

How to Operate the Testo 870 thermal imager

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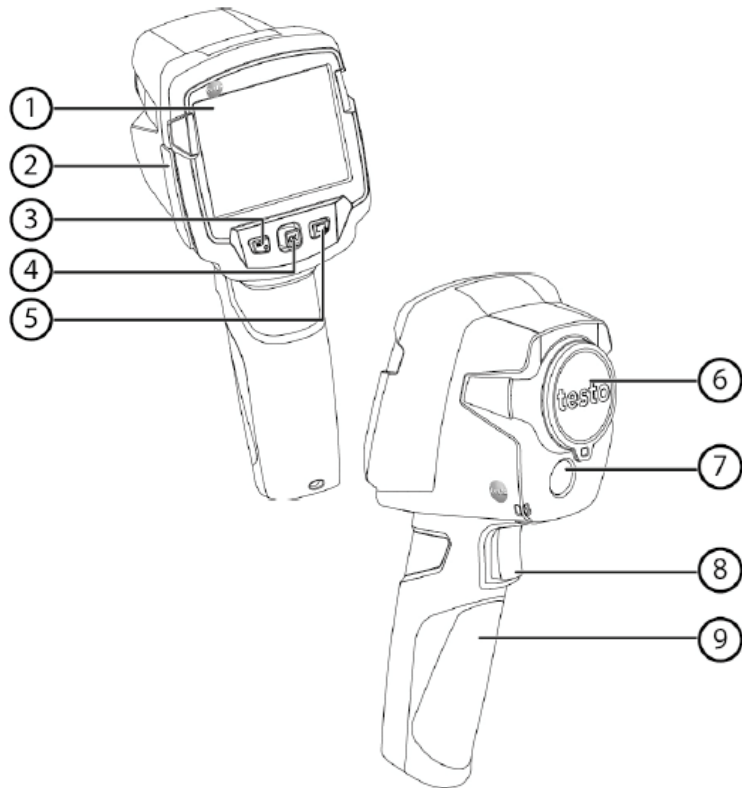
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Technical overview



	Element	Function
1	Display	Shows infrared and real images (only testo 870-2), menu and functions
2	<u>Interface terminal</u>	Contains Micro-USB-Interface for power supply and connection to the computer
3	- <u>Key Power/ESC</u>	- To turn camera on/ out - To abort actions in the menu
4	- <u>Key OK</u> - <u>Joystick</u>	- Open menu, select functions and confirm setting - navigate in the menu, mark functions, select colour palette
5	<u>Speed dial key</u>	Opens assigned function, the symbol of the selected function can be seen on the lower right side of the display
6	Lens infrared camera (Fixed focus), Protective cap	Takes infrared images; protects the lens
7	<u>Digital camera</u> (only testo 870-2)	Captures visual image
8	Trigger	Saves the indicated thermal image
9	<u>Battery compartment</u>	Contains the battery



Fixed focus: Optimized Focus-free optics guarantee a perfect image every time.



Interface / internal memory



Internal Memory: The testo 870 possesses an internal memory. This memory has a capacity of 1.6 GB and allows to save >2.000 thermal images. Images can be accessed via a USB connection.

Mini USB-Interface: Another new aspect, of the testo 870, is that the battery is charged via the USB cable. The imager can be charged with any USB connection. The **camera has to be switched off**, if charging it via **PC**.

Charging time via PC: ca. 8 Std.

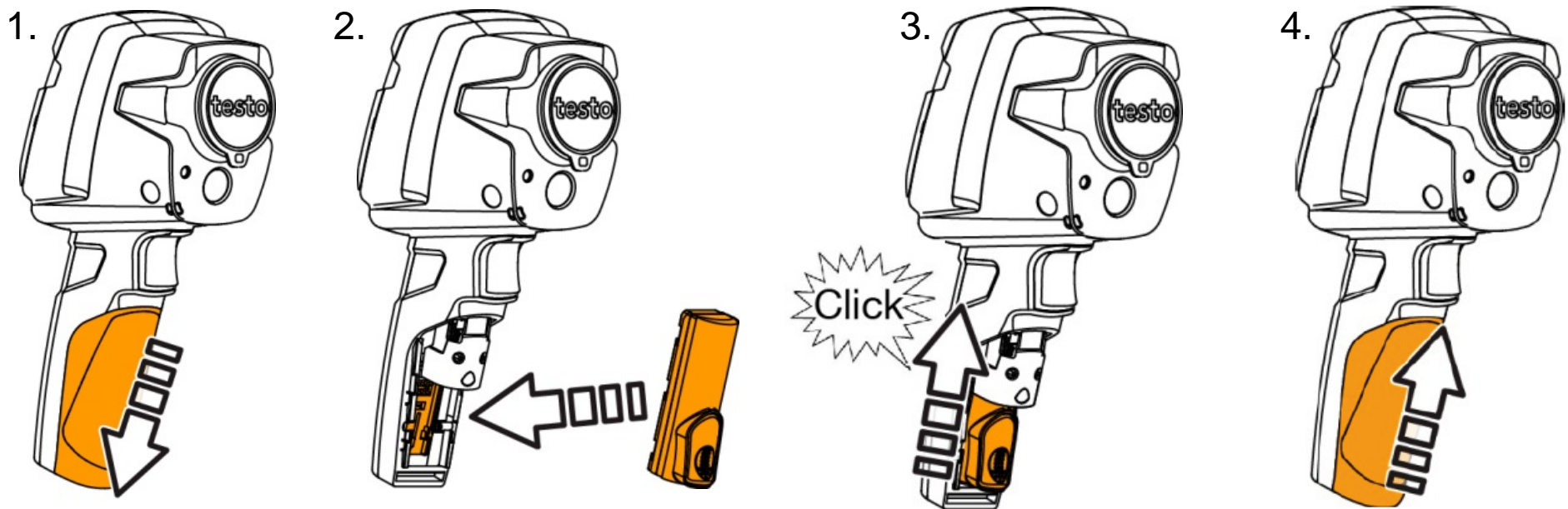
Charging time via power supply unit: ca. 5 Std.

The battery can also be charged with the aid of the table top rapid charging station.

