



testo 883 - thermal imager

Instruction manual



Contents

1	About this document	7
2	Safety and disposal.....	7
3	Product-specific approvals	8
4	Product-specific information.....	8
5	Support	8
6	Scope of delivery.....	8
7	Product description	9
7.1	Use.....	9
7.1	Instrument / operating elements overview.....	9
7.1	Displays overview.....	11
7.2	Power supply	12
8	Commissioning	13
8.1	Touchscreen operating concept.....	13
8.2	Operation via joystick.....	13
8.3	Rechargeable battery	14
8.4	Switching the instrument on and off	16
8.5	Getting to know the menu.....	17
8.6	Quick select button	17
8.7	Changing the lens.....	20
8.7.1	Removing the lens	20
8.7.2	Attaching a new lens	21
9	WLAN connection – using the App.....	23
9.1	Activating/disabling the connection	23
9.2	Using the App.....	24
9.2.1	Establishing a connection.....	24
9.2.2	Select display.....	25
10	Bluetooth® connection.....	26
11	Performing the measurement.....	29
11.1	Saving an image with preview.....	29
11.2	Setting measuring functions.....	30
11.2.1	Pixel mark.....	32
11.2.2	New Min/Max on area	33
11.2.3	Differential temperature.....	34
11.2.4	External values	35
11.2.5	SiteRecognition.....	36
11.2.6	IFOV.....	37
11.2.7	Isotherm.....	38
11.2.8	Alarm.....	39

Contents


11.2.9	Zoom.....	41
11.3	Image gallery.....	42
11.4	Scale.....	44
11.5	Emissivity.....	47
11.5.1	Selecting the emissivity.....	49
11.5.2	Customizing the emissivity.....	50
11.5.3	Setting RTC.....	50
11.5.4	Setting ϵ -Assist.....	51
11.6	Palette.....	52
11.7	Image type.....	53
11.8	SiteRecognition.....	54
11.9	Voice annotation.....	55
11.10	Configuration.....	56
11.10.1	Settings.....	56
11.10.2	SuperResolution.....	63
11.10.3	Save JPEG.....	63
11.10.4	Connectivity.....	64
11.10.5	Protective glass.....	65
11.10.6	Lens.....	66
11.10.7	Quick select button.....	68
11.10.8	Ambient conditions.....	68
11.10.9	Color selection.....	70
11.10.10	Info.....	71
11.10.11	Certificates.....	72
11.10.12	Fullscreen mode.....	74
11.10.13	Reset options.....	75
11.10.13.1	Reset counter.....	75
11.10.13.2	Factory settings.....	77
11.10.13.3	Formatting.....	78
12	Maintenance.....	80
12.1	Charging the rechargeable battery.....	80
12.2	Changing the rechargeable battery.....	80
12.3	Cleaning the instrument.....	82
12.4	Firmware update.....	83
12.4.1	Performing an update using IRSoft.....	83
12.4.1.1	Preparing the camera.....	83
12.4.1.2	Performing an update.....	83
12.4.2	Performing an update with the camera.....	84
12.4.2.1	Preparing the camera.....	84
12.4.2.2	Performing an update.....	84

13	Technical data	86
13.1	Optical data	86
13.2	Image presentation	86
13.3	Data interfaces	87
13.4	Measuring functions.....	87
13.5	Imager features	88
13.6	Image storage.....	89
13.7	Audio functions.....	89
13.8	Power supply	89
13.9	Ambient conditions	89
13.10	Physical features	90
13.11	Standards, tests.....	90
14	Questions and answers	91
15	Accessories	91

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

Symbols and writing standards

Display	Explanation
	Note: basic or further information.
1. ... 2. ...	Action: several steps, the sequence must be followed.
• ...	List
> ...	Action: one step or optional step.
- ...	Result of an action.
✓ ...	Requirement
1... 2...	Position numbers for the clarification of the relationship between text and picture.
Menu	Elements of the instrument, the instrument display or the program interface.
[OK]	Control keys of the instrument or buttons of the program interface.
... ...	Functions/paths within a menu.
“...”	Example entries

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

6 Scope of delivery

testo 883 Individual unit in a case	testo 883 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.

Areas of application



- Preventive maintenance / servicing: Electrical and mechanical inspection of systems and machines
- Building inspection: Energy efficiency rating of buildings (heating, ventilation, air-conditioning trade, building engineers, engineering firms, experts)
- Production monitoring / quality assurance: monitoring of production processes

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 - key	- Switch camera on and off - Cancel action

7 Product description

Element	Function
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
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

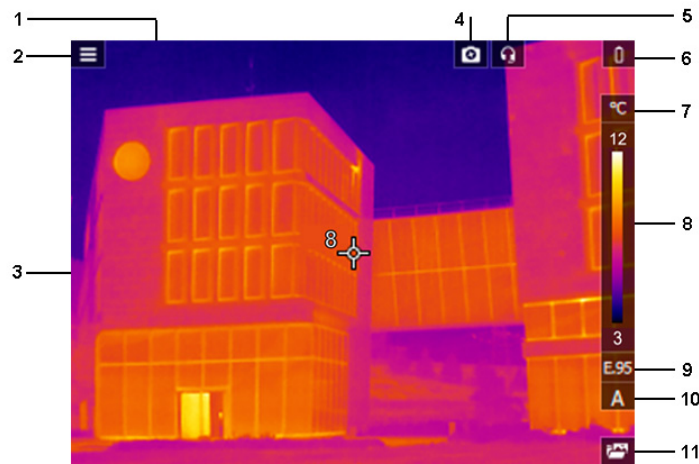











Laser radiation! Class 2 laser
 - **Do not look into the laser beam**



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: <ul style="list-style-type: none"> • 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
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.

7 Product description

Element	Function
8 Scale	<ul style="list-style-type: none">- 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.

7.2 Power supply

The power is supplied to the instrument via a replaceable rechargeable battery or the mains unit provided (battery must be inserted).

With an attached mains unit, power is supplied automatically via the mains unit and the rechargeable battery is charged (only at ambient temperatures from 0 to 35 °C).

It is also possible to charge the battery using a charging station (accessory).


To maintain system data during a power interruption (e.g. when changing the battery), the data is stored temporarily.

8 Commissioning

8.1 Touchscreen operating concept

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

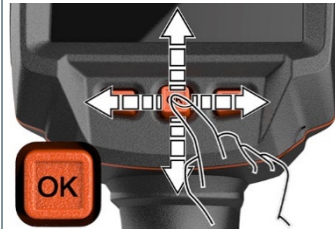
Actions are carried out by:

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

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.



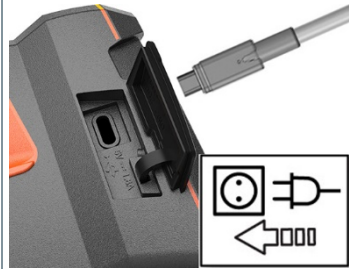
- 3 Close the battery compartment cover and secure with the unlocking button.



▶ 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.

i 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.

i 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.

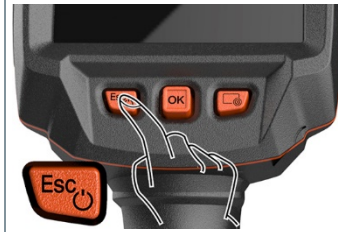
8.4 Switching the instrument on and off

Switching on the camera

- 1 Remove protective cap from the lens.




- 2 Press .
- ▶ The camera starts.
 - ▶ The start screen appears on the display.



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.




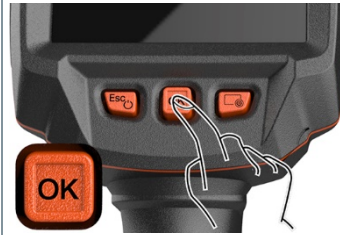
- ▶ The display goes off.
- ▶ The camera is switched off.

8.5 Getting to know the menu

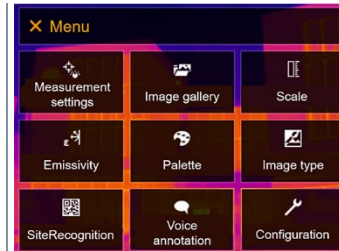


testo 883 can also be operated via the monitor's touchscreen feature.

- 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.

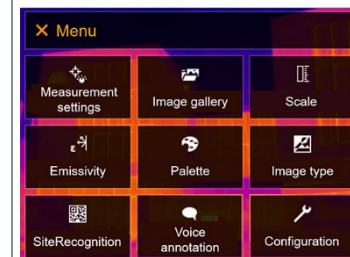
8 Commissioning

Quick select menu items

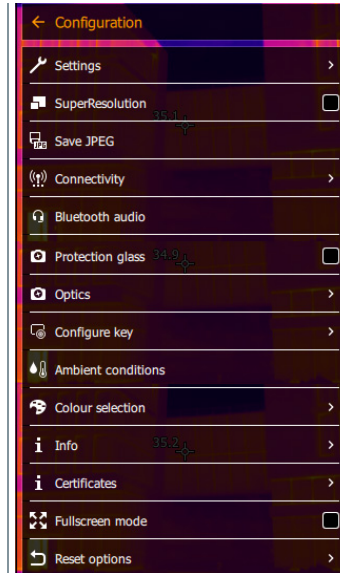
Menu item	Function
Image gallery	Opens an overview of saved images.
Scale (This function is only available if the Image type is set to infrared)	Set scale limits.
Emissivity (This function is only available if the Image type is set to infrared)	Set emissivity (E) and reflected temperature (RTC).
Palette	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

Changing assignment

- 1 Move the **joystick** to the right.
- 1.1 Open the **Menu**.
- 1.2 Select **Configuration** (joystick or touchscreen).

