testo 883 - thermal imager

Short instructions

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Contents

Contents

1 About this document

> ℹ️ You will find detailed instructions in the login area of the respective Testo solution at: www.testo.com/login.

- 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.
- Familiarity with a PC as well as the Microsoft® products is assumed in this documentation.

2 Safety and disposal

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

3 Product-specific approvals

Please find the current country approvals in the enclosed **Approvals and Certifications** document.

4 Product-specific information

ATTENTION
Damage to the detector!
During operation, this instrument must not be pointed at the sun or other intensive sources of radiation (e.g. objects with temperatures exceeding 650 °C). This can cause serious damage to the detector. The manufacturer does not provide any warranty for any such damage to the microbolometer detector.

5 Support

You can find up-to-date information on products, downloads and links to contact addresses for support queries on the Testo website at: www.testo.com.

6 Scope of delivery

testo 883	testo 883
Individual unit in a case	**Kit in a case**
testo 883	testo 883
USB-C cable	USB-C cable
Mains unit (USB)	Mains unit (USB)
Rechargeable battery	Rechargeable battery
Technical documentation	Technical documentation
Calibration protocol	Calibration protocol
Carrying strap	Carrying strap
Bluetooth® headset (country-specific radio authorization)	Bluetooth® headset (country-specific radio authorization)
	Spare rechargeable battery
	Telephoto lens
	Charging cradle (with cable)

7 Product description

7.1 Use

The testo 883 is a handy, robust thermal imager. You can use it to undertake the non-contact measurement and display of surface temperature distribution.

7.1 Instrument / operating elements overview

	Element	Function
1	Touchscreen monitor	Displays infrared and real images, menus and functions
2	Interface terminal	Contains USB-C port for power supply and connection to the computer
3	- ⏻ key - **Esc** key	- Switch camera on and off - Cancel action
4	- **OK** key - **Joystick**	- Open menu, select function, confirm setting - Navigate within the menu, highlight function, select colour palette
5	Quick select button ⬚	Opens the function assigned to the quick select button; the icon for the selected function is displayed bottom right
6	Infrared camera lens; protective cap	Takes infrared images; protects the lens ⓘ Lens is interchangeable

	Element	Function
7	Digital camera	Takes real images
8	Laser	Marking of the measuring point
9	Trigger	Saves the displayed image
10	Battery compartment	Contains the rechargeable battery

⚠ CAUTION	
⚠	**Laser radiation! Class 2 laser** - **Do not look into the laser beam**

> ℹ Laser can be activated with the Remote function, also via smartphone or tablet.

7.1 Displays overview
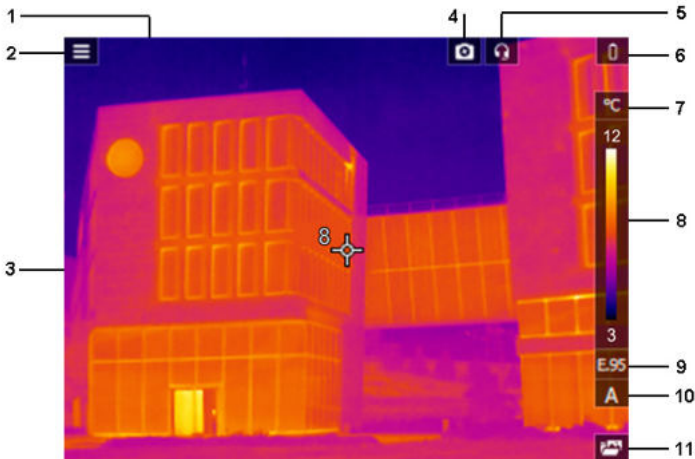
	Element	Function
1	Status bar	The following values are displayed in the status bar depending on the setting: • Humidity and ambient temperature • Current, voltage, solar radiation and power • Differential temperature • Zoom level (2 x, 4 x)
2	☰	Open menu.
3	Image display	IR image or real image display
4	📷	Protective glass enabled

	Element	Function
5	🎧	Headset connected
6	🔋	Battery capacity / charge status:
		🔋: Battery operation, capacity 50-75%
		🔋: Battery operation, capacity 25-50%
		🔋: Battery operation, capacity 10-25%
		🔋: Battery operation, capacity 0-10%
		🔋: Mains operation, battery is charging.
7	°C or °F	Unit set for reading and scale displays.
8	Scale	- Temperature unit
		- White characters: temperature margin of the image displayed, showing the minimum/maximum reading (with automatic scale adjustment) or the set minimum/maximum display value (with manual scale adjustment).
9	E ...	Set emissivity.
10	A, M or S	A - automatic scale adjustment
		M - manual scale adjustment
		S - ScaleAssist is enabled
11	Quick select button	The set function is displayed.

8 Commissioning

8.1 Touchscreen operating concept

Familiarize yourself with the touchscreen operating concept before you use the measuring instrument.