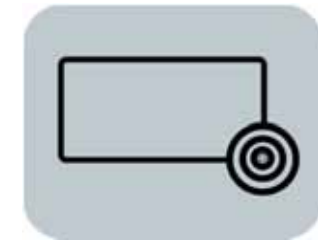
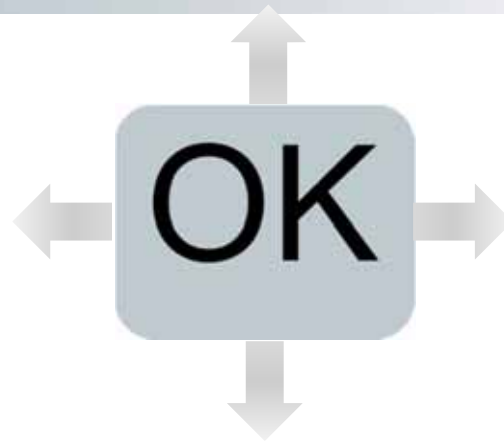


Inserting the battery

1. Remove the battery cover by sliding it down
2. Put the battery in the opening
3. Push the battery up until it clicks into place – „click“
4. Put the battery cover on and push it up



Operation of keys



ESC/Power key

- the thermal imager can be **switched on and off**. Turning it off, the key has to be held for approximately 3 seconds.
- **ESC operation** this enables the go back one menu level

1 button Joystick

- Depress the 1 button Joystick and open the main menu
- All menus and commands can be accessed by utilizing this joystick
- Depress to make selections

Speed Key

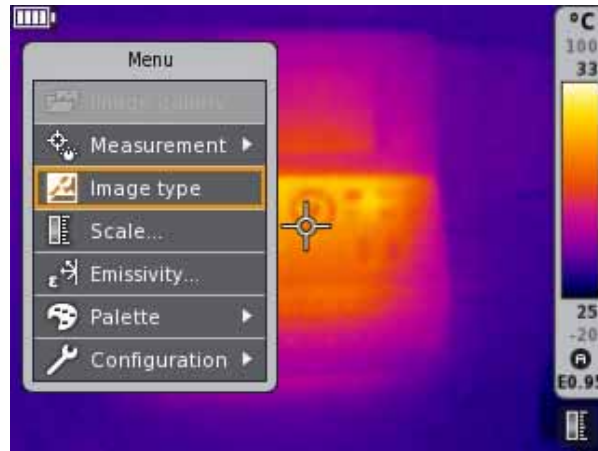
- Custom select you most used function and program key for this menu.



Assigning speed dial key



Pushing the 1 button Joystick to the right...



... select desired function and confirm with **OK (Depress)**

Below the scale, a symbol indicates the reserved function of the speed key

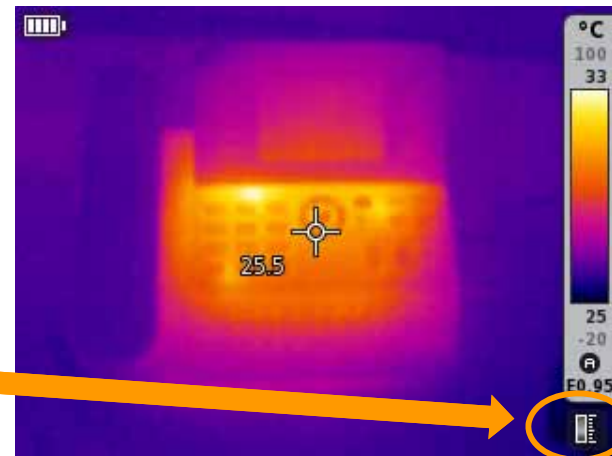
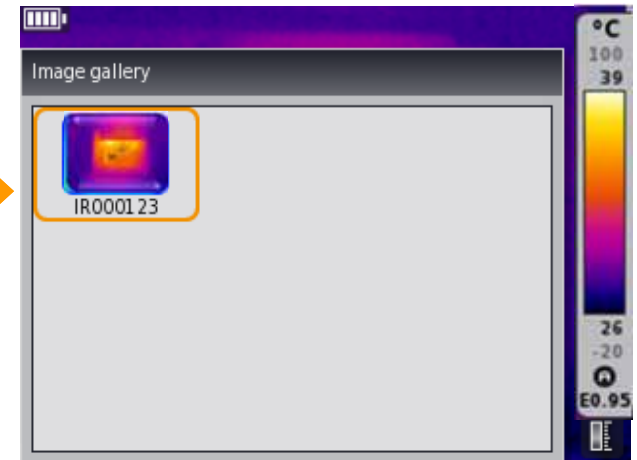
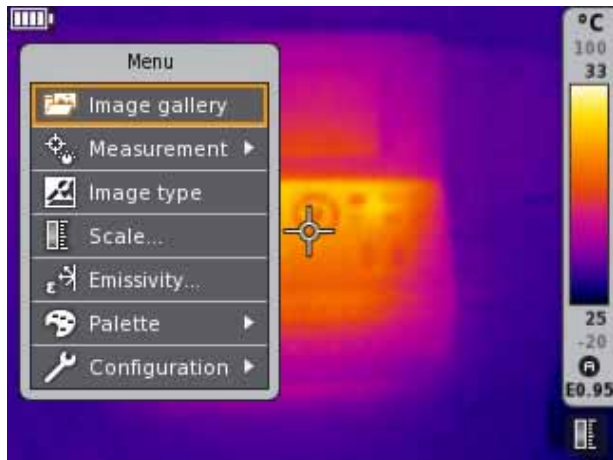
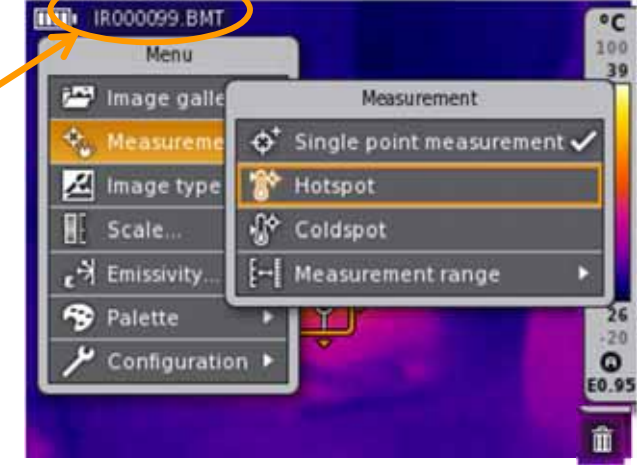