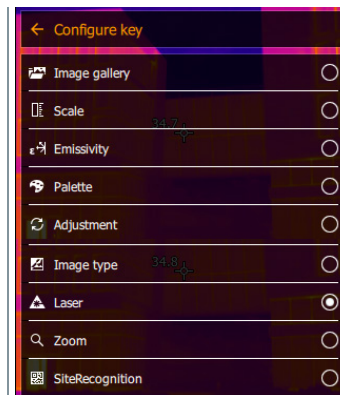


- ▶ Configuration opens.



- 1.3 Select **Configure key** (joystick or touchscreen).

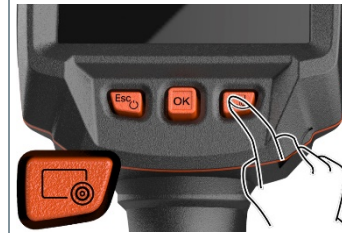
- ▶ The **Configure key** selection menu opens. The activated function is marked with a dot (●).



- 2 Select the required menu item (joystick or touchscreen).
- ▶ The quick select button is assigned to the selected menu item.
 - ▶ The icon for the selected function is displayed bottom right.

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, .



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.



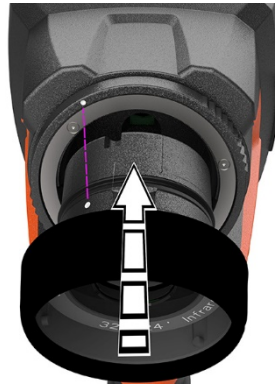
3 Remove lens.



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.

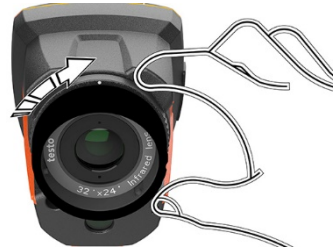


8 Commissioning

- 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



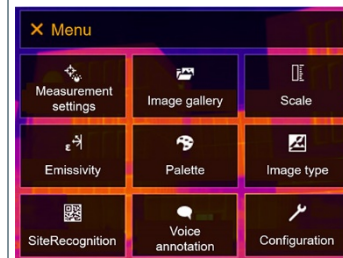
To connect via WLAN, you need a tablet or smartphone with the **testo Thermography App** already installed on it.

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

Compatibility:

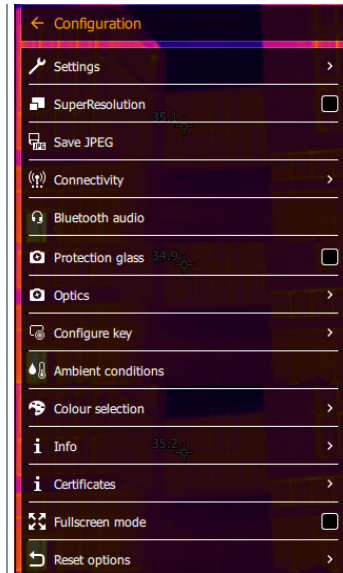
Requires iOS 8.3 or later / Android 4.3 or later.

1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

▶ **Configuration** opens.



3 Select **Connectivity** (joystick or touchscreen).

9 WLAN connection – using the App

▶ **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.

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

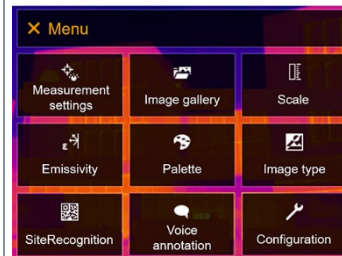
A connection between the thermal imager and the testo 605i humidity probe or testo 770-3 clamp meter can be established via Bluetooth®.

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.



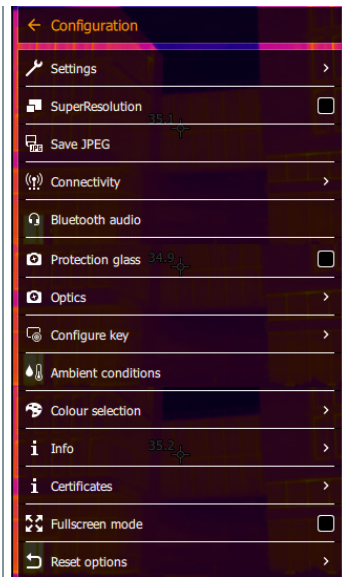
Bluetooth® 4.0 required.

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration** opens.



- 3 Select **Connectivity** (joystick or touchscreen).

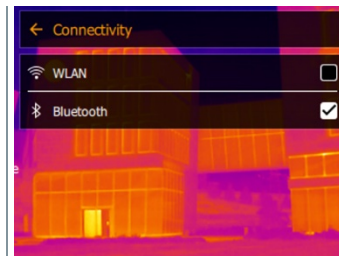
10 Bluetooth® connection

- ▶ Connectivity opens.



- 4 Select **Bluetooth®** (joystick or touchscreen).

- ▶ A check mark appears if Bluetooth® is enabled.

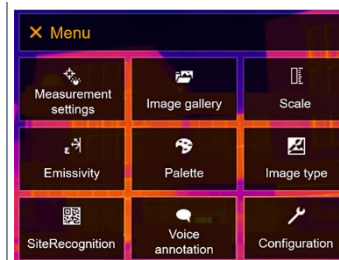


Explanation of Bluetooth® icons

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

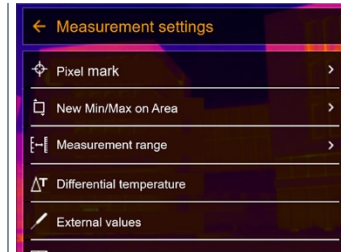
- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

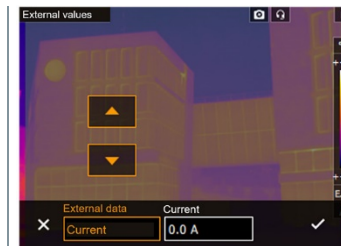
10 Bluetooth® connection

- ▶ 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



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.

Ideal framework conditions

Building thermography, investigating the building shell:
Considerable temperature difference between inside and outside required
(ideal: ≥ 15 °C / ≥ 27 °F).
Consistent weather conditions, no intensive sunlight, no precipitation, no
strong wind.
To ensure maximum accuracy, the camera requires an adjustment time of
15 minutes after it is switched on.

Important camera settings

- Emissivity and reflected temperature must be set correctly in order to precisely determine the temperature. Subsequent adjustment is possible via the PC software, if required.
- When auto-scaling is activated, the colour scale is continuously adjusted to the min./max. values of the current measurement image. This means that the colour assigned to a specific temperature is changing constantly! To be able to compare multiple images based on the assigned colour, scaling must be set manually to fixed values, or must be subsequently adjusted to uniform values using the PC software.

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.

11 Performing the measurement

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.

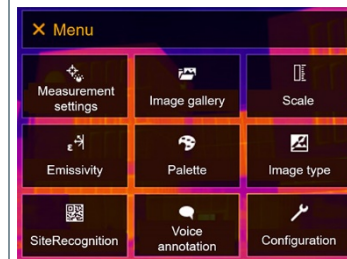
11.2 Setting measuring functions

- 1 Open **Measurement** submenu (joystick or touchscreen).
- ▶ The **Measurement** submenu opens with the measurement settings:
 - **Pixel mark:**
 - **New measuring spot:** A new measuring point can be added, moved or removed.
 - **Edit/Remove measurement point...**
 - **Measurement point 1**
 - **Measurement point 2**
 - ...
 - **Center spot:** the temperature measuring point in the centre of the image is marked with white crosshairs and the value is displayed.
 - **Hotspot:** the highest temperature measuring point is marked with red crosshairs and the value is displayed.

- **Coldspot:** the lowest temperature measuring point is marked with blue crosshairs and the value is displayed.
 - **Show all / Hide all:** Show or hide the centre point, hotspot and coldspot.
 - **New Min/Max on area:**
 - **Min/Max on area:** Area in the centre of the image is shown. The minimum, maximum, and average values for the area are displayed.
 - **Hotspot:** the highest temperature measuring point within the range selection is marked with blue or red crosshairs and the value is displayed.
 - **Coldspot:** the lowest temperature measuring point within the range selection is marked with blue or red crosshairs and the value is displayed.
 - **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.
 - Difference between two measuring points
 - Difference between measuring point and input value
 - Difference between measuring point and value of an external probe
 - 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 warning 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).

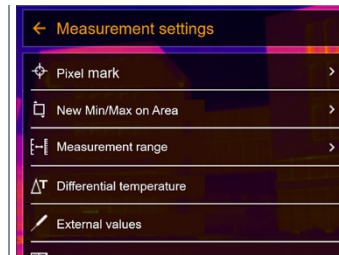
11.2.1 Pixel mark

1 Open the **Menu**.



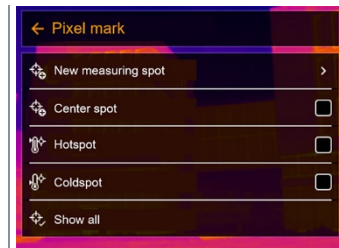
2 Select **Measurement settings** (joystick or touchscreen).

▶ **Measurement settings** opens.