Actions are carried out by:

Description	
Tapping To open applications, select menu icons or press buttons on the display, in each case tap these with your finger.	

8.2 Operation via joystick

Move the joystick up/down and right/left to select the individual menus.

1	Move joystick up/down or to the left/right.	
2	Press joystick [OK] to confirm the selection.	
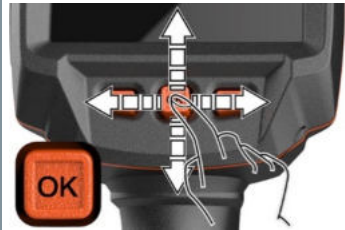
> Please read the testo 883 1st steps commissioning instructions supplied (0972 8830).

8.3   Rechargeable battery

The camera is delivered without a battery inserted. The rechargeable battery is supplied separately and must first be unpacked and inserted in the camera.

1	Pull back the unlocking button to open the battery compartment cover on the bottom of the handle.	
2	Push the battery all the way into the rechargeable battery slot until this is flush with the bottom of the handle.	
3	Close the battery compartment cover and secure with the unlocking button.	

▶ The thermal imager starts automatically.

Initial charging of the battery

The imager is supplied with a partially charged battery. Charge the battery fully before using it for the first time.

1   Connect the country-specific adapter required for the existing mains to the mains unit.

2   Open the cover on the left side of the thermal imager.

3   Connect the mains unit to the USB-C jack.

4   Connect the USB cable to the USB mains unit.

▸   The thermal imager starts automatically.

> The battery can be recharged with the imager switched on or off. This has no effect on the time required to charge the battery.

▸   Battery charging starts.

5   Fully charge the battery, then disconnect the instrument from the mains unit.

▸   After initial charging of the battery, the imager is ready for use.

> A desktop charging station (order no. 0554 8801) can also be used to charge the battery.

Rechargeable battery care

- Do not fully exhaust rechargeable batteries.
- Store rechargeable batteries only when charged and at low temperatures, but not below 0 °C (best storage conditions are 50-80% charge, at an ambient temperature of 10-20 °C, recharge completely before using again).
- For longer breaks, you should discharge and recharge the batteries every 3-4 months. Trickle charging should not exceed 2 days.

8.4 Switching the instrument on and off

Switching on the camera

1	Remove protective cap from the lens.

2	Press ⏻.

▶ The camera starts.

▶ The start screen appears on the display.

ℹ️ To ensure measuring accuracy, the camera performs automatic zeroing approx. every 60 s. A "click" is heard when this happens. The image freezes briefly when this occurs. Zeroing is carried out more frequently during the camera warm-up period (takes approx. 90 seconds).

During the warm-up period no measuring accuracy is guaranteed. The image can already be used for indication purposes and saved.

Switching off the camera

1	Press and hold down ⏻ until the progress bar on the display is complete.

▶ The display goes off.

▶ The camera is switched off.

8.5 Getting to know the menu

> ℹ️ testo 883 can also be operated via the monitor's touchscreen feature.

| 1 | Press **OK** or tap ☰ to open the menu. | |

| ▶ | **Menu** opens. | |

| 2 | Select the submenu (joystick or touchscreen). |

| ▶ | Submenu opens. |

| 3 | To exit the submenu again: |
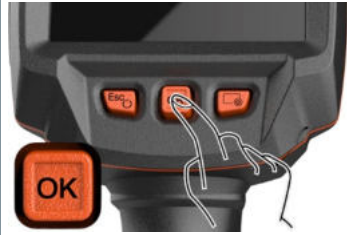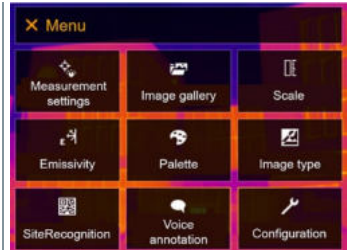
- ○ Tap ← or ✕ or
- ○ Move the joystick to the left or move the joystick to the menu bar and confirm with **OK**.

8.6 Quick select button

The quick select button is another navigation option that allows you to access certain functions by pressing ⬛ or tapping the icon of the quick select button on the screen.

Quick select menu items

Menu item	Function
Image gallery	Opens an overview of saved images.
Scale (This function is only available if the Image type is set to infrared)	Set scale limits.
Emissivity (This function is only available if the Image type is set to infrared)	Set emissivity (E) and reflected temperature (RTC).
Palette	Toggles the palette selection.
Adjustment (This function is only available if the Image type is set to infrared)	Carries out manual zeroing.
Image type	Alternately switches the image display between infrared and real image.
Laser	Activates the laser pointer.
Zoom	Enlarges the image section (2 x, 4 x)
SiteRecognition	Site recognition

Using the quick select button

1 Press ⬜.

▶ The function assigned to the quick select button is carried out.

8.7 Changing the lens

Only lenses that have been adjusted to the respective thermal imager can be used. The serial number on the lens must match the serial number displayed in the imager, .