Image gallery – Display of saved images



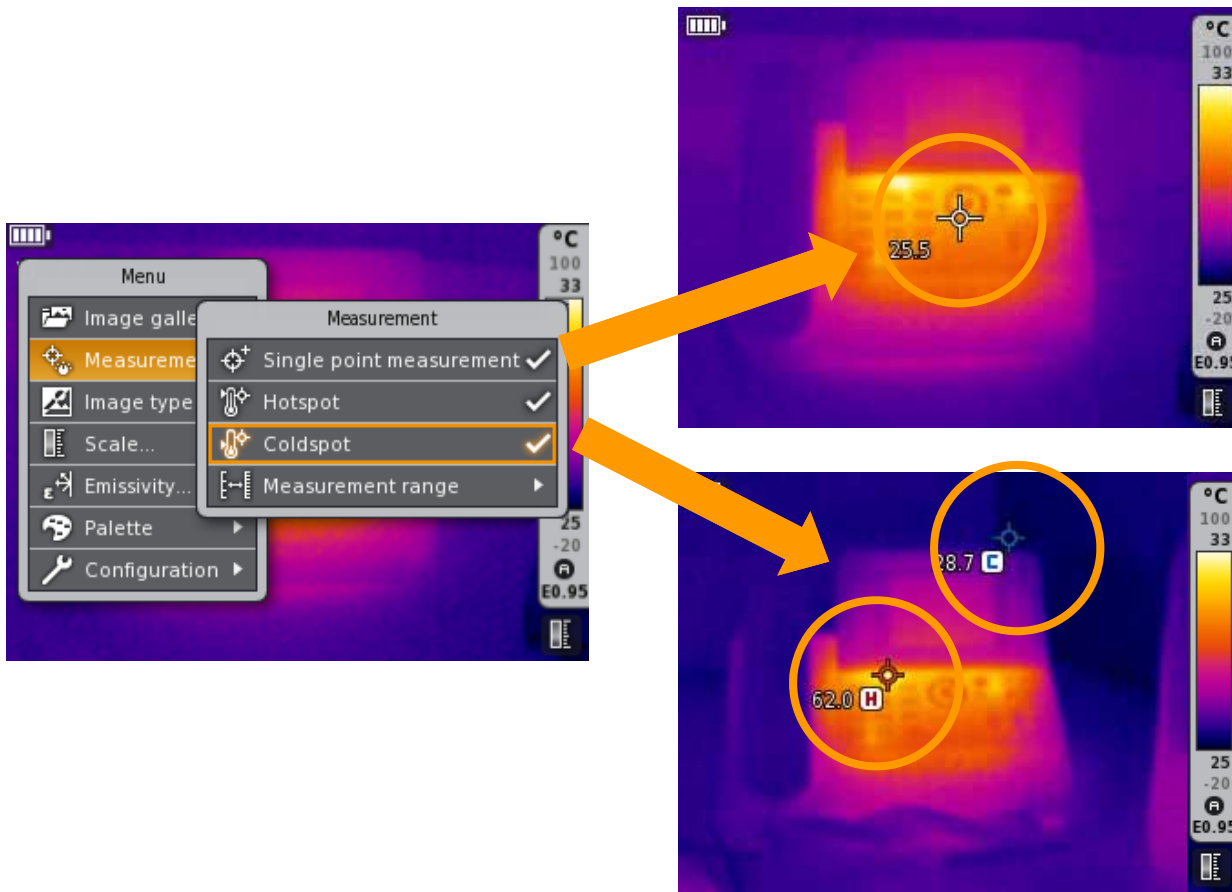
The file name of the open thermal image is shown in the top left of the display.



Open thermal images from the image gallery. Open images can be analyzed with any imager function (such as measurement functions, scale, etc.), as in the live mode.



Measurement functions



The “**Single point measurement**“ can be activated in the menu “**Measurement**“

“**Hot-Cold-Spot Recognition**“ can be turned on at any time.

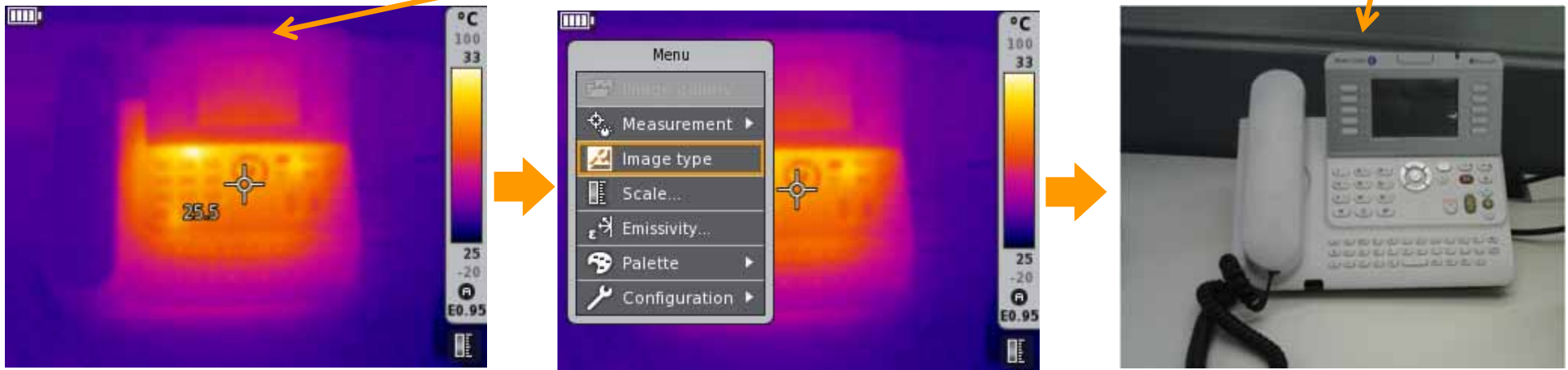


The testo 870 has only **one** wide measurement range of -4 to 536 °F to -20 ...+280 °C. Setting the correct range is unnecessary.



Image type (only testo 870-2)

In order to display an image you can choose between a **thermal image** and a **visual image**.



Confirm with click



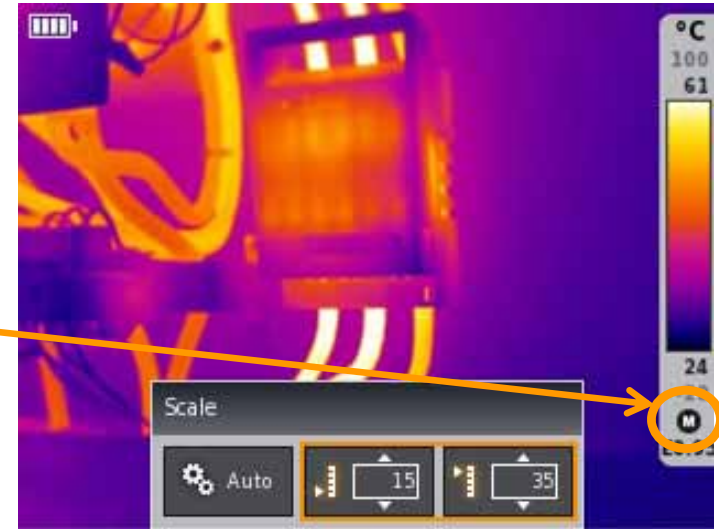
During an image recording, the thermal image and the real image are automatically saved together.



