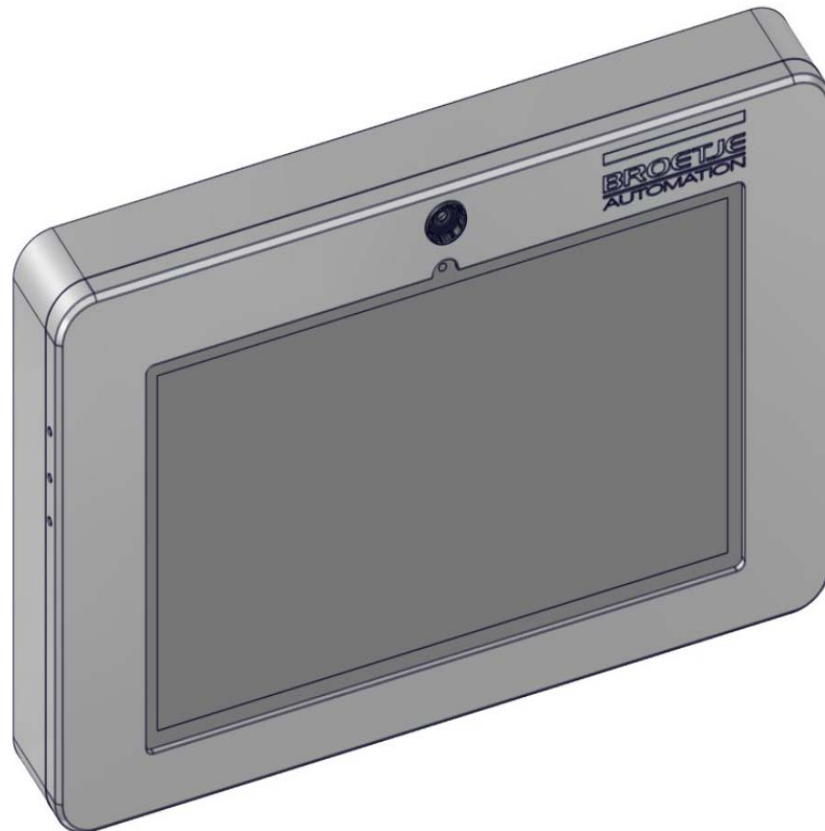


# Operating Instructions

Original instructions

Broetje-Automation GmbH<sup>®</sup>

Rev. 1.0 (2020-09-16)



ID: 0000019426-XX-001

## BA Thermo

0000001256-001

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# 1 Change History

List of revisions				
Rev. no.	Section	Description	Date	Name
1.0	All	Final issue	9/3/2020	Neuheuser

ID: 0000018876-EN-001

## 4 - 1 Change History

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## 2 Description

### 2.1 Regulations and laws

The BA Thermo product has been developed and manufactured under consideration of the following European regulatory requirements:

- 2001/95/EC – General Product Safety
- 2014/30/EU – Electromagnetic Compatibility
- 2014/35/EU – Low Voltage Directive
- 2011/65/EU – Restriction of Hazardous Substances (RoHS)

ID: 0000018999-EN-001

### 2.2 Overview

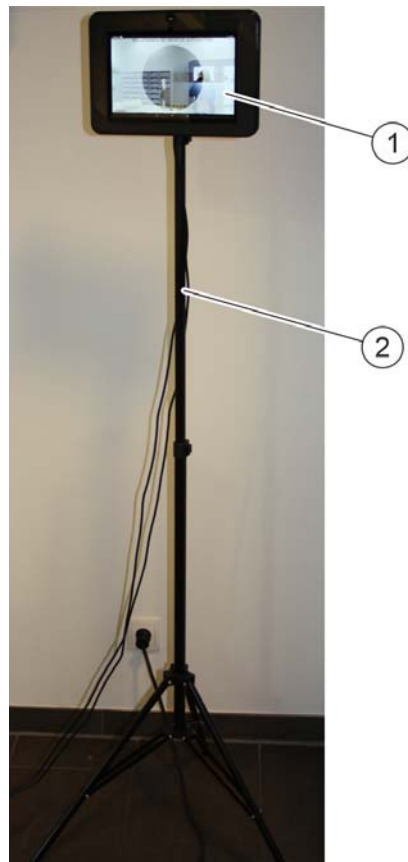


Fig. 2-1: Overview of BA Thermo

Item	Designation
1	BA Thermo (including a Lenovo tablet)
2	Tripod (make: Walser)
None	Power supply unit



Observe the separate documentation!