> ℹ The lens can be changed while the imager is running. The imager automatically detects which lens is fitted and makes the information readily available in the menu.

✓ | The imager must be placed on a stable surface.

8.7.1   **Removing the lens**

1 | Turn the lens fixing ring anti-clockwise as far as it will go.

2 | Turn the lens anti-clockwise as far as it will go.

3 | Remove lens.

ℹ️ Always store unused lenses in the lens box (supplied with the interchangeable lens).

8.7.2   **Attaching a new lens**
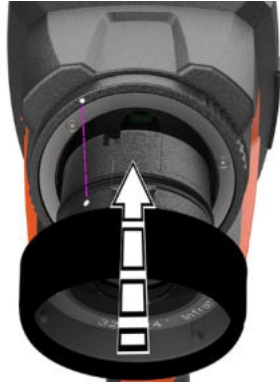
1	Attach a new lens.	
2	Align the markings on the lens and handle.	
3	Turn the lens fixing ring clockwise as far as it will go.	

9 WLAN connection – using the App

9.1 Activating/disabling the connection

To connect via WLAN, you need a tablet or smartphone with the **testo Thermography App** already installed on it.

You can get the App from the App Store for iOS devices or from the Play Store for Android devices.

Compatibility:

Requires iOS 8.3 or later / Android 4.3 or later.

1 Open the Menu.
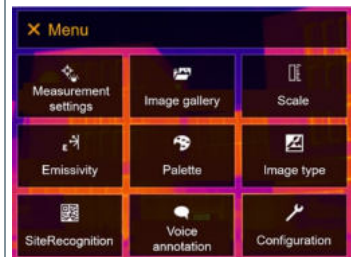
2 Select Configuration (joystick or touchscreen).

▸ **Configuration** opens.
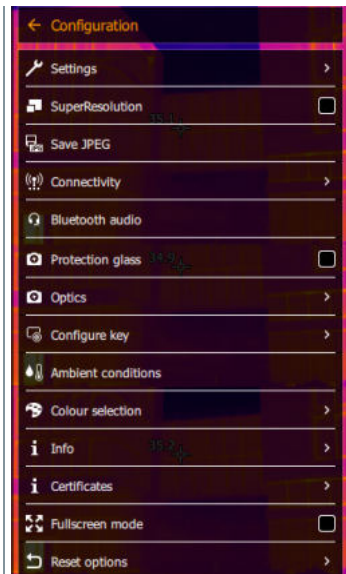
3 Select **Connectivity** (joystick or touchscreen).

▸ **Connectivity** opens.
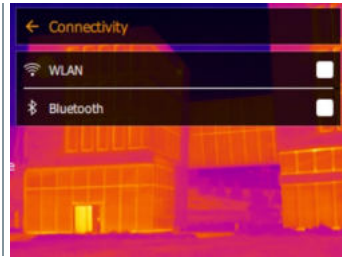
4 Select **WLAN** (joystick or touchscreen).

▸ A check mark appears when WLAN is enabled.

> ⓘ While WLAN is activated, the image gallery cannot be accessed.

Explanation of WLAN icons

Symbol	Function
📶	App is connected
📶✗	No connection to the App

9.2 Using the App

9.2.1 Establishing a connection

✓ WLAN is activated in the thermal imager.

1 Smartphone/tablet -> **Settings** -> **WLAN settings** -> camera is shown with serial number (testo 883 (12345678)) and can be selected.

2 Select testo 883 in the WLAN settings.

3 Enter password: testo 883

ⓘ The password must be entered once.

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4 Press **Connect**.

▶ The WLAN connection to the thermal imager is established.

9.2.2 **Select display**

Second display

✓ The WLAN connection to the thermal imager is established.

1 **Selection** -> **2nd display.**

▶ The display on the thermal imager is shown on your mobile end device.

Remote

✓ The WLAN connection to the thermal imager is established.

1 **Selection** -> **Remote.**

▶ The display on the thermal imager is shown on your mobile end device. The thermal imager can be controlled and settings made via the mobile terminal device.

Gallery

✓ The WLAN connection to the thermal imager is established.

1 **Selection** -> **Gallery**.

▶ The saved images are displayed and can be managed.

10 Bluetooth® connection

A connection between the thermal imager and the testo 605i humidity probe or testo 770-3 clamp meter can be established via Bluetooth®.

Via the Bluetooth radio interface, a link to a Bluetooth headset can be established for voice recording. Please follow the instruction manual for the Bluetooth headset.

	Bluetooth® 4.0 required.

