40 ... +85 °C |
| 0618 0073 | -40 ... +85 °C |
| 0618 0275 | -40 ... +85 °C |

NSF

| Order no. | Measuring range |
|-----------|-----------------|
| 0615 2211 | -50 to +150 °C |

Suitability: S, T (storage, transport)

Conditions: E (transportable thermometer)

Accuracy class: 0.5


Measuring range: see table above

According to EN 13485, the measuring instrument should be checked and calibrated regularly under the terms of EN 13486 (recommended frequency: yearly).

Contact us for more information: www.testo.com

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 Testo 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 Testo 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. |

If we have not been able to answer your question: please contact your local dealer or Testo Customer Service. See the back of this document or the www.testo.com/service-contact web page for contact details.

11.2 Accessories and spare parts

| Description | Order no. |
|--|-----------|
| Bluetooth®/IRDA printer | 0554 0622 |
| Topsafe protective case | 0516 0225 |
| testo 110 Food kit incl. stainless steel probe | 0563 0112 |
| Rechargeable battery pack 3*AA | 0554 6100 |

For a complete list of all accessories and spare parts, please refer to the product catalogues and brochures or visit our website www.testo.com

11.2.1 Food probe

| Description | Order no. |
|---|-----------|
| Stainless steel NTC food probe (IP65) with TUC connector | 0615 2211 |
| Robust NTC food penetration probe with TUC connector | 0615 2411 |
| NTC frozen food probe with TUC connector - for screw-in use | 0615 3211 |
| Waterproof stainless steel food probe (IP67) with TUC connector | 0615 3311 |

11.2.2 Compatible NTC probe

| Description | Order no. |
|--|-----------|
| Waterproof immersion/penetration probe – with NTC temperature sensor (analog) | 0615 1212 |
| Robust air probe – with NTC temperature sensor (analog) | 0615 1712 |
| Temperature probe with Velcro and NTC temperature sensor (analog) | 0615 4611 |
| Clamp probe with NTC temperature sensor – for measurements on pipes (Ø 6-35 mm) (analog) | 0615 5505 |
| Pipe wrap probe with NTC temperature sensor – for measurements on pipes (Ø 5-65 mm) (analog) | 0615 5605 |
| Stub temperature probe (digital) - with NTC temperature sensor | 0572 2162 |
| Waterproof NTC surface probe with TUC connector | 0615 1912 |

11.2.3 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 |



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