Manufacturer: Lenovo



Observe the separate documentation!

Manufacturer: Walser

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### 2.3 Operating and installation conditions

The BA-THERMO temperature scanner is not a medical device. It is not intended for the detection of human fever or for the diagnosis, mitigation or prevention of any disease or health condition.

A person can carry or transmit diseases without having an increased skin temperature. Wherever the temperature scanner is employed, a medical device should always be used for additional screening and proof of a possible increase in core body temperature.

The device should be operated indoors between 20 and 25°C to enable a temperature measurement accuracy of +/-0.5°C.

Various ambient temperatures can affect the accuracy of the device. Wait at least 5 minutes for the device to warm up before you start recording the temperature.

ID: 0000018975-EN-001

### 2.4 Principle of temperature determination

The BA-THERMO temperature scanner does not monitor core body temperature, but the radiation temperature of the skin. The skin temperature does not correspond to the core body temperature. Skin temperature is usually significantly lower.

The temperature monitoring output value is calculated from the determined radiation temperature of the skin plus an offset value to be set, which enables an approximation of the core body temperature while taking the ambient conditions into consideration.

If an elevated core body temperature has been detected, it is therefore vital to always confirm this increased temperature by secondary screening with a medical device.

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## 10 - 2 Description

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# 3 Installation

## 3.1 Assembly

### In case of floor installation with a tripod

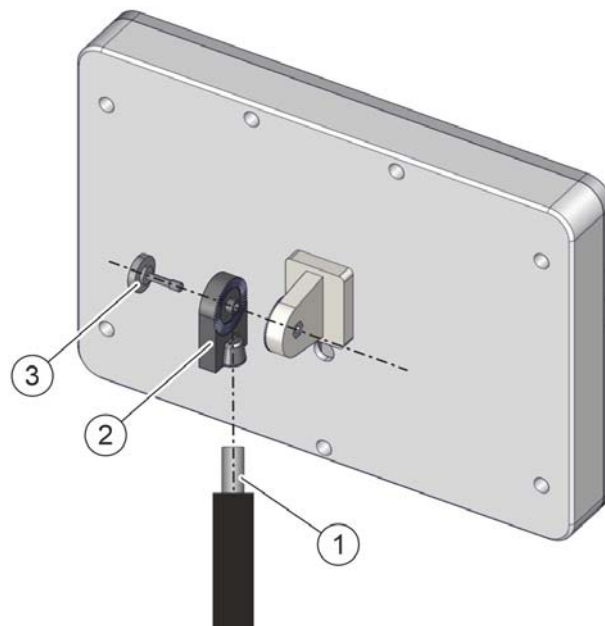
#### Procedure

- ▶ 1. Remove the tripod from the packaging and set it up. See the separate Walser documentation.



The enclosed adapter sleeve is not required for this application.

- ▶ 2. Remove BA-Thermo from the packaging.
- ▶ 3. Screw the holder *Fig. 3-1 - (2)* onto the tripod *Fig. 3-1 - (1)*.



*Fig. 3-1: Assembly of BA-Thermo on the tripod*

- ▶ 4. Screw the housing to the holder on the tripod using the knurled screw *Fig. 3-1 - (3)*.
- ▶ 5. If necessary, adjust the inclination of BA-Thermo. (Vertical position recommended)
- ▶ 6. Connect the mains cable to the socket on the housing.
- ▶ 7. Connect the mains plug to a socket.