1 Open the **Menu**.
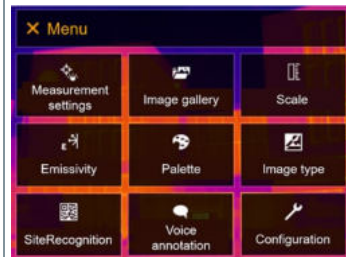
2 Select **Configuration** (joystick or touchscreen).

▸ **Configuration** opens.
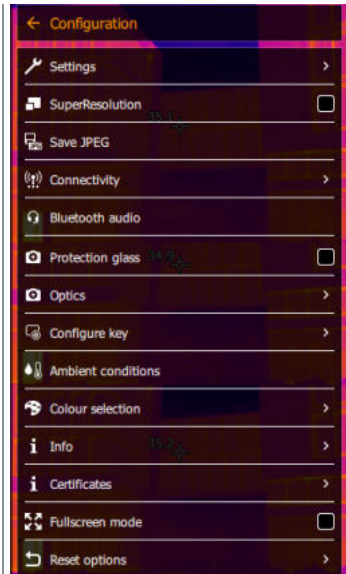
3 Select **Connectivity** (joystick or touchscreen).

▶ **Connectivity** opens.
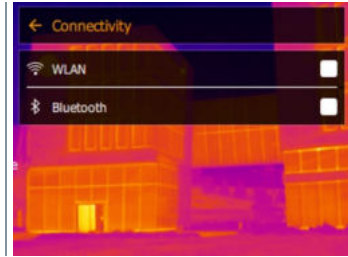
4 Select **Bluetooth**® (joystick or touchscreen).

▶ A check mark appears if Bluetooth® is enabled.

Explanation of Bluetooth® icons

Symbol	Function
	No connection to the humidity probe, testo 605i or testo 770-3
	Searching for humidity probe.
	Humidity probe readings are being transmitted.

When connected to the clamp meter

1 Open the **Menu**.
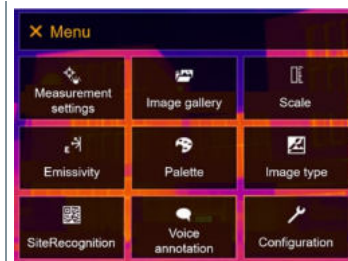
2 Select **Measurement settings** (joystick or touchscreen).

▶ **Measurement settings** opens.
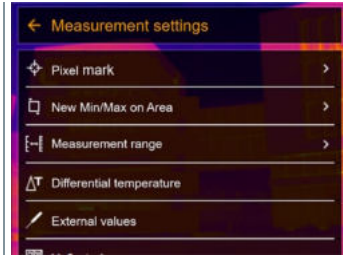
3 | Select **External values** (joystick or touchscreen).

▶ **External values** opens.

4 | Select the required size (joystick or touchscreen).

5 | Confirm selection with ✓ or exit the menu with **X**.

▶ Clamp meter readings are displayed in the header.

> Readings are only transferred if the current, voltage or power is set on the clamp meter.

When connected to the humidity probe

✓ Bluetooth® connection is enabled.

✓ In the **Measurement** -> **External values** menu, the **Humidity** measurement function is selected.

▶ The thermal imager switches automatically to humidity measurement.

▶ Humidity probe readings are displayed in the header.

> If a WLAN connection is enabled in addition, the Bluetooth data transfer is continued. However, it is not possible to establish a new connection to a humidity probe.

11 Performing the measurement

ℹ️ The testo 883 can be operated both by joystick and by touchscreen on the monitor.

ATTENTION

High thermal radiation (e.g. due to sun, fire, furnaces)
Detector may be damaged!

- Do not point the camera at objects with temperatures > 650 °C.

11.1 Saving an image with preview

1 Press **Trigger**.

▶ The image is automatically saved.

▶ Regardless of the image type set, an infrared image is saved with an attached real image.

Action	Description	Result
Trigger operation	Aim at any subject. Press trigger.	The subject aimed at remains frozen on the camera display for checking purposes.
Cancel recording	Press - left key or - touch bottom left corner	Live image is displayed. Image is not saved.
Recording	Aim at any subject. Press trigger Press trigger again.	Live image is displayed. Image is saved.
Recording with audio	Aim at any subject. Select the Audio commentary menu Press trigger In the Voice annotation menu, select Recording with audio Audio commentary is made with (connected) headset. Press trigger again.	Live image is displayed. Image is saved with audio commentary.

For a higher resolution, in the **Configuration** menu, select the **SiteRecognition** submenu.

11.2 Setting measuring functions

1 | Open **Measurement** submenu (joystick or touchscreen).

▶ The **Measurement** submenu opens with the measurement settings:

- **Pixel mark**:

  o **New measuring spot**: A new measuring point can be added, moved or removed.
    - **Edit/Remove measurement point…**
    - **Measurement point 1**
    - **Measurement point 2**
    - …
  o **Center spot**: the temperature measuring point in the centre of the image is marked with white crosshairs and the value is displayed.
  o **Hotspot**: the highest temperature measuring point is marked with red crosshairs and the value is displayed.
  o **Coldspot**: the lowest temperature measuring point is marked with blue crosshairs and the value is displayed.
  o **Show all / Hide all**: Show or hide the centre point, hotspot and coldspot.