Scale setting



Below the scale it is shown which scaling has been set (A → automatic; M → manual)



Automatic scaling: The color distribution of the palette is distributed from the coldest to the warmest temperature within the thermal image.

Manual scaling: Set the desired temperature values or the area in order to accentuate weak points.



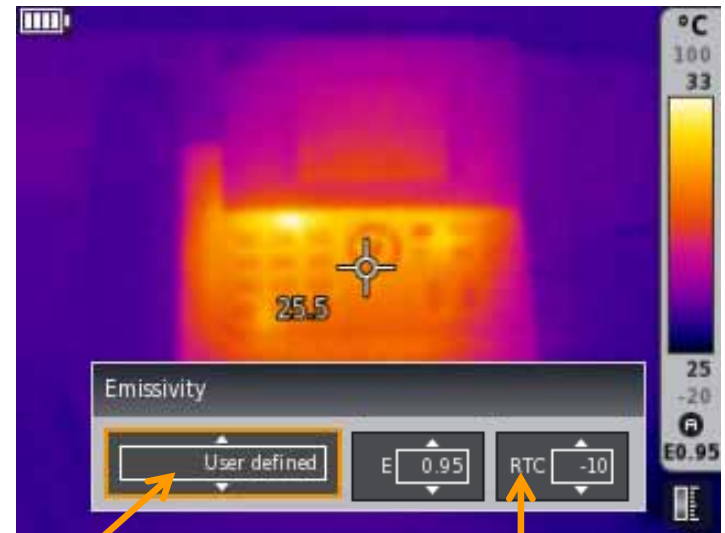
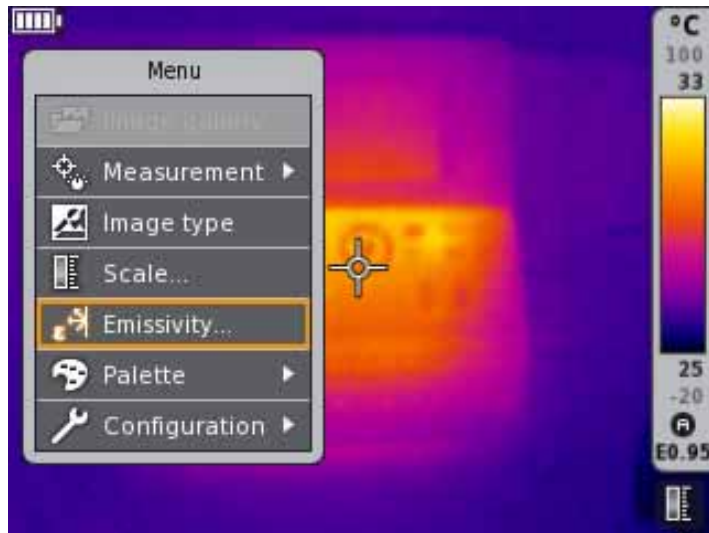
Selecting the menu item **“Scale”**, you can choose between automatic or manual scaling.



Set temperature values within the manual scaling. Confirm selection by pushing **OK**.



Emissivity and RTC setting



User-defined setting of emissivity or selection from the list of defined materials. (List of materials can be modified via IRSoft!)

Setting of the reflected temperature (RTC)



The “**Emissivity**” can either be selected in an user-defined way or from preset emission rates of different materials via the 1 button joystick.

Press OK for the confirmation of the selection.

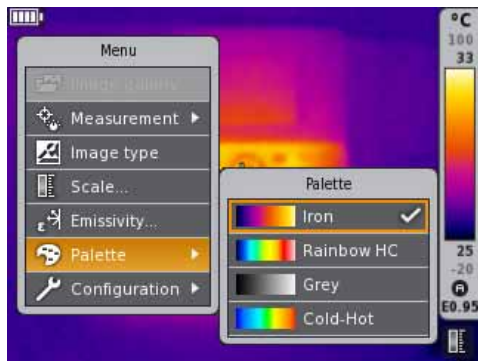
The “reflected temperature” (RTC) is also set in the menu item emissivity



Selection of the color palette



The single palettes can be selected directly by using the 1 button Joystick. Move the joystick up/ down in order to change the palette.



Also it is possible to select the desired palette by choosing the dialog box **"Palette"**.

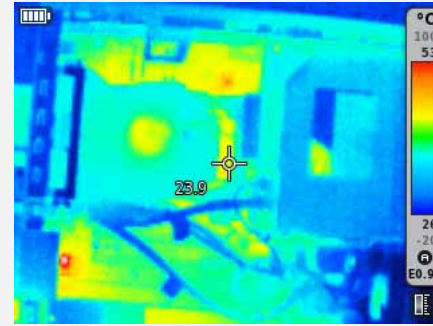
Choose between four color palettes:



Iron



Rainbow HC



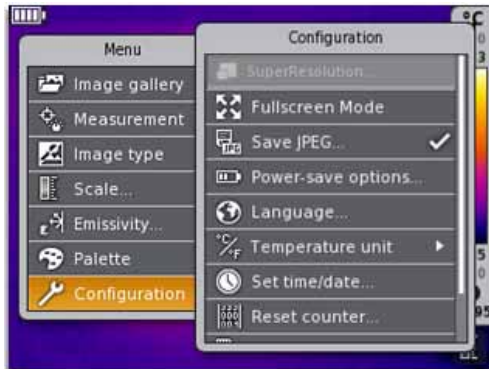
Cold-Hot



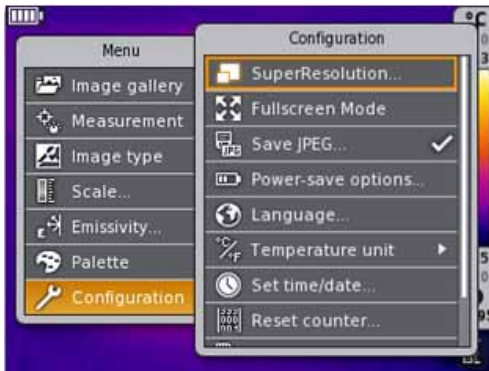
Grey



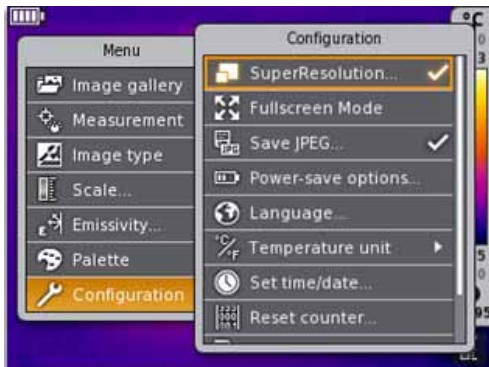
Testo SuperResolution



If the menu item **SuperResolution** is colored grey, the optional upgrade has *not yet* been installed on the instrument.