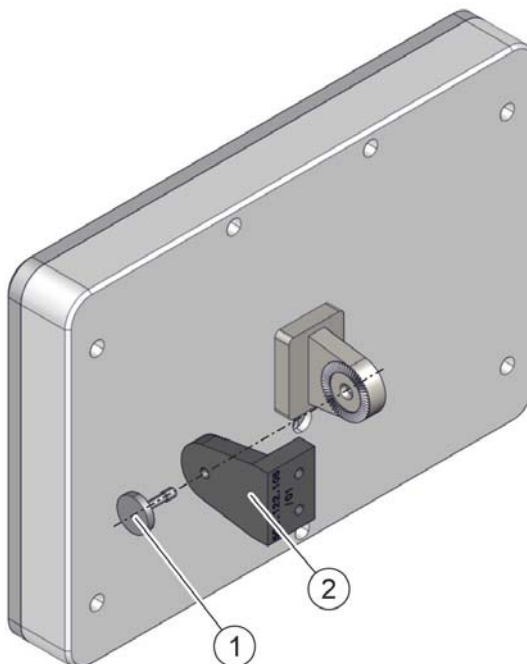
## 12 - 3 Installation

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### In case of wall mounting

#### Procedure

- ▶ 1. Remove BA-Thermo from the packaging.
- ▶ 2. Mount the wall bracket *Fig. 3-2 - (2)* to the wall (with suitable, commercially available screw-dowel connection).



*Fig. 3-2: Wall mounting*

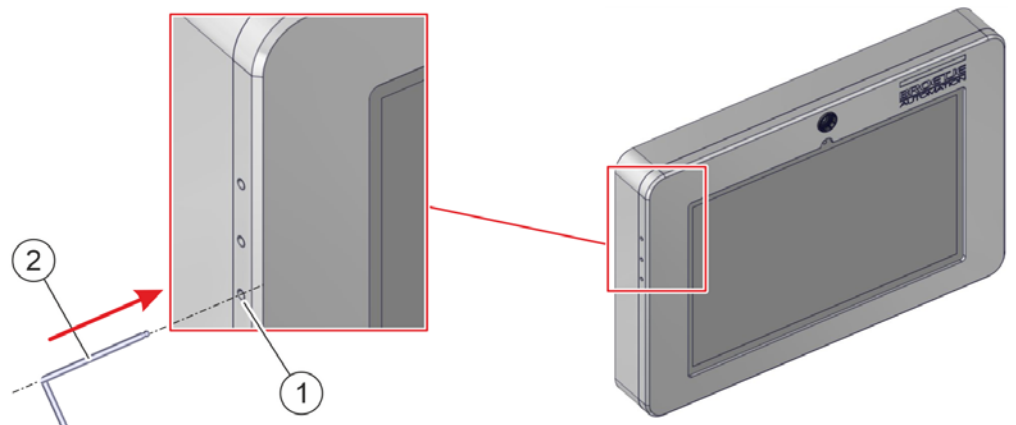
- ▶ 3. Screw the housing to the wall holder with the knurled screw *Fig. 3-2 - (1)*. (Vertical position of BA-Thermo recommended)
- ▶ 4. Connect the mains cable to the socket on the housing.
- ▶ 5. Connect the mains plug to a socket.

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## 3.2 Commissioning

### Procedure

- ▶ 1. Switch on BA-Thermo with the provided tool *Fig. 3-3 - (2)*.
  - ▶ The opening for the tool is located on the left side of the housing. *Fig. 3-4 (1)*



*Fig. 3-3: Switch*



The ON button must be pressed for a few seconds.  
Successful activation is indicated by a slight vibration of the device.

- ▶ 2. The "BA Thermo" app starts automatically.



- ▶ 3. Adjust the settings.



*Fig. 3-4: Settings*

- ▶ Tap the screen.
- ▶ Tap the "Settings" *Fig. 3-4 - (1)* field.

## 14 - 3 Installation

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- ▶ Make the desired adjustments. For the setting options, see: chapter 4 "Control and Display Elements"

### Result

- The device is ready for operation.

ID: 0000018982-EN-001

# 4 Control and Display Elements

## 4.1 Starting screen



Fig. 4-1: Settings

Item	Interface area
1	Tap the " Settings" field to open the settings screens.