- **New Min/Max on area**:

  o **Min/Max on area**: Area in the centre of the image is shown. The minimum, maximum, and average values for the area are displayed.
  o **Hotspot**: the highest temperature measuring point within the range selection is marked with blue or red crosshairs and the value is displayed.
  o **Coldspot**: the lowest temperature measuring point within the range selection is marked with blue or red crosshairs and the value is displayed.
  o **Show all / Hide all**: Show or hide the selected area.

- **Measurement range**: choose between two measuring ranges or temperature ranges.

- **Differential temperature**: identifies the difference between two temperatures.

  o Difference between two measuring points
  o Difference between measuring point and input value
  o Difference between measuring point and value of an external probe

- o Difference between measuring point and the reflected temperature (RTC)
- **External values**: in various measuring modes, values can be determined either manually or with a Bluetooth® measuring instrument.
- **iFOV**: the IFOV warner shows what can be measured accurately from a specific distance.
- **Isotherm**: limit values can be set. All readings within the set limits are displayed uniformly in one colour.
- **Alarm**: Temperatures below or above a limit value are also visualized.
- **Zoom**: enlarges the image section (2x and 4x).
- **SiteRecognition**: testo SiteRecognition recognizes markers, the recorded images are assigned to the corresponding measuring location by the IRSoft PC software and stored in the database.

2 Select the required function (joystick or touchscreen).

11.3 Image gallery

Saved images can be displayed, analyzed or deleted. You can listen to and also record a voice annotation subsequently or do it again.

File name

	Element	Function
1	-	Infrared image preview
2	**IR**	Infrared image with attached real image
	000000	Consecutive number
	SR	Images captured with SuperResolution

> ℹ File names can be changed via the PC (not in the imager), e.g. in Windows Explorer.

Displaying a saved image

Saved images can be viewed and analyzed in the image gallery.

| i | When SuperResolution is enabled, 2 images are saved in the image gallery (an **IR** image, and an **SR** image). The high-resolution SuperResolution image is saved in the background. In the status bar, the number of SuperResolution images to be saved is displayed (for example: **SR(1)**). A maximum 5 SuperResolution images can be processed simultaneously. |

Analyzing an image

| i | If an image is saved with SuperResolution, the image gallery contains an (IR) image and a high-resolution image (SR). The images show the same image section. They can be displayed and analyzed in the image gallery. |

Analyze stored images using the measurement functions **Single point measurement**, **Hotspot**, **Coldspot**, **Additional measurement points, Differential temperature**, **Isotherm** and **Alarm**.

For a description of the individual functions, please read the information in the relevant sections.

11.4 Scale

Manual scaling can be activated instead of automatic scaling (continuous automatic adjustment to the current min./max. values). The scale limits can be set within the measurement range.

The activated mode is displayed bottom right: **A** automatic scaling, **M** manual scaling and **S** ScaleAssist.

| i | Auto-scaling continuously adjusts the scale to the readings presented, and the colour assigned to a temperature value changes. In manual scaling fixed limit values are defined, and the colour assigned to a temperature value is fixed (important for visual image comparisons). Scaling influences the way the infrared image is shown on the display but does not affect the recorded measuring values. |
| | With ScaleAssist, a standardized scale is set depending on the inside and outside temperature. |

Setting manual scaling

The lower limit value, the temperature range (upper and lower limit value simultaneously) and the upper limit value can be set.

Setting up ScaleAssist

The ScaleAssist function calculates a display-neutral scale depending on the inside and outside temperature. This scale graduation can be used to detect structural defects in buildings.

11.5 Emissivity

> ℹ️ This function is only available if the **Image type** is set to infrared image.

You can choose between user-defined emissivity and 8 materials with permanently set emissivity. The reflected temperature (RTC) can be set individually.

> ℹ️ Other materials can be imported into the instrument from an existing list using the PC software.

Emissivity information:

The emissivity describes the capability of a body to emit electromagnetic radiation. This is material-specific and must be adapted for correct measurement results.

Non-metals (paper, ceramic, gypsum, wood, paints and coatings), plastics and food have high emissivity, which means that the surface temperature can be easily measured using infrared.

Because of their low or non-uniform emissivity, bright metals and metal oxides only have limited suitability for infrared measurement. Highly inaccurate measurements should be expected. A remedy for this is coatings that increase emissivity, e.g. paint or emission adhesive (accessory: 0554 0051), which must be applied to the object to be measured.

The following table gives typical emissivities of important materials. These values can be used as a guide for user-defined settings.

Reflected temperature information:

Using this offset factor, the reflection is calculated out based on the low emissivity, and the accuracy of the temperature measurement with infrared measuring instruments is improved. In most cases, the reflected temperature is identical to the ambient air temperature. Only when objects with strong emissions at much lower temperatures (such as cloudless skies during outdoor readings) or much higher temperatures (such as ovens or machines) are in proximity to the object being measured should the radiation temperature of these sources be determined and used. The reflected temperature has little effect on objects with high emissivity.

> @   Further information can be found in the Pocket Guide.