If the menu item **SuperResolution** is selectable, but not yet labelled by a tick, the function is installed, though not yet activated.



By selecting the menu item **SuperResolution** with **OK**, the function can be activated.



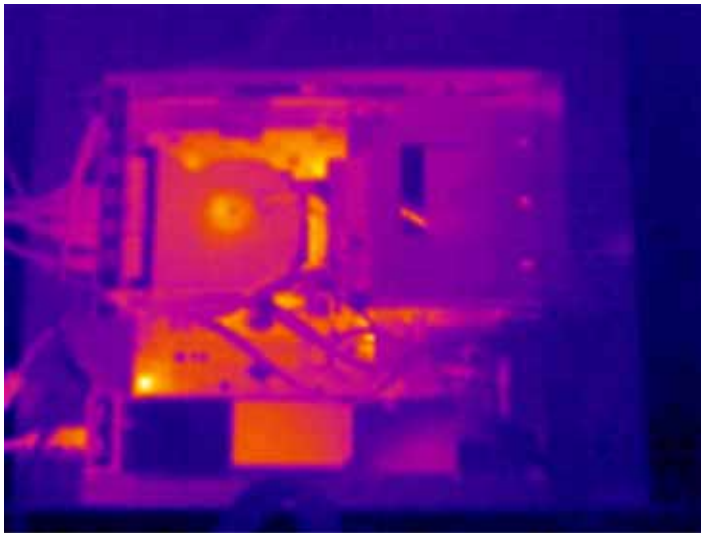
Testo SuperResolution

When you have purchased as upgrade option from your Testo dealer, You receive an access code (identification code) to execute your upgrade from the testo website.



Testo SuperResolution is a image enhancement technology. It combines several images and image algorithm (deconvulsion). The result is *4x more pixels*, *60% better temperature data* and a visibly better sharpness and quality in your thermal image.

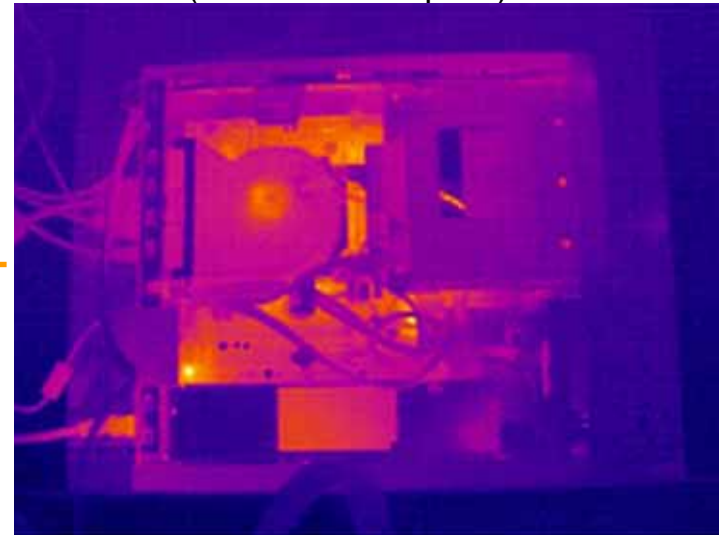
testo 870 – Thermal image with 160 x 120 pixel



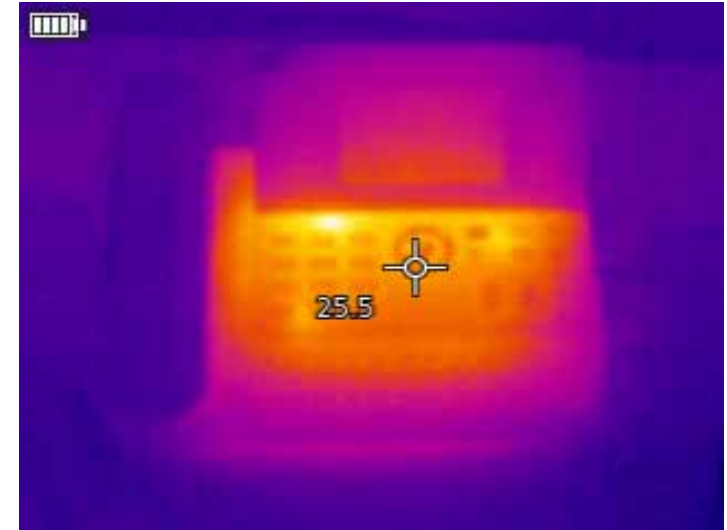
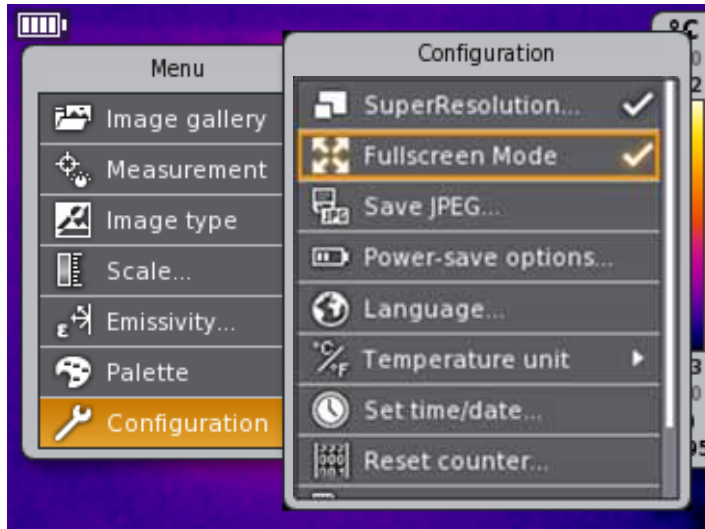
With
SuperResolution-
Technology



testo 870 – Thermal image with **SuperResolution**,
(like 320 x 240 pixel)



Fullscreen mode



The “**Fullscreen Mode**“ can be activated with the menu item „**Configuration**“. The temperature scale on the right side of the display fades out after 1.5 seconds and so the whole display is used for the thermal image.