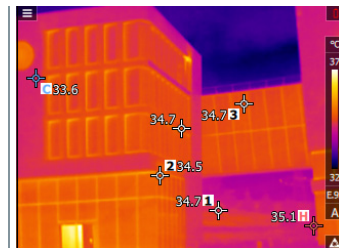
3 Select **Pixel mark** (joystick or touchscreen).

▶ The **Pixel mark** submenu opens.



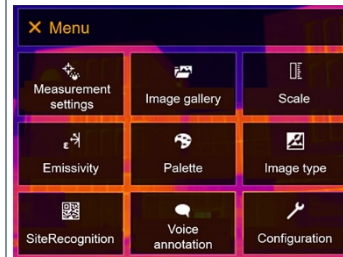
4 Select **Settings** (joystick or touchscreen).

▶ **Measurement view** is displayed.



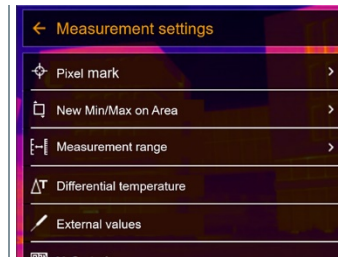
11.2.2 New Min/Max on area

1 Open the **Menu**.



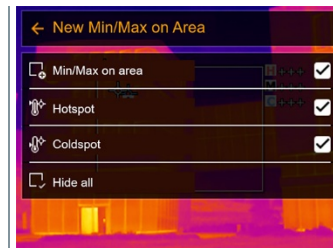
2 Select **Measurement settings** (joystick or touchscreen).

▶ **Measurement settings** opens.



3 Select **New Min/Max on area** (joystick or touchscreen).

▶ **New Min/Max on area** submenu opens.



4 Select **Settings** (joystick or touchscreen).

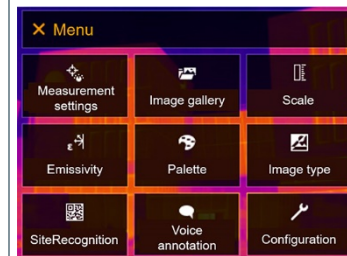
▶ **Measurement view** is displayed.



11.2.3 Differential temperature

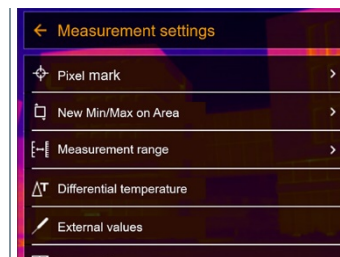
Differential temperature enables the temperatures between two measuring points to be calculated.

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



- 3 Select **Differential temperature** (joystick or touchscreen).

- ▶ **Differential temperature** opens.



- 4 Select the differential temperature to be calculated (joystick or touchscreen) (**PA vs. PB**, **PA vs. Probe**, **PA vs. Value**, **PA vs. RTC**).

- 4.1 **PA vs. PB** selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.

11 Performing the measurement

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **B** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- End measurement: Move the **joystick** to the right (or via touchscreen), and confirm with **✓**.

4.2 PA vs. Probe selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- End measurement: Move the **joystick** to the right (or via touchscreen), and confirm with **✓**.

4.3 PA vs. Value selection:

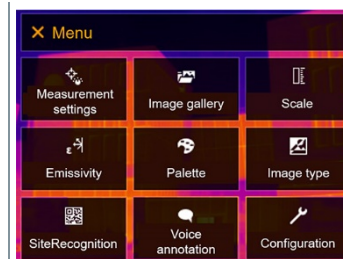
- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- Move the **joystick** to the right (or via touchscreen), set the value manually.
- End measurement: Move the **joystick** to the right (or via touchscreen), and confirm with **✓**.

4.4 PA vs. RTC selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- Move the **joystick** to the right (or via touchscreen), set the value manually.
- End measurement: Move the **joystick** to the right (or via touchscreen), and confirm with **✓**.

11.2.4 External values

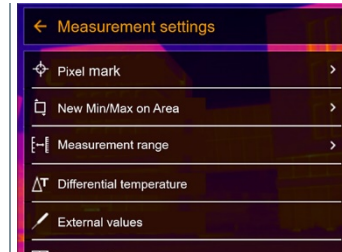
- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

11 Performing the measurement

▶ Measurement settings opens.



3 Select **External values** (joystick or touchscreen).

▶ External values opens.



4 Activate **humidity, current, voltage, solar or power**.



If no **radio probe** is connected, **values** must be entered manually.

If a **radio probe** is connected, **values** are transferred automatically.



The probe or the radio link to the probe must be activated in the **Configuration** -> **Connectivity** menu. See Section 11.10.4 **Connectivity**.

5 Confirm with ✓.




Values for current, voltage and power can be transferred from the testo 770-3 clamp meter.

11.2.5 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** function (joystick or touchscreen).
 - ▶ 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

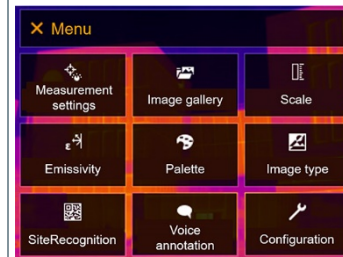
- 1 Position the imager so that the marker is inside the position frame.
- 2 After recognition of the marker ID: confirm transfer of measuring site data.
 - ▶ The thermographic image that is taken next is assigned to the measuring location.

 Several images can be saved for the same measuring location.

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

11.2.6 IFOV

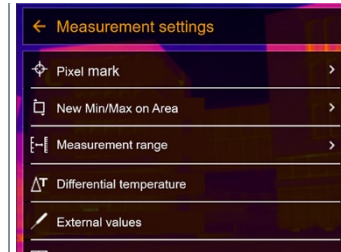
- 1 Open the **Menu**.



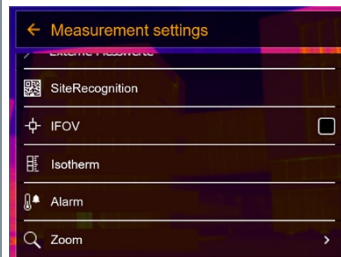
- 2 Select **Measurement settings** (joystick or touchscreen).

11 Performing the measurement

▶ **Measurement settings** opens.



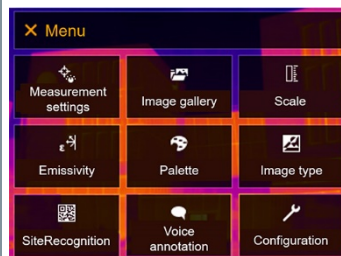
3 Select **IFOV** (joystick or touchscreen).



▶ IFOV is enabled or disabled.

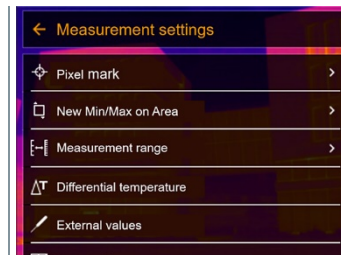
11.2.7 Isotherm

1 Open the **Menu**.



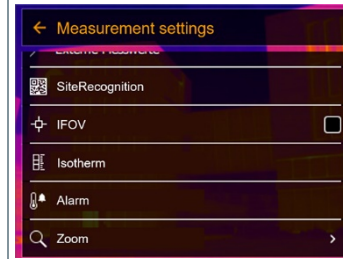
2 Select **Measurement settings** (joystick or touchscreen).

▶ **Measurement settings** opens.

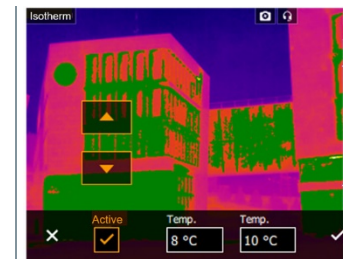


11 Performing the measurement

- 3 Select **Isotherm** (joystick or touchscreen).



- ▶ Isotherm opens.



- 4 limit values can be set.

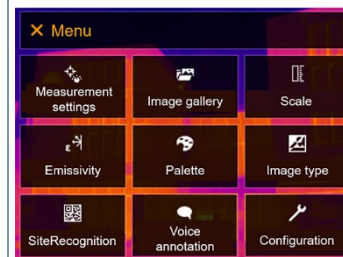
- 5 Confirm with ✓.



The colours for the markings can be specified in the **Configuration** -> **Color selection** menu.

11.2.8 Alarm

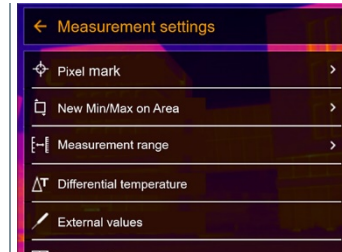
- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

11 Performing the measurement

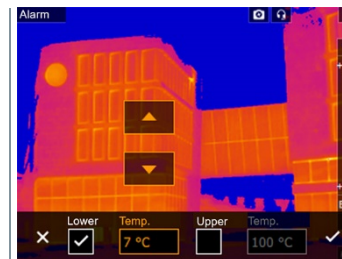
▶ Measurement settings opens.



3 Select **Alarm** (joystick or touchscreen).



▶ Alarm opens.



4 Upper and lower alarm limits can be set and activated individually.

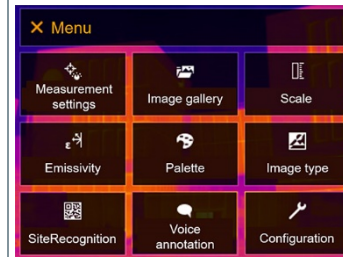
5 Confirm with ✓.