11.6 Palette

> ℹ️ This function is only available if the **Image type** is set to infrared image.

The colour palette can be adapted and then marked.

11.7 Image type

The display can be switched between infrared image and real image (digital camera).

11.8 SiteRecognition

With the PC software testo IRSoft QR Codes, markers can be set to clearly identify a measuring location. By setting a marker with the built-in digital imager, the images, which are then saved, are automatically allocated to the relevant site (allocation is saved with this image). For the creation of markers, transferring of measuring site data to the imager and copying of images to the PC software, see instruction manual for the PC software.

1 Open the **Menu**.
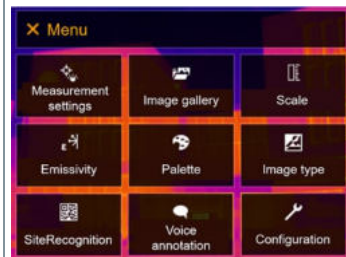
2 Select **SiteRecognition** (joystick or touchscreen).

▶ **SiteRecognition** opens.

▶ The real image is displayed and a position frame is shown.
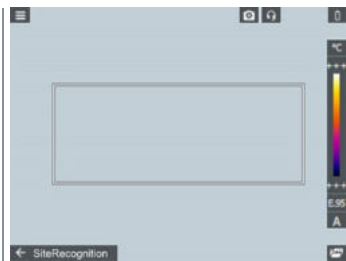
> To quickly change the measuring locations, SiteRecognition can be assigned to the quick select button.

Enter measuring site marker

1 Position the imager so that the marker is inside the position frame.

2 After recognition of the marker ID: confirm transfer of measuring site data.

▸ | The thermographic image that is taken next is assigned to the measuring location.
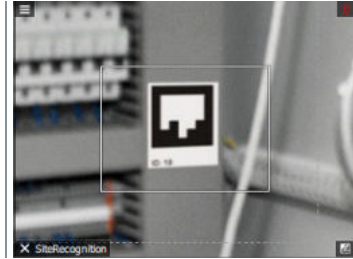
ℹ | Several images can be saved for the same measuring location.

ℹ | To exit the measuring location, press **Esc** or touch the bottom left corner. Run **SiteRecognition** again.

11.9 Activating/disabling the laser

⚠ CAUTION
Laser radiation! Class 2 laser
- **Do not look into the laser beam**

ℹ | Laser can be activated with the Remote function, also via smartphone or tablet.

11.10 Configuration

11.10.1 Settings

Country settings

The user interface language can be set.

Set time/date

Time and date can be set. The time and date format are set automatically based on the selected user interface language.

Temperature unit

The temperature unit can be set.

Power-save options

The illumination intensity of the display can be set. A lower intensity increases the battery life.

The time until automatic switch-off can be set between 5 min and 300 min.

11.10.2 **SuperResolution**

SuperResolution is a technology to improve image quality. For each shot a sequence of images is saved in the thermal imager. Using the camera, App, or PC software, an image is recorded with four times more measurement values (no interpolation). The geometric resolution (IFOV) is improved by a factor of 1.6.

To use the function, the following conditions must be fulfilled:

- The camera is hand-held.
- The objects to be imaged do not move.

11.10.3 **Save JPEG**

Infrared images are saved in BMT (image with all temperature data) format. The image can also be saved in JPEG format (without temperature data) at the same time. The image content corresponds to the infrared image shown on the display, including scale display and image marks for the selected measuring functions. The JPEG file is saved under the same file name as the associated BMT file and can be opened on the PC, even without using the IRSoft PC software.

11.10.4 **Radio**

Enable/disable WLAN or Bluetooth®.

> **i** If there is an active Bluetooth connection and a WLAN connection is activated in addition, the Bluetooth data transfer is continued. However, it is not possible to establish a new connection to a humidity probe.

11.10.5 **Protective glass**

Mounting the IR protective glass

1. Place the protective glass (with black mount) attached to the red mounting ring onto the lens and turn the mounting ring clockwise until it stops.

2. Remove the red mounting ring from the protection glass.

Removing the IR protective glass

1. Attach the red mounting ring to the protection glass.

2. Turn the mounting ring anti-clockwise and remove the protective glass.

Enable/disable protective glass option

Use the Protective glass option to select whether or not to use an IR protective glass.

i	Ensure the correct setting to prevent corruption of the measurement results. If this option is set incorrectly, the specified measuring accuracy is not guaranteed

i	Using the protective glass protects the optics from environmental influences such as dust, scratches, etc. When the protective glass is used, there may be slight variations in the displayed temperature.

11.10.6 Lens

i	All lenses that can be used with the testo 883 are displayed with a serial number for identification.