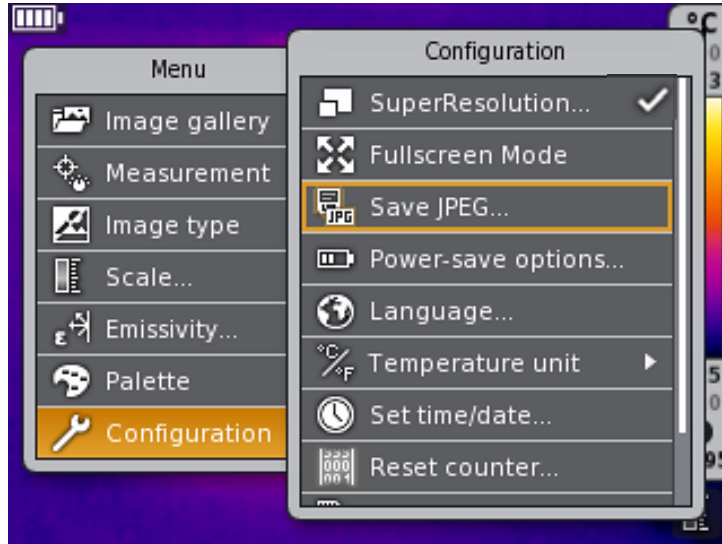
Pressing any key, the temperature scale reappears for a short period of time.



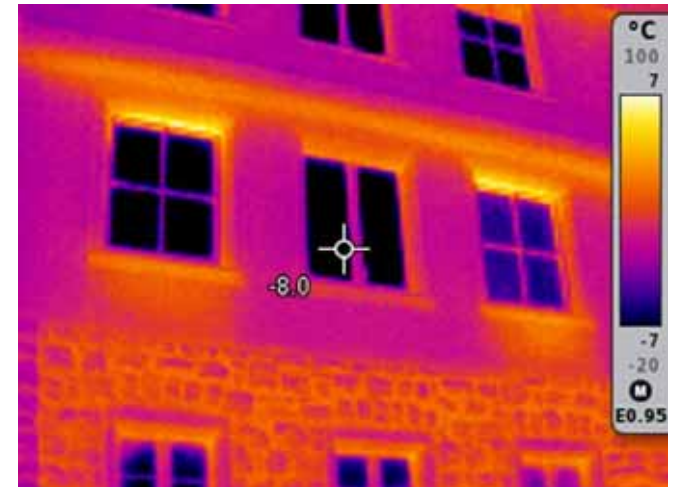
The temperature scale is always saved as part of any thermal image in both also full radiometric and JPEG thermal image.



Save JPEG



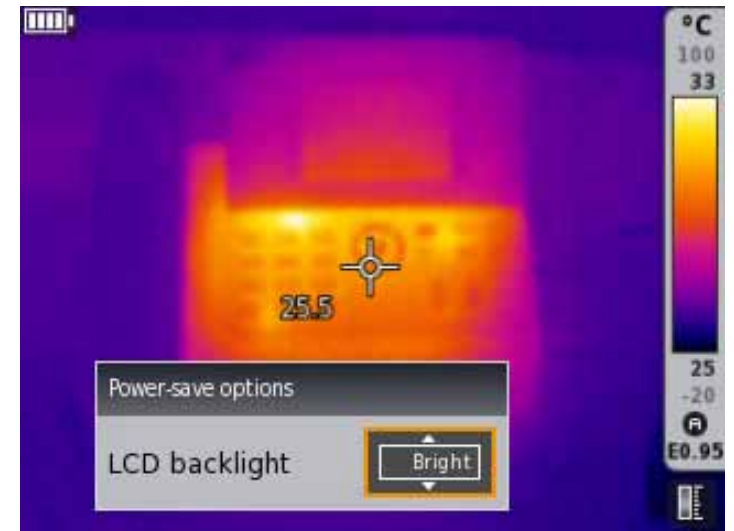
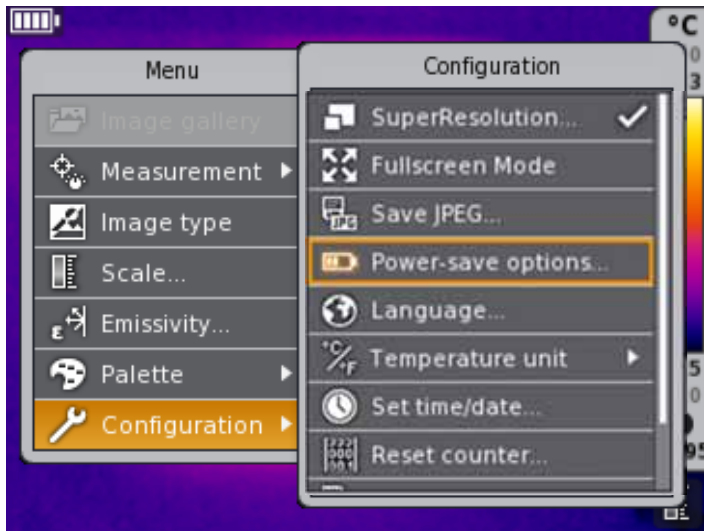
Additionally, IR-Images can also be saved in a JPEG format. That way, they can be directly transferred to any PC or program, without uploading in IRSoft and saving them as JPEG



If measurement functions, such as Hot- and Coldspot, are active during saving, they are saved in the JPEG.



Power-save options



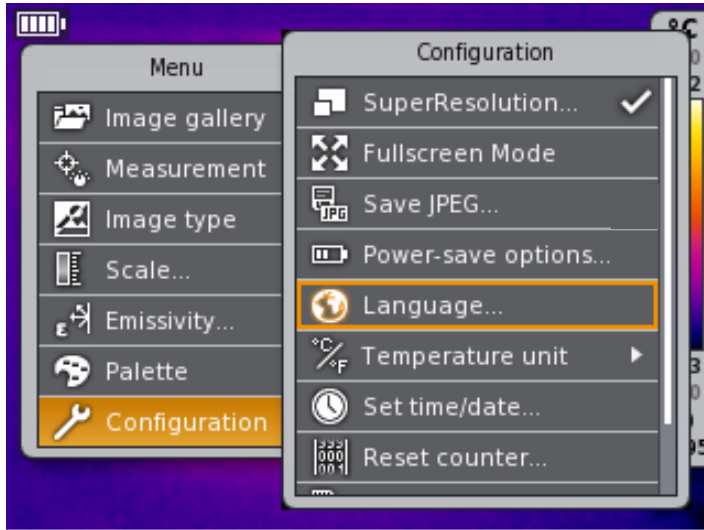
The “**Power-save options**“ can be set with the menu item “**Configuration**“.

The joystick helps to determine the LCD backlight by selecting between normal, dark and bright.