The colours for the markings can be specified in the **Configuration** -> **Color selection** menu.

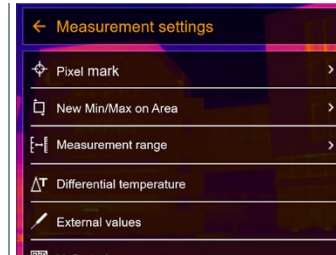
11.2.9 Zoom

1 Open the Menu.

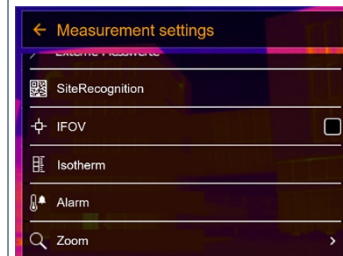


2 Select **Measurement settings** (joystick or touchscreen).

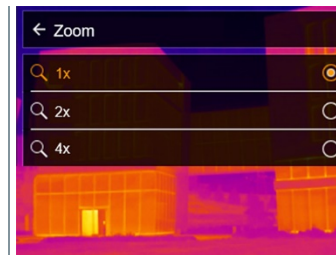
▶ **Measurement settings** opens.



3 Select **Zoom** (joystick or touchscreen).



▶ **Zoom** opens.




4 Select the required zoom factor (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 000000 SR	Infrared image with attached real image Consecutive number Images captured with SuperResolution



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

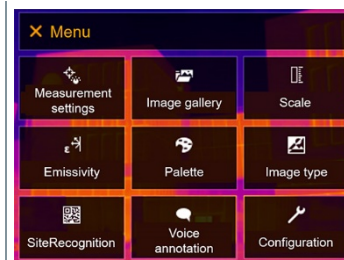
Displaying a saved image

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



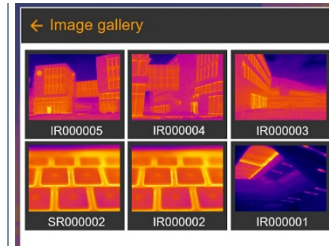
When SuperResolution is enabled, 2 images are saved in the image gallery (an IR image, and an SR image). The high-resolution SuperResolution image is saved in the background. In the status bar, the number of SuperResolution images to be saved is displayed (for example: SR(1)). A maximum 5 SuperResolution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

- 1 Open the **Menu**.



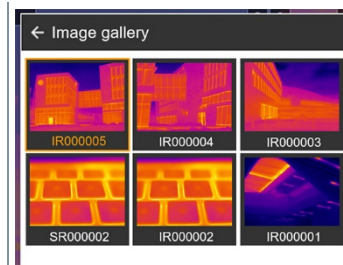
- 2 Select **Image gallery** (joystick or touchscreen).

- ▶ Image gallery opens.



- ▶ All saved images are displayed in the form of an infrared image preview.

- 3 Select image (joystick or touchscreen).



- ▶ The image is displayed.

Analyzing an image



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.

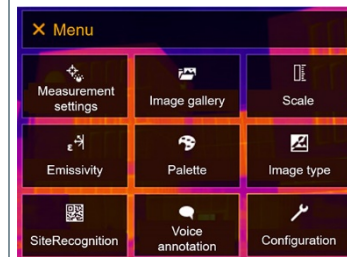
Analyze stored images using the measurement functions **Single point measurement**, **Hotspot**, **Coldspot**, **Additional measurement points**, **Differential temperature**, **Isotherm** and **Alarm**.

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

11 Performing the measurement

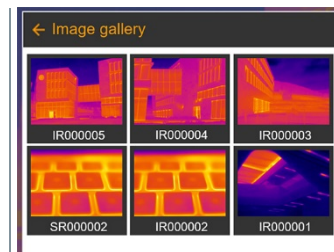
Delete image



- 1 Open the **Menu**.



- 2 Select **Image gallery** (joystick or touchscreen).

- ▶ **Image gallery** opens.



- ▶ All saved images are displayed in the form of an infrared image preview.
- 3 Move **joystick** to select an image.
 - 4 Press **Ok** to open an image.
 - 5 Press  or  at bottom right.
 - ▶ **Delete image?** is displayed. - 6 Confirm selection with **✓** or exit the menu with **X**.

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.

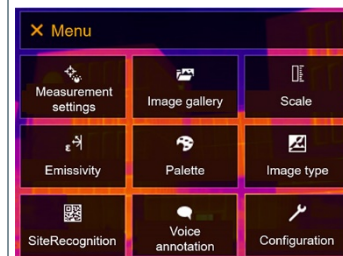


Auto-scaling continuously adjusts the scale to the readings presented, and the colour assigned to a temperature value changes. In manual scaling fixed limit values are defined, and the colour assigned to a temperature value is fixed (important for visual image comparisons). Scaling influences the way 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 automatic scaling

- 1 Open the **Menu**.



- 2 Select **Scale** (joystick or touchscreen).

▶ **Scale** opens.

- 3 Select **Auto**.



- 4 Confirm selection with ✓ or exit the menu with X.

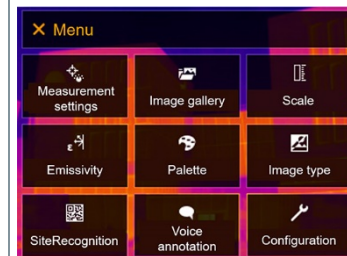
▶ Automatic scaling is activated. **A** is displayed bottom right.

Setting manual scaling

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

11 Performing the measurement

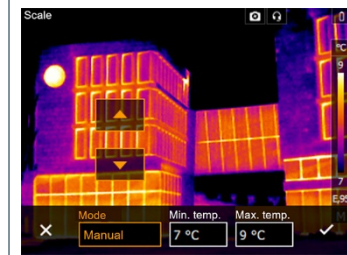
1 Open the **Menu**.



2 Select **Scale** (joystick or touchscreen).

▶ **Scale** opens.

3 Select **Manual**.



4 Move the **joystick** to the right, select **Min.Temp.** (lower limit value).

4.1 Move the **joystick** to the right, select **Min.Temp.** (lower limit value) and **Max.Temp.** (upper limit value).

Move the **joystick** up/down to set the values.

4.2 Move the **joystick** to the right, select **Max.Temp.** (upper limit value).

Move the **joystick** up/down to set the value.

4.3 If necessary, move the **joystick** to the left, back to the mode menu.

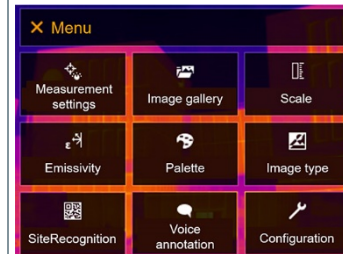
5 Confirm selection with **✓** or exit the menu with **X**.

▶ Manual scaling is activated. **M** is displayed bottom right.

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.

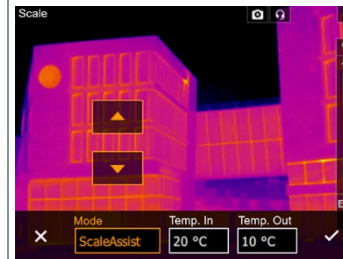
- 1 Open the **Menu**.



- 2 Select **Scale** (joystick or touchscreen).

▶ **Scale** opens.

- 3 Select **ScaleAssist**.



- 4 Move the **joystick** to the right, select **Temp. In** (indoor temperature).

Move the **joystick** up/down to set the value.

- 5 Move the **joystick** to the right, select **Temp. Out** (outdoor temperature).

Move the **joystick** up/down to set the value.

- 6 If necessary, move the **joystick** to the left, back to the mode menu.

- 7 Confirm selection with ✓ or exit the menu with X.

▶ Manual scaling is activated. **S** is displayed at bottom right.

11.5 Emissivity

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

11 Performing the measurement



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.

Material (material temperature)	Emissivity
Aluminium, bright rolled (170 °C)	0.04
Cotton (20 °C)	0.77
Concrete (25 °C)	0.93
Ice, smooth (0 °C)	0.97
Iron, emery-ground (20 °C)	0.24
Iron with casting skin (100 °C)	0.80
Iron with rolling skin (20 °C)	0.77
Gypsum (20 °C)	0.90
Glass (90 °C)	0.94
Rubber, hard (23 °C)	0.94
Rubber, soft grey (23 °C)	0.89
Wood (70 °C)	0.94
Cork (20 °C)	0.70
Radiator, black anodised (50 °C)	0.98
Copper, slightly tarnished (20 °C)	0.04
Copper, oxidised (130 °C)	0.76
Plastics: PE, PP, PVC (20 °C)	0.94
Brass, oxidised (200 °C)	0.61
Paper (20 °C)	0.97
Porcelain (20 °C)	0.92
Black paint, matt (80 °C)	0.97
Steel, heat-treated surface (200 °C)	0.52

Material (material temperature)	Emissivity
Steel, oxidised (200 °C)	0.79
Clay, burnt (70 °C)	0.91
Transformer paint (70 °C)	0.94
Brick, mortar, plaster (20 °C)	0.93

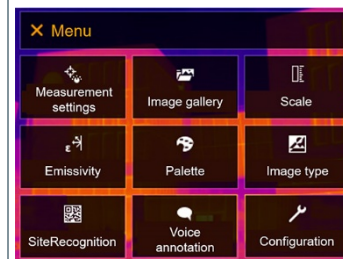
Reflected temperature information:

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.