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## 4.2 Settings

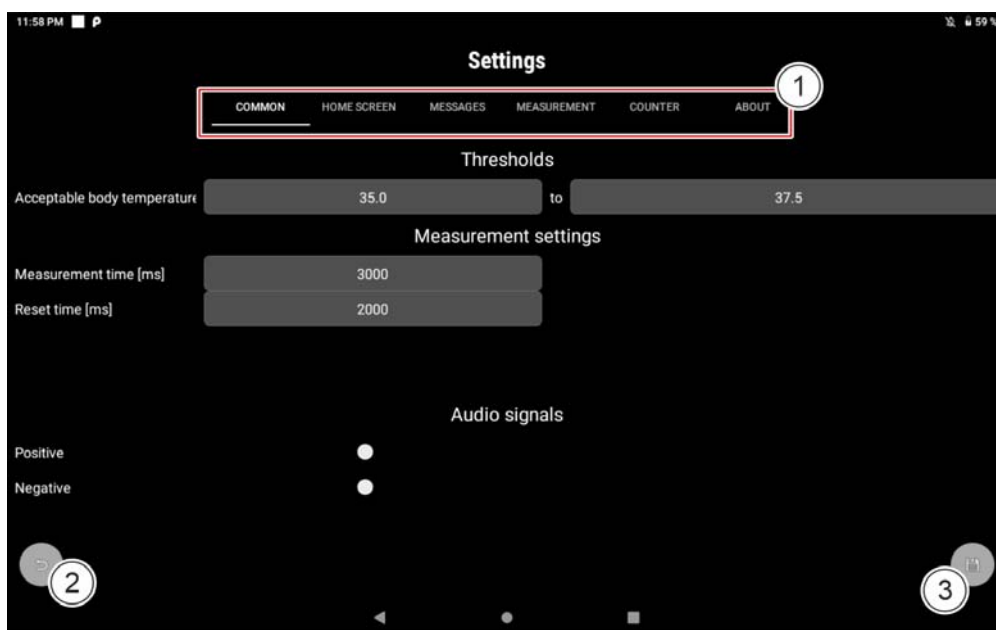


Fig. 4-2: See the settings.

Item	Interface area
1	Switch between the settings screens. (Tapping the desired screen opens it).
2	Switch to the main screen
3	Saving of the settings