Confirm the selection by **OK**



Language configuration

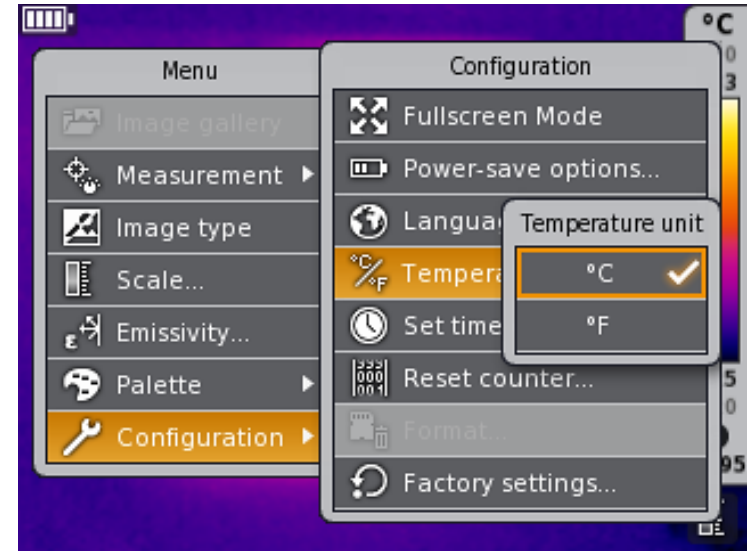
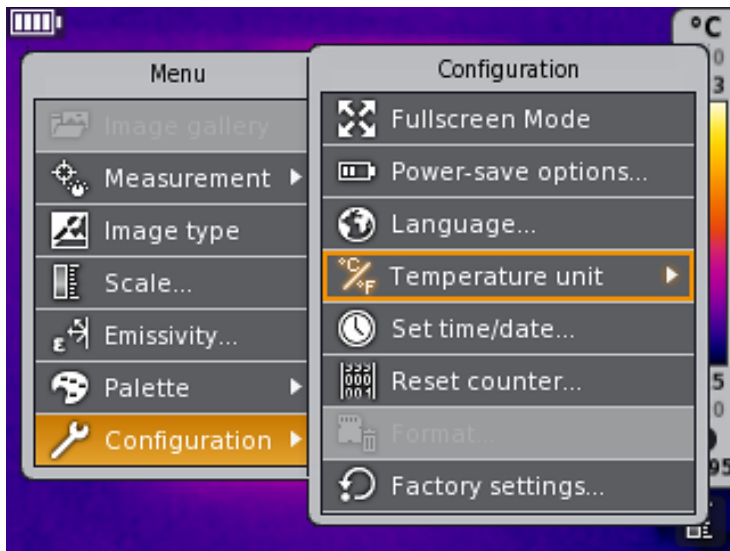


The “**language**” can be set with the menu item “**Configuration**”

Confirm the selection with **OK**.



Configuration of the temperature unit

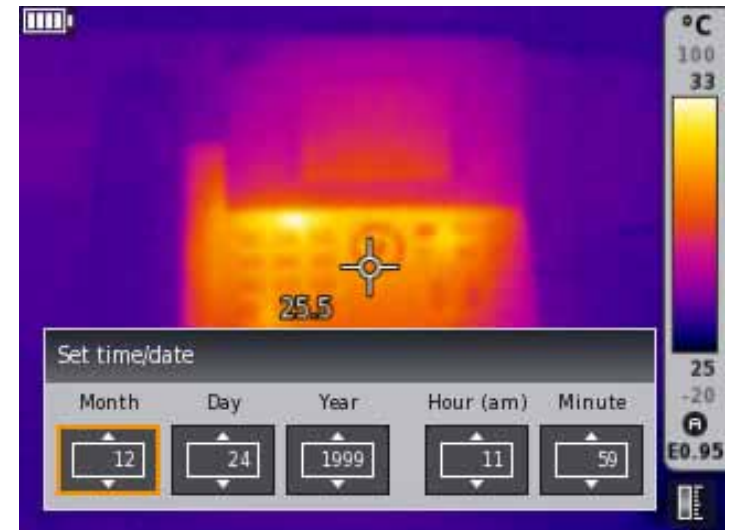
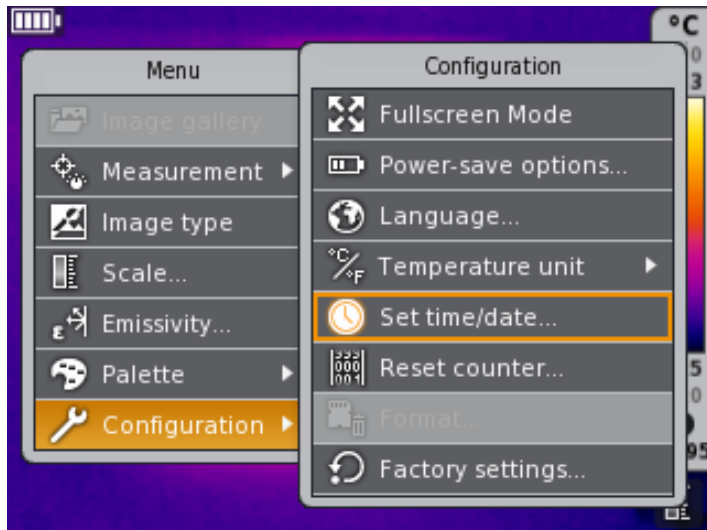


The “**Temperature unit**“ can be set with the menu item “**Configuration**“.

Confirm the selection with **OK**



Setting time/ date

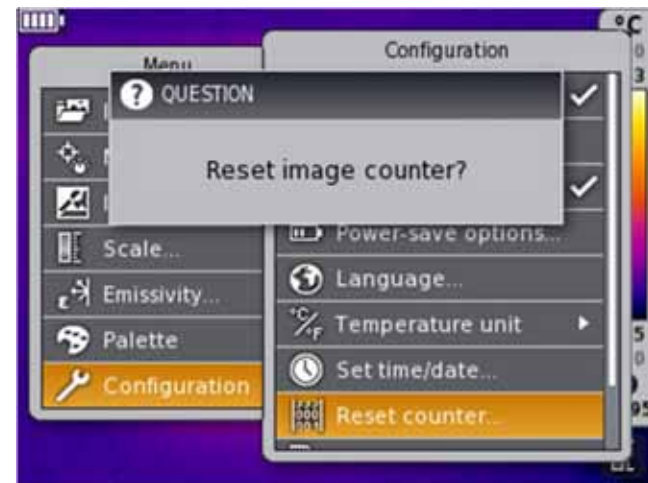
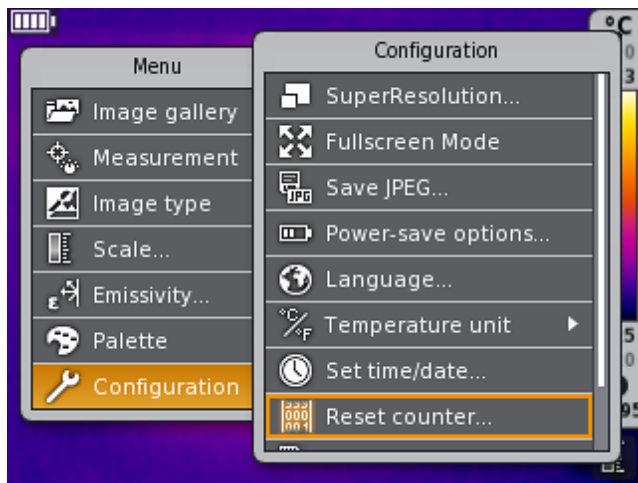


„Time “ and „Date“ can be set with the menu item „Configuration“.