1 Open the Menu.
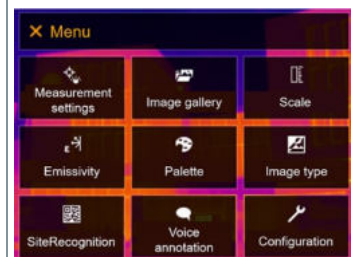
2 Select Configuration (joystick or touchscreen).

▶ **Configuration** opens.
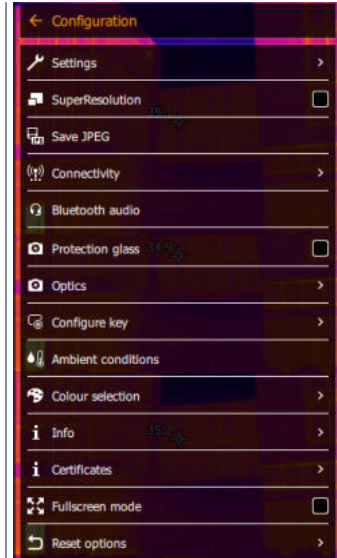
3 Select **Optics** (joystick or touchscreen).

▶ **Optics** opens.
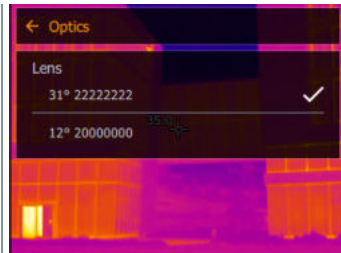
▶ The lens used is marked ✓.

11.10.7 **Softkeys**

1 Move the **joystick** to the right.

▶ | The **Configure key** selection menu opens. The activated function is marked with a dot (⬤).
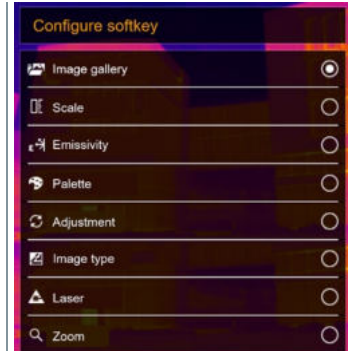
11.10.8 Ambient conditions

Measurement deviations arising due to high humidity or large distances to the object to be measured can be corrected. Correction parameters must be entered for this.

If the camera is connected to an optional humidity radio probe, the ambient temperature and humidity are transferred automatically.

Values for ambient temperature (Temperature) and ambient humidity (Humidity) can be set manually.

11.10.9 Color selection

Select colour (red, green, blue, black, white, grey) for the Isotherm, Upper Alarm and Lower Alarm markings.

11.10.10 Info

The following information is displayed:
- Device data (e.g. serial number, device name, firmware version)
- Options
- Measuring functions
- Radio
- Certificates (certificate information and information on open source libraries, etc.)

11.10.11 Fullscreen mode

The scale and the quick select button function indicator can be hidden. When Fullscreen Mode is activated, the scale and icon for the quick select button are hidden. When a key is pressed, these elements are displayed briefly.

11.10.12   Reset options

11.10.12.1   Reset counter

| i | After a reset, the consecutive numbering of images starts again from the beginning. When saving images, already saved images with the same number are overwritten!

Back up all saved images before resetting the counter to prevent possible overwriting. |

11.10.12.2   Factory settings

The instrument settings can be reset to the factory settings.

| i | Time/date, country settings and counter are not reset. |

11.10.12.3   Formatting

The image memory can be formatted.

| i | When formatting, all images saved in the memory are lost. Back up all saved images before formatting to prevent loss of data.

Formatting does not reset the counter. |

12 Technical data

12.1 Optical data

Feature	Values
Infrared resolution	320 x 240
SuperResolution	640 x 480 pixels
Thermal sensitivity (NETD)	<= 40 mK
Measurement accuracy	± 3° for readings from -30 °C to -20 °C ± 2° for readings from -20 °C to +100 °C ± 2% for readings from 100 °C to +650 °C
Measuring ranges	Measuring range 1 from -30 °C to +100 °C Measuring range 2 from 0 °C to +650 °C
Field of view (FOV) with wide-angle lens	30° x 23°
Geometric resolution (iFOV) with wide-angle lens	1.7 mrad
Focusing, wide-angle lens	manual, 0.1 m to infinity
Field of view (FOV) with telephoto lens	12° x 9°

Geometric resolution (iFOV) with telephoto lens	0.7 mrad
Image refresh rate	27 Hz or 9 Hz, depending on export restrictions
Focusing, telephoto lens	manual, 0.5 m to infinity
Spectral range	7.5 - 14 µm
Image sensor resolution, visual	3 MP
Minimum focusing distance, visual	< 0.5 m

12.2 Image presentation

Feature	Values
Display	8.9 cm (3.5") TFT, QVGA (320 x 240 pixels)
Digital zoom	2x / 4x
Display options	• Infrared image • Real image
Colour palettes	11 options: • Blue/red • Grey • Inverted grey • Iron HT • Cold-hot • Humidity • Iron • Rainbow • Rainbow HC • Sepia • Testo

12.3 Data interfaces

Feature	Values
Communication Thermography App	WLAN IEEE 802.11b/g/n
Communication with PC (IRsoft)	USB-C jack; USB 2.0