11.5.1 Selecting the emissivity

1 Open the **Menu**.



2 Select **Emissivity** (joystick or touchscreen).

▶ **Emissivity** opens.

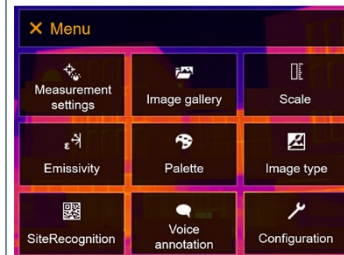
3 Select **Substance**.



4 Confirm selection with ✓ or exit the menu with X.

11.5.2 Customizing the emissivity

- 1 Open the **Menu**.



- 2 Select **Emissivity** (joystick or touchscreen).

▶ **Emissivity** opens.

- 3 Under **Substance**, select **User defined**.

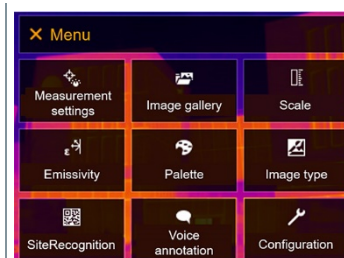


- 4 Select **E** and set the value.

- 5 Confirm selection with ✓ or exit the menu with X.

11.5.3 Setting RTC

- 1 Open the **Menu**.



- 2 Select **Emissivity** (joystick or touchscreen).

▶ **Emissivity** opens.

11 Performing the measurement

3 Select **Substance**.



4 Select **RTC** and set the value.



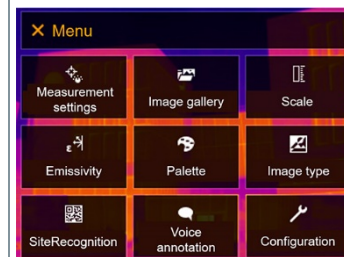
5 Confirm selection with **✓** or exit the menu with **X**.

11.5.4 Setting ϵ -Assist



An additional marker for the ϵ -assist function is required for this function. Additional markers for the ϵ -assist function are available as accessories.

1 Open the **Menu**.

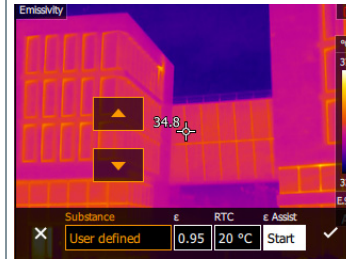


2 Select **Emissivity** (joystick or touchscreen).

▶ **Emissivity** opens.

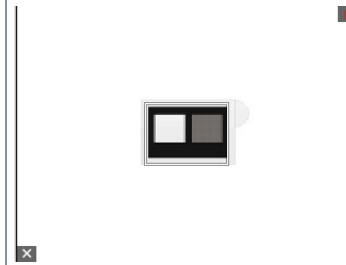
11 Performing the measurement

3 Select **Substance**.



4 Select **ε-Assist**.

5 Attach the **ε**-marker to the object.



▶ RTC and emissivity are automatically adjusted.

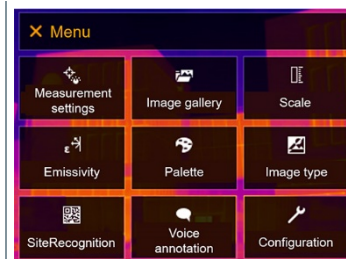
6 Confirm selection with **✓** or exit the menu with **X**.



If it is not physically possible to determine the emissivity due to the same object temperature and reflected temperature, the input field opens again. The emission value must be input manually.

11.6 Palette

1 Open the **Menu**.



2 Select **Palette** (joystick or touchscreen).

▶ **Palette** opens.

- 3 Select the required colour palette (joystick or touchscreen).



- ▶ The colour palette is marked ✓.

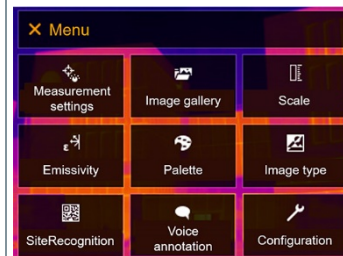


In the live image, the palette can be changed by moving the joystick up or down.

11.7 Image type

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

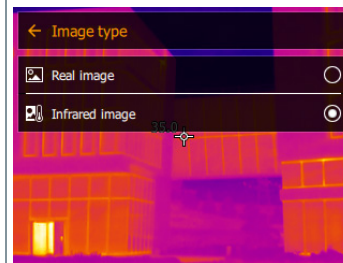
- 1 Open the **Menu**.



- 2 Select **Image type** (joystick or touchscreen).

- ▶ **Image type** opens.

- 3 Select the required image type (joystick or touchscreen).

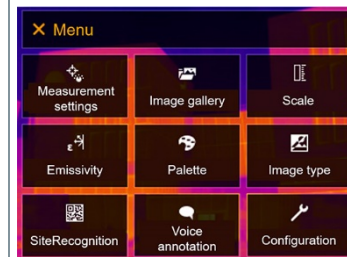


- ▶ The activated image type is marked with a dot (●).

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.

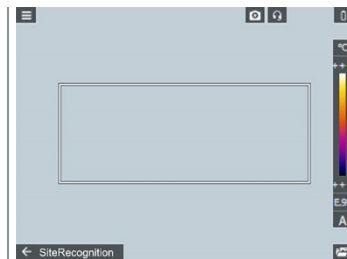
- 1 Open the **Menu**.



- 2 Select **SiteRecognition** (joystick or touchscreen).

▶ **SiteRecognition** opens.

▶ The real image is displayed and a position frame is shown.



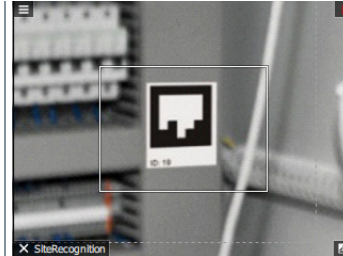
To quickly change the measuring locations, SiteRecognition can be assigned to the quick select button.

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.

11 Performing the measurement

- ▶ The thermographic image that is taken next is assigned to the measuring location.



Several images can be saved for the same measuring location.



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

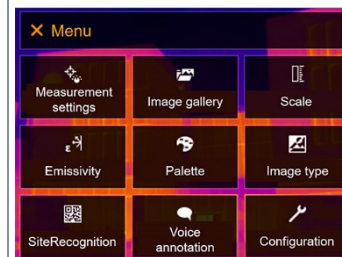
11.9 Voice annotation



Voice annotation can only be used when an image is active on the display.

- ✓ An image has just been created or selected from the image gallery.


- 1 Open the **Menu**.

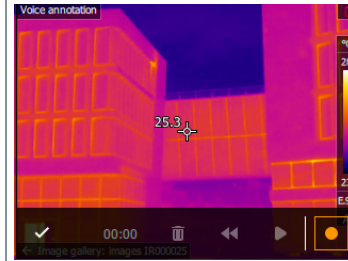


- 2 Select **Voice annotation** (joystick or touchscreen).


- ▶ **Voice annotation** opens.

11 Performing the measurement


3 Click on recording .




▶ Recording timer starts running.

4 Click on stop recording .



5 The recording can be played back ,
rewound or deleted.



6 Press  to confirm the recording.

▶ The voice annotation is stored in the image.

11.10 Configuration

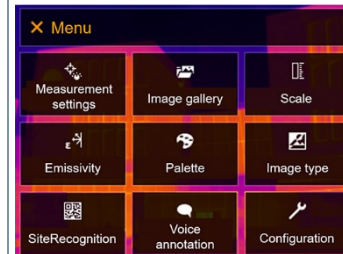
11.10.1 Settings

Country settings

The user interface language can be set.

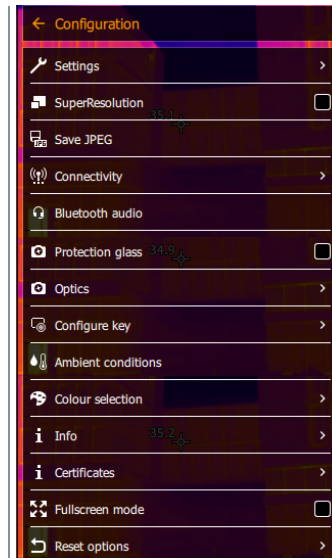
11 Performing the measurement

1 Open the Menu.



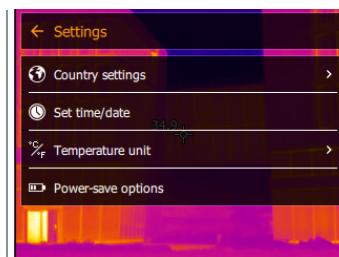
2 Select **Configuration** (joystick or touchscreen).

▶ **Configuration** opens.



3 Select **Settings** (joystick or touchscreen).

▶ **Settings** opens.



4 Select **Country settings**.

11 Performing the measurement

▶ [Country settings] opens.

5 Select the required language (joystick or touchscreen).

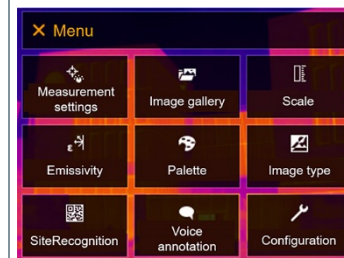


▶ The activated language is marked with a dot (●).