ID: 0000018877-EN-001



## 4.3 General information

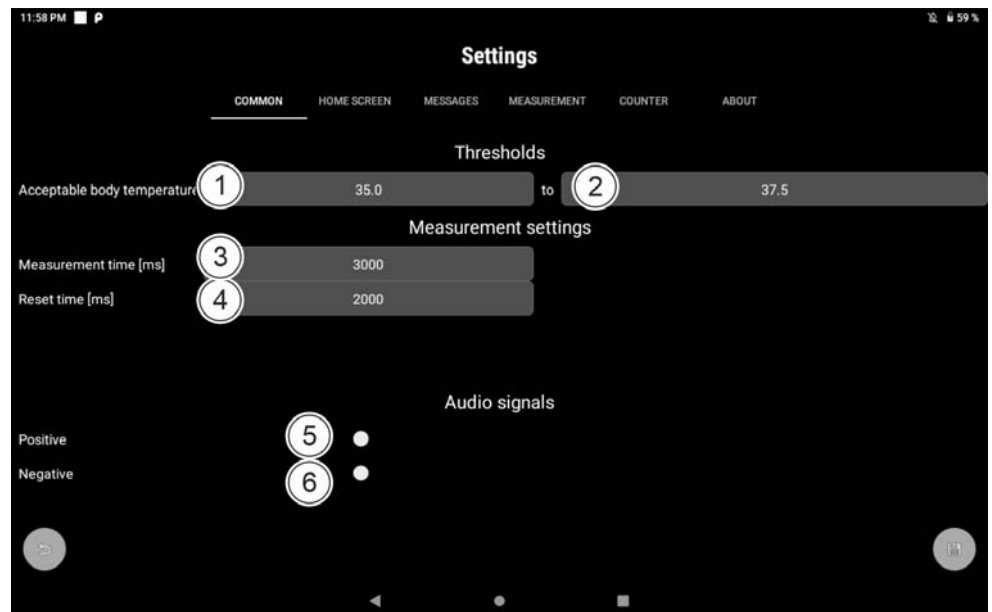


Fig. 4-3: "General information" screen

Item	Element	Function / meaning
Threshold values		
1	Permissible temperature from	Input field: Lowest value that leads to a positive measurement. (Measurement successful)
2	Permissible temperature to	Input field: Highest value that leads to a positive measurement. (Measurement successful)
Measurement settings		
3	Measuring time [ms]	Input field: Duration of the measuring time. The default value is 3,000 ms. At least 2,000 ms are recommended.
4	Reset time [ms]	Input field: Delay period between measurement attempts.
Audio signals		
5	Positive measuring result	Switch: A signal sounds if the measurement was positive (OK).
6	Negative measuring device	Switch: A signal sounds if the measurement was negative (not OK).



Double-click the input fields to change the corresponding values.



After the values are changed, the "Save" symbol must be actuated.

ID: 0000018878-EN-001

## 4.4 Main View

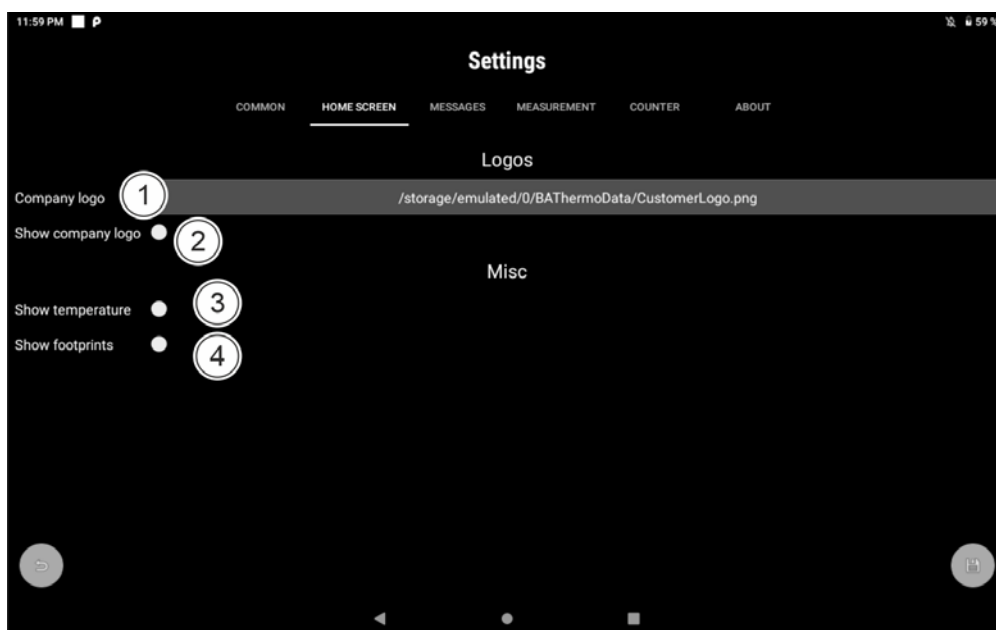


Fig. 4-4: "Main View" screen

Item	Element	Function / meaning
Logos		
1	File path of customer logo	Input field: Storage location and file name of the customer logo. Customer logos can be loaded onto the tablet by Bluetooth. The file must have a format of *.png. The recommended size is: 130 x 50 px.
2	Show company logo	Switch: Switch the display of the logo on or off.
Miscellaneous		
3	Show measuring temperature	Switch: The main screen displays the temperature in °C if the measurement is positive.
4	"Footprints" start sequence	Switch: Alternatively to the default image (empty circle section with the camera image), a footprints graphic can be displayed.



After the settings are changed, the "Save" symbol must be actuated.

ID: 0000018879-EN-001

## 4.5 Messages