Communication with headset	Bluetooth 4.2
Communication with external probes	Bluetooth Low Energy: - testo 605i humidity probe - testo 770-3 clamp meter

12.4 Measuring functions

Feature	Values
Analysis function	Up to 5 selectable individual measuring points, hot/cold spot detection, Delta T, area measurement (min/max on area), alarms, isotherm
Temperature scaling	Automatic, manual or testo ScaleAssist
Solar mode	Manual: Input of the solar radiation value
Humidity mode	Manual: Input of ambient humidity and temperature or Automatic data transfer of testo 605i thermohygrometer via Bluetooth (instrument must be ordered separately)
Electrical mode	Manual: Input of current, voltage or power or Automatic transmission of data from the testo 770-3 clamp meter via Bluetooth (instrument must be ordered separately)
IFOV warner	Yes
Reflected temperature	Manual input
Emissivity	0.01-1.0; manual input, material selection or testo ε-Assist

12.5 Imager features

Feature	Values
Digital camera	Yes
Touch operation	yes (capacitive touch display)
Fullscreen mode	Yes
Save JPEG	yes, optionally with date/time
Video streaming	• USB • WLAN with testo Thermography App • Non-radiometric

Laser (not available in USA, Japan, China)	Laser marker (laser class 2, 635 nm)
Interfaces	USB 2.0 (USB-C jack)
WLAN Connectivity	Communication with the testo Thermography App; wireless module BT/WLAN
Bluetooth	Headset for voice annotations; transfer of readings from testo 605i thermohygrometer, testo 770-3 clamp meter (optional)
Tripod socket	for carrying strap (included in the scope of delivery) or a photo tripod with UNC thread

12.6 Image storage

Feature	Values
File format	• .jpg • .bmt • Can export as .bmp .jpg .png .csv .xls • Via testo IR-Soft
Memory capacity	Internal memory 2.8 GB, > 2000 images (without SuperResolution)

12.7 Audio functions

Feature	Values
Sound recording / playback	via headset (included in the scope of delivery)
Recording duration	1 min per image

12.8 Power supply

Feature	Values
Battery type	Fast-charging Li-ion battery, replaceable on site (6600 mAh / 3.7 V)
Operating time	5.5 h at 20 °C ambient temperature
Mains operation	With mains unit supplied
Charging options	In the instrument (via supplied mains unit) / in charging station (optional)
Charging time	approx. 6 h via mains unit

USB port	5V $=\!=\!=$ 1.8 A*

* $=\!=\!=$ Direct current

12.9 Ambient conditions

Feature	Values
Operating temperature	-15 to 50 °C
Storage temperature	-30 to 60 °C
Humidity	20 to 80 %RH; non-condensing
Battery charging temperature range	0 °C to +45 °C
Housing protection class	IP 54
Vibration resistance	2g according to IEC 60068-2-6

12.10 Physical features

Feature	Values
Product/housing material	PC - ABS
Product colour	black
Weight	827 g
Dimensions	171 x 95 x 236 mm
Display illumination	bright / normal / dark

12.11 Standards, tests

Feature	Values
EMC	2014/30/EU
RED	2014/53/EU
WEEE	2012/19/EU
RoHS	2011/65/EU + 2015/863
REACH	1907/2006

You can find the EU declaration of conformity on the Testo website, www.testo.com, under the product-specific downloads.

13 Questions and answers

Question	Possible cause / solution
Error! Memory full! is displayed.	Insufficient memory available: Transfer images to the PC or delete.
Error! Permissible instrument temperature exceeded! is displayed.	Switch off the camera, allow the instrument to cool down and observe the permissible ambient temperature.
~ is displayed before a value.	Value is outside the measuring range: extended display range with no guarantee of accuracy.
--- or **+++** is displayed instead of a value.	Value is outside the measuring range and the extended display range.
xxx is displayed instead of a value.	Value cannot be calculated: Check parameter settings for plausibility.
Automatic zeroing (audible "click" and brief image freeze) is carried out very frequently.	Camera is still in its warm-up period (takes approx. 90 seconds): Wait until the warm-up period has passed.

If we have not been able to answer your question, please contact your dealer or Testo Customer Service. You will find contact details on the back of this document or on the website **www.testo.com/service-contact**.

14 Accessories

Description	Order no.
Battery charging station 5 V, 2 A	0554 8801
Spare rechargeable battery	0554 8831
Additional markers for E-Assist function (10 off)	0554 0872
Emission tape	0554 0051
ISO calibration certificate: calibration points at 0 °C, 25 °C, 50 °C	0520 0489
ISO calibration certificate: calibration points at 0 °C, 100 °C, 200 °C	0520 0490
ISO calibration certificate: Freely selectable calibration points in the range -18 °C to 250 °C	0520 0495

For further accessories and spare parts, please refer to the product catalogues and brochures or look up at **www.testo.com**.