Confirm the settings with **OK**



Reset image counter



The function “**Reset counter**” allows to renumber stored images from the beginning.

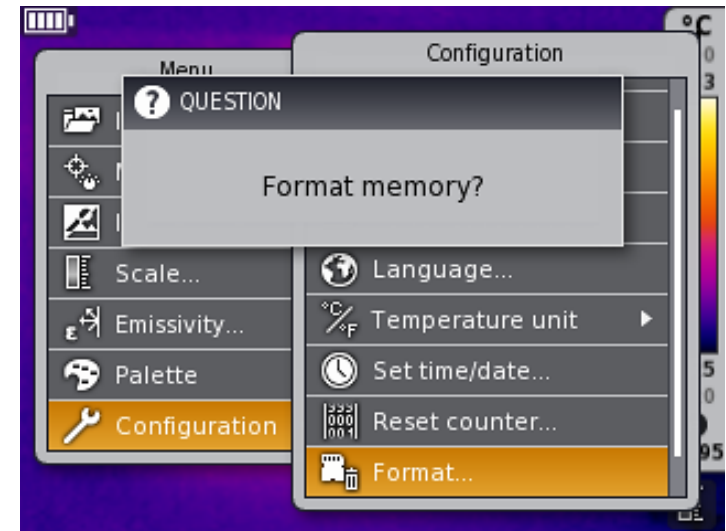
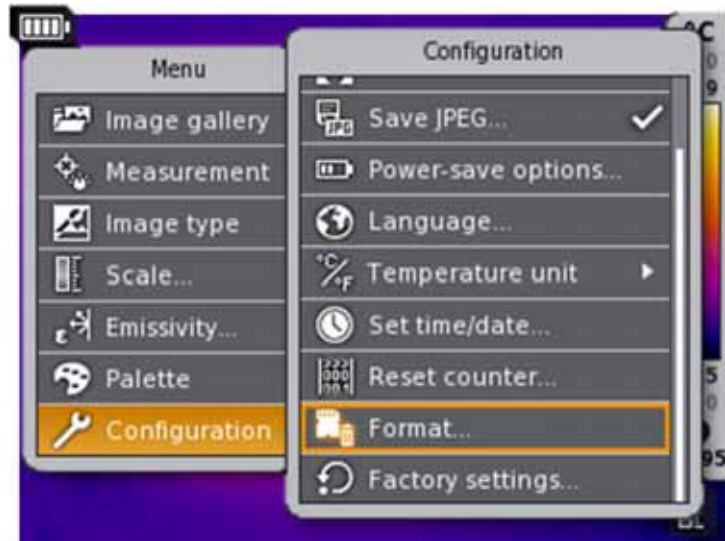
Confirm the resetting of the frame counter with **OK**



Attention: Stored images with the same number in the internal memory will be overwritten.



Format

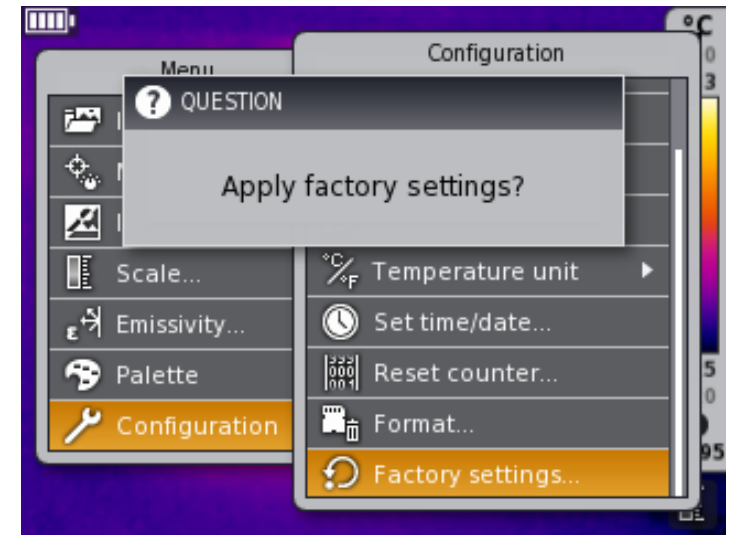
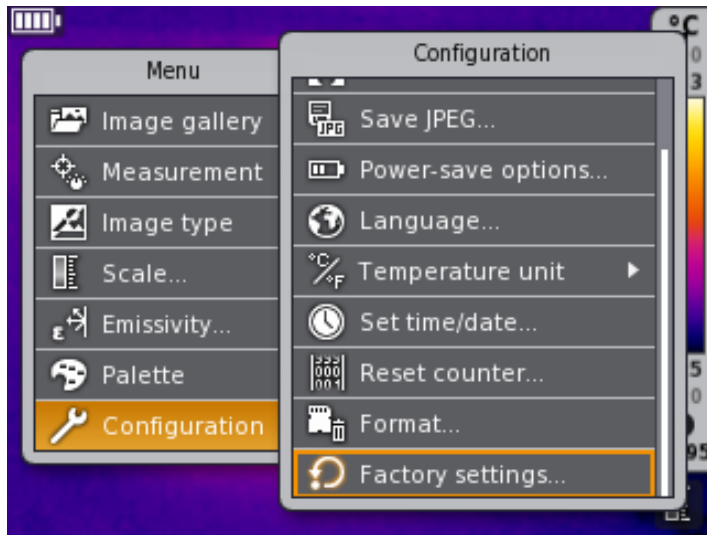


By selecting “**Format**“, all stored images in the camera will be deleted and the internal memory will be formatted.

Confirm the formatting with **OK**.



Factory settings



The menu item “**Factory Settings**” resets all imager settings back to the original state when it was first taken out of the box. Confirm resetting of the factory settings with **OK**.



Open images on the PC

- Install the PC software testo IRSoft, using the CD which is included in delivery, or from the download area on on the testo website
- Start the software
- Switch on the camera
- Connect the camera via the interface with the USB cable with the computer
- Camera is automatically identified
- The import assistant starts and supports you to upload the images