Set time/date

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

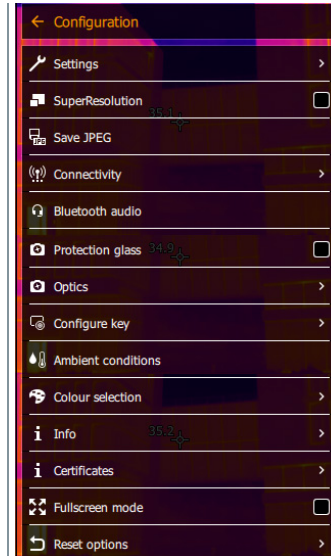
1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

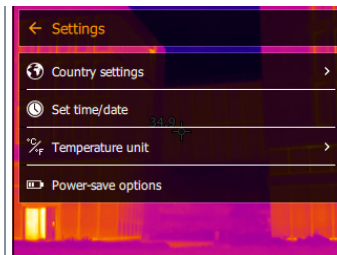
11 Performing the measurement

► Configuration opens.



3 Select **Settings** (joystick or touchscreen).

► Settings opens.



4 Select **[Set time/date]** (joystick or touchscreen).

► **[Set time/date]** opens.

5 Set the time and date (joystick or touchscreen).



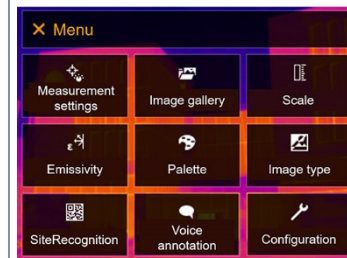
11 Performing the measurement

- 6 Confirm selection with ✓ or exit the menu with X.

Temperature unit

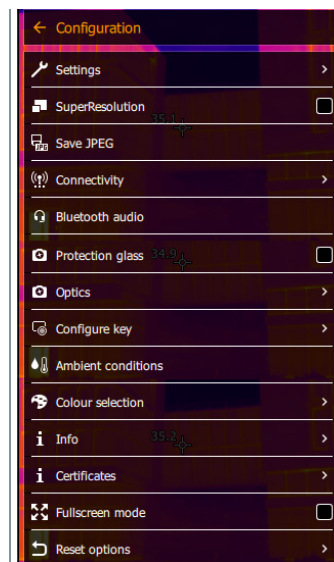
The temperature unit can be set.

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

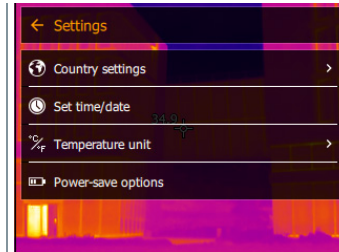
- ▶ **Configuration** opens.



- 3 Select **Settings** (joystick or touchscreen).

11 Performing the measurement

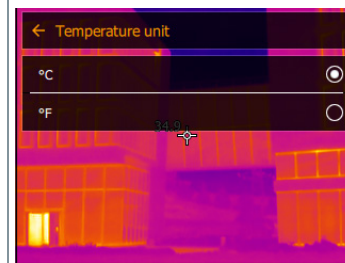
- ▶ Settings opens.



- 4 Select [Temperature unit] (joystick or touchscreen).

- ▶ [Temperature unit] opens.

- 5 Set the temperature unit (joystick or touchscreen).



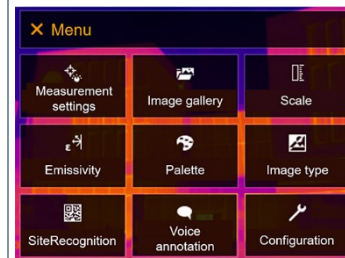
- ▶ The activated temperature unit is marked with a dot (●).

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.

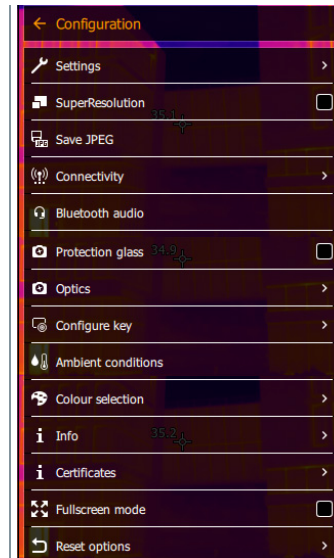
- 1 Open the Menu.



- 2 Select Configuration (joystick or touchscreen).

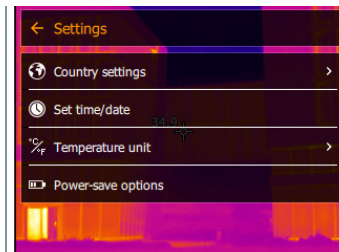
11 Performing the measurement

▶ Configuration opens.



3 Select **Settings** (joystick or touchscreen).

▶ Settings opens.



4 Select **[Power-save options]** (joystick or touchscreen).

▶ **[Power-save options]** opens.

5 Set the power-save options (joystick or touchscreen).



- 6 Confirm selection with ✓ or exit the menu with X.

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:

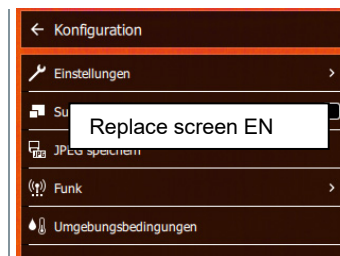
- The camera is hand-held.
- The objects to be imaged do not move.

- 1 Open the **SuperResolution** function.
- 2 Press **OK** to enable or disable the function.

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.

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



- 3 Select **Save JPEG** (joystick or touchscreen).
- 3 Move the joystick up/down until **On/Off** is selected.
- 4 Press **OK**.

11 Performing the measurement

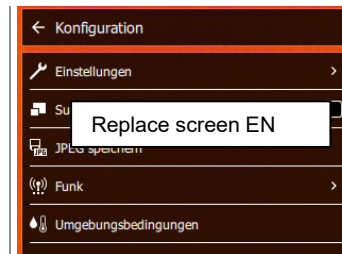
- 5 Add a date/time stamp to a JPEG file if required. Turn function on or off for this.
- 6 Confirm with ✓.

11.10.4 Connectivity

Enable/disable WLAN or Bluetooth®.

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

▶ **Configuration** opens.



- 3 Select **Connectivity** (joystick or touchscreen).

▶ **Connectivity** opens.



- 4 Select **WLAN** or **Bluetooth** and press **OK**
- 5 Press **Esc** to cancel the process.



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

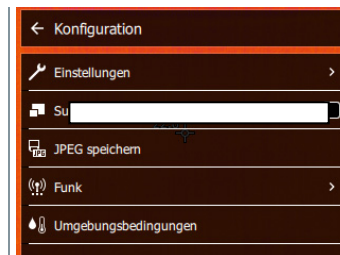
Use the **Protective glass** option to select whether or not to use an IR protective glass.



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

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

▶ **Configuration** opens.



- 3 Select **Protective glass** (joystick or touchscreen).

11 Performing the measurement

- ▶ **Protective glass** is enabled (✓) or disabled.



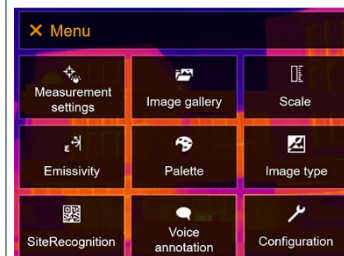
Using the protective glass protects the optics from environmental influences such as dust, scratches, etc. When the protective glass is used, there may be slight variations in the displayed temperature.

11.10.6 Lens



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

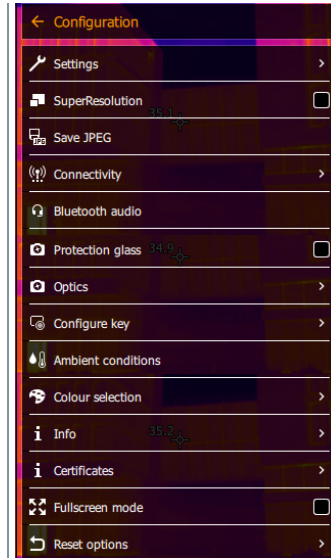
- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

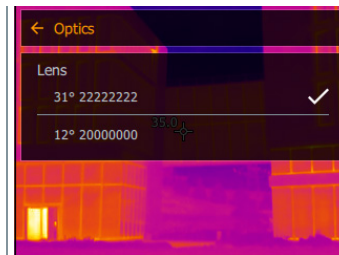
11 Performing the measurement

▶ Configuration opens.



3 Select **Optics** (joystick or touchscreen).

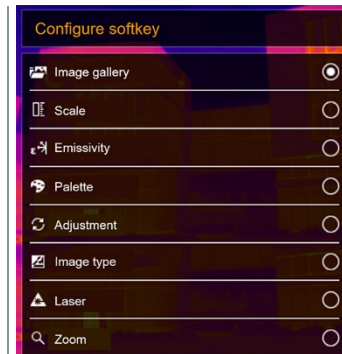
▶ Optics opens.



▶ The lens used is marked ✓.

11.10.7 Quick select button

- 1 Move the **joystick** to the right.
 - ▶ The **Configure key** selection menu opens. The activated function is marked with a dot (●).



- 2 Select the required menu item (joystick or touchscreen).
 - ▶ The activated function is marked with a dot (●).

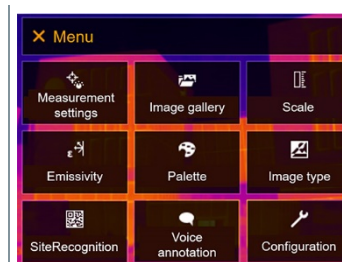
11.10.8 Ambient conditions

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.

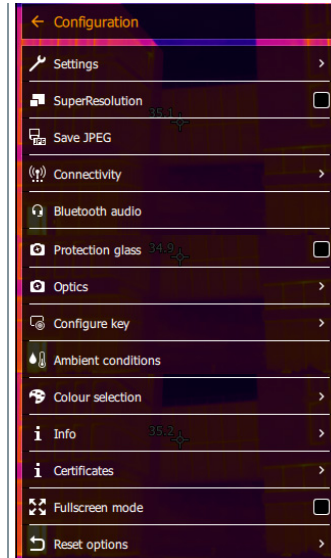
- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

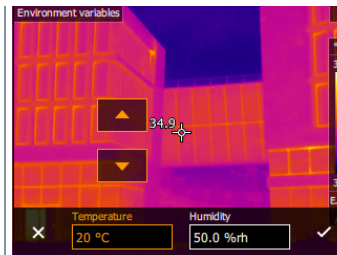
11 Performing the measurement

- ▶ Configuration opens.



- 3 Select **Ambient conditions** (joystick or touchscreen).

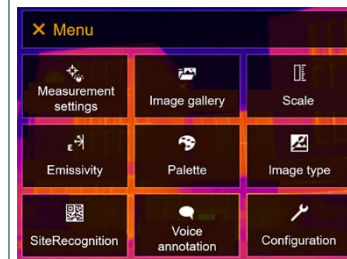
- ▶ Ambient conditions opens.



- 4 Select the required setting (joystick or touchscreen).
- 5 Confirm selection with ✓ or exit the menu with X.

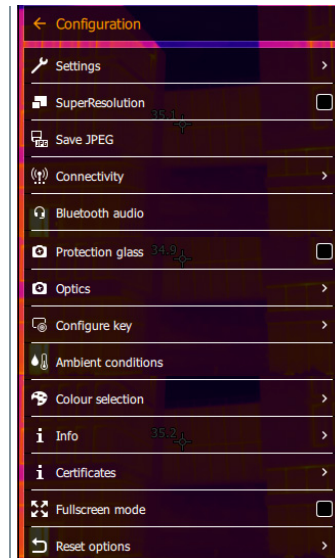
11.10.9 Color selection

1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

▶ **Configuration** opens.



3 Select **Color selection** (joystick or touchscreen).

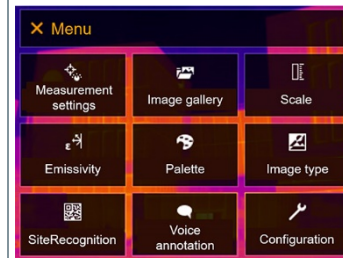
▶ **Color selection** opens.



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

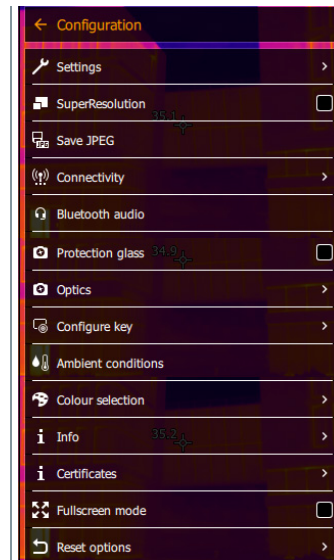
11.10.10 Info

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration opens.**



- 3 Select **Info** (joystick or touchscreen).

11 Performing the measurement

▶ Info opens.

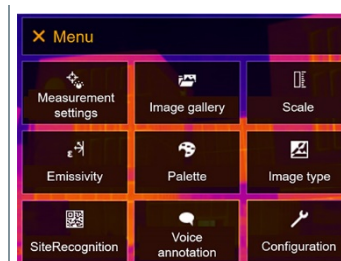


▶ The following information is displayed:

- Device data (e.g. serial number, device name, firmware version)
- Options
- Measuring functions
- Radio

11.10.11 Certificates

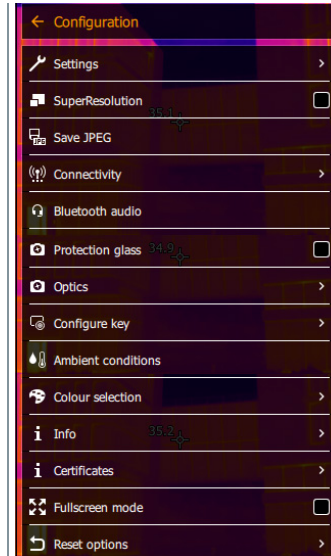
1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

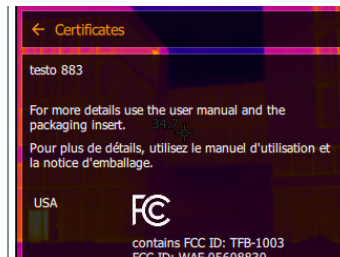
11 Performing the measurement

► Configuration opens.



3 Select **Certificates** (joystick or touchscreen).

► Certificates opens.

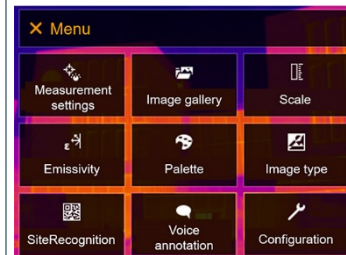


► Stored certificates are displayed.

11.10.12 Fullscreen mode

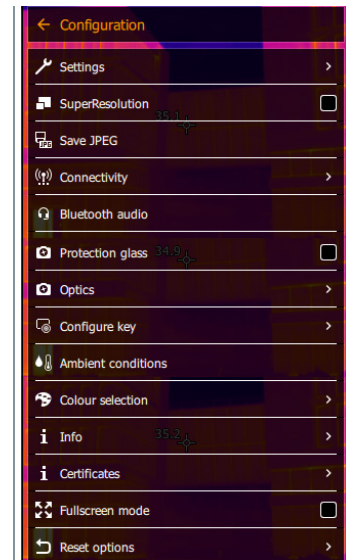
The scale and the quick select button function indicator can be hidden.

- 1 Open the **Menu**.



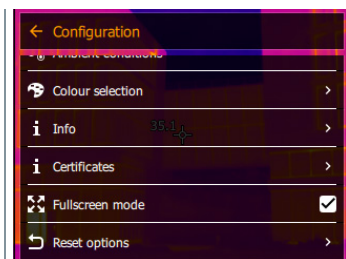
- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration** opens.



- 3 Select **Fullscreen mode** (joystick or touchscreen).

- ▶ **Fullscreen mode** opens.



- ▶ **Fullscreen mode** is enabled (✓) or disabled.
- ▶ 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.

11.10.13 Reset options

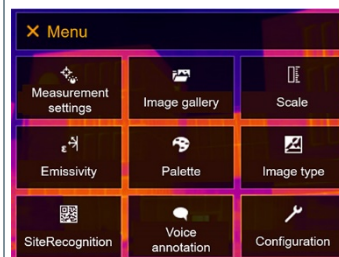
11.10.13.1 Reset counter



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.

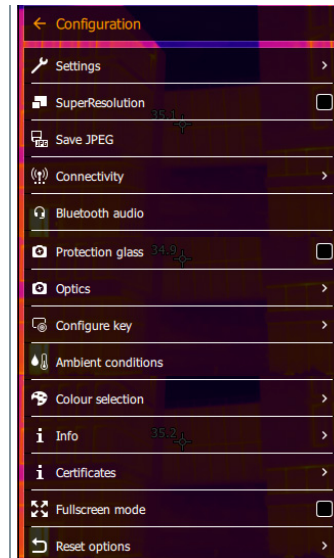
1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

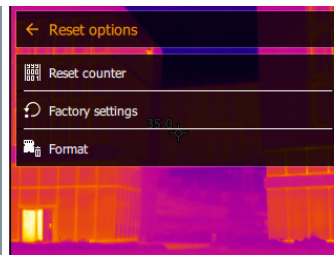
11 Performing the measurement

▶ Configuration opens.



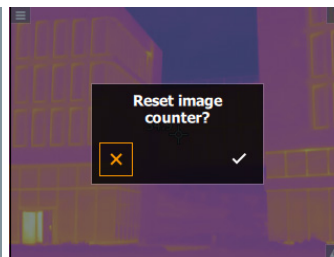
3 Select **Reset options** (joystick or touchscreen).

▶ Reset options opens.



4 Select **Reset counter**.

▶ Reset image counter? is displayed.



5 Press **✓** to confirm or press **X** to cancel the process.

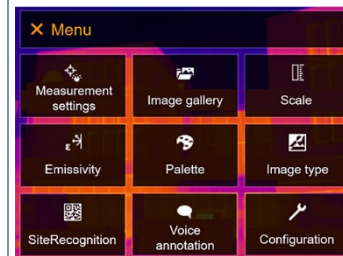
11.10.13.2 Factory settings

The instrument settings can be reset to the factory settings.



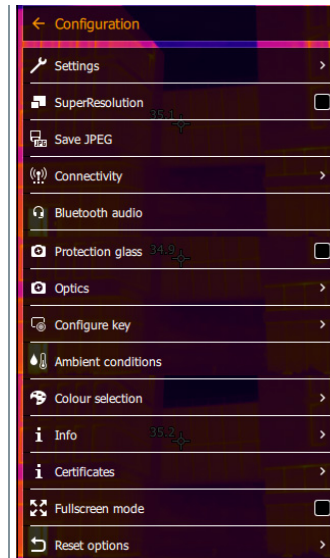
Time/date, country settings and counter are not reset.

1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

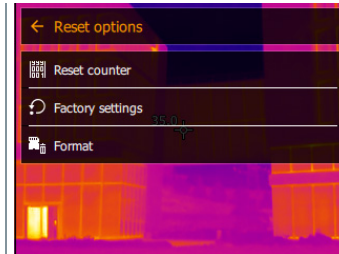
▶ **Configuration** opens.



3 Select **Reset options** (joystick or touchscreen).

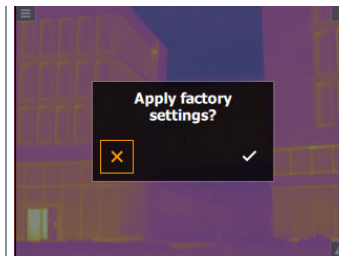
11 Performing the measurement

▶ **Reset options opens.**



4 Select **Factory settings**.

▶ **Apply factory settings?** is displayed.



5 Press **✓** to confirm or press **X** to cancel the process.

11.10.13.3 Formatting

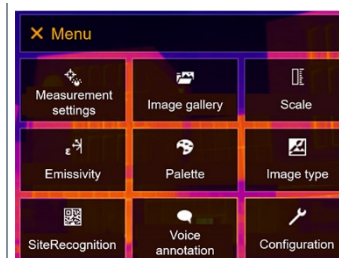
The image memory can be formatted.



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.

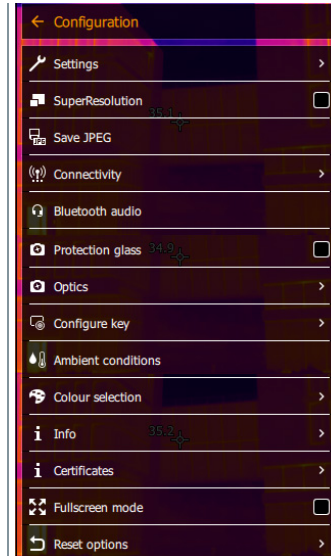
1 Open the **Menu**.



2 Select **Configuration** (joystick or touchscreen).

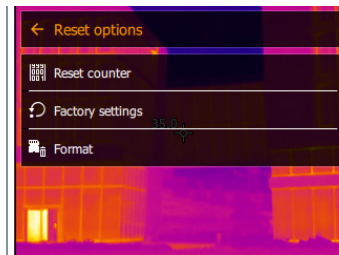
11 Performing the measurement

▶ Configuration opens.



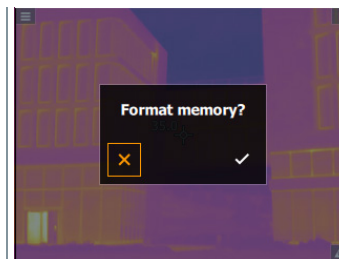
3 Select **Reset options** (joystick or touchscreen).

▶ Reset options opens.



4 Select **Format**.

▶ **Format memory?** is displayed.

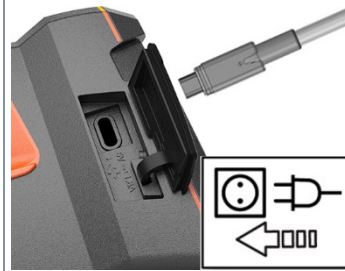


5 Press **✓** to confirm or press **X** to cancel the process.

12 Maintenance

12.1 Charging the rechargeable battery

- 1 Open the cover of the interface terminal.
- 2 Connect the charging cable to the USB-C port.
- 3 Connect the mains unit to a mains socket.




- ▶ The charging process starts.
If the battery has been completely drained, the charging time is approx. 6 hours with the mains unit supplied.
- ▶ The charge status is not displayed while the instrument is switched off.
- 4 Switch on the instrument to call up the charge status.

12.2 Changing the rechargeable battery

⚠ WARNING

Serious risk of injury to the user and/or destruction of the instrument

- > There is a risk of explosion if the battery is replaced with one that is the wrong type.
- > Dispose of spent/faulty batteries in accordance with the relevant legal specifications.

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



- ▶ The display goes off.

- 2 Pull back the unlocking button to open the battery compartment cover on the bottom of the handle.



The rechargeable battery is no longer secured and may fall out of the battery compartment. Make sure that you always open the battery compartment cover with it facing upwards.

- ▶ The rechargeable battery is released and slides out a little from the rechargeable battery slot.
- 3 Pull the rechargeable battery completely out of the battery compartment.



12 Maintenance

- 4 Push the new battery all the way into the rechargeable battery slot until it is flush with the bottom of the handle.



- 5 Close the battery compartment cover and secure with the unlocking button.



There is a tripod socket bushing on the base of the imager. A standard tripod can be used to mount the imager.



The supplied carrying strap can be attached to the tripod socket bushing.

12.3 Cleaning the instrument

Cleaning the instrument housing

- ✓ - The interface terminal is closed.
 - The battery compartment is closed.
- 1 - Rub down the surface of the instrument with a damp cloth. Use mild household cleaning agents or soapy water for this.

Cleaning the lens

- 1 If the lens is dirty, clean it with a cotton bud.

Cleaning the display

- 1 If the display is dirty, clean it with a cleaning cloth (e.g. microfibre cloth).

Cleaning the protective glass

- 1 Larger dust particles can be removed with a clean optical cleaning brush (available from specialized photo supplies).
- 2 Use a lens cleaning cloth for slight contamination. Do not use rubbing alcohol!

12.4 Firmware update

There are two options available:

- Performing an update using IRSoft or
- Performing an update with the thermal imager

Downloading firmware

- 1 Download firmware: **Firmware-testo-883.exe**.
 - 2 Unzip file: double-click on the .exe file.
- ▶ **FW_T883_Vx.xx.bin** is stored in the selected folder.

12.4.1 Performing an update using IRSoft

12.4.1.1 Preparing the camera

- ✓ The rechargeable battery is fully charged or the camera is connected to the mains adapter.
- 1 Connect the computer to the camera with the USB cable.
 - 2 Switch on the camera.
- ▶ Firmware is fully loaded.

12.4.1.2 Performing an update

- ✓ IRSoft is activated.
- 1 Select **Menu -> Configuration**.

- 2 Click on **Configure thermal imager**.
- ▶ The **Camera settings** window is opened.
- 3 Select **Instrument settings** -> **Firmware Update** -> **OK**.
- ▶ **FW_T883_Vx.xx.bin** is displayed.
- 4 Select **Open**.
- ▶ Firmware update is performed.
- ▶ Thermal imager is automatically restarted. Update complete.



In certain circumstances, the camera reports: **Firmware update finished. Please restart the device**. A restart is not performed.

Action:

- After 10 seconds, switch off the camera; switch back on again after 3 seconds.

- ▶ The current firmware version is displayed.

12.4.2 Performing an update with the camera

12.4.2.1 Preparing the camera

- ✓ The rechargeable battery is fully charged or the camera is connected to the mains adapter.
- 1 Switch on the camera.
- 2 Open the cover of the interface.
- 3 Connect the computer to the camera with the USB cable.
- ▶ The camera is displayed as a removable medium in Windows Explorer.

12.4.2.2 Performing an update

- 1 **Copy the FW_T883_Vx.xx.bin** file to the removable medium using drag & drop.
- 2 Eject the removable medium.
- 3 Disconnecting the USB connection.

- 4 | Switch off camera.
- 5 | Switch on the camera: an update is performed.
- 6 | Observe the progress bar.
- ▶ | Update complete. The current firmware version is displayed.

13 Technical data

13.1 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

13.2 Image presentation

Feature	Values
Display	8.9 cm (3.5") TFT, QVGA (320 x 240 pixels)
Digital zoom	2x / 4x
Display options	<ul style="list-style-type: none"> • Infrared image • Real image

Colour palettes	11 options: <ul style="list-style-type: none"> • Blue/red • Grey • Inverted grey • Iron HT • Cold-hot • Humidity • Iron • Rainbow • Rainbow HC • Sepia • Testo
-----------------	---

13.3 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

13.4 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)

13 Technical data

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 warning	Yes
Reflected temperature	Manual input
Emissivity	0.01-1.0; manual input, material selection or testo ϵ -Assist

13.5 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	<ul style="list-style-type: none">• 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

13.6 Image storage

Feature	Values
File format	<ul style="list-style-type: none"> • .jpg • .bmt • Can export as <ul style="list-style-type: none"> .bmp .jpg .png .csv .xls • Via testo IR-Soft
Memory capacity	Internal memory 2.8 GB, > 2000 images (without SuperResolution)

13.7 Audio functions

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

13.8 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 $\overline{\text{---}}$ 1.8 A*

* $\overline{\text{---}}$ Direct current

13.9 Ambient conditions

Feature	Values
Operating temperature	-15 to 50 °C
Storage temperature	-30 to 60 °C
Humidity	20 to 80 %RH; non-condensing

13 Technical data

Battery charging temperature range	0 °C to +45 °C
Housing protection class	IP 54
Vibration resistance	2g according to IEC 60068-2-6

13.10 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

13.11 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

14 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.

15 Accessories

Description	Order no.
Battery charging station 5 V, 2 A	0554 8801
Spare rechargeable battery	0554 8831
Additional markers for ϵ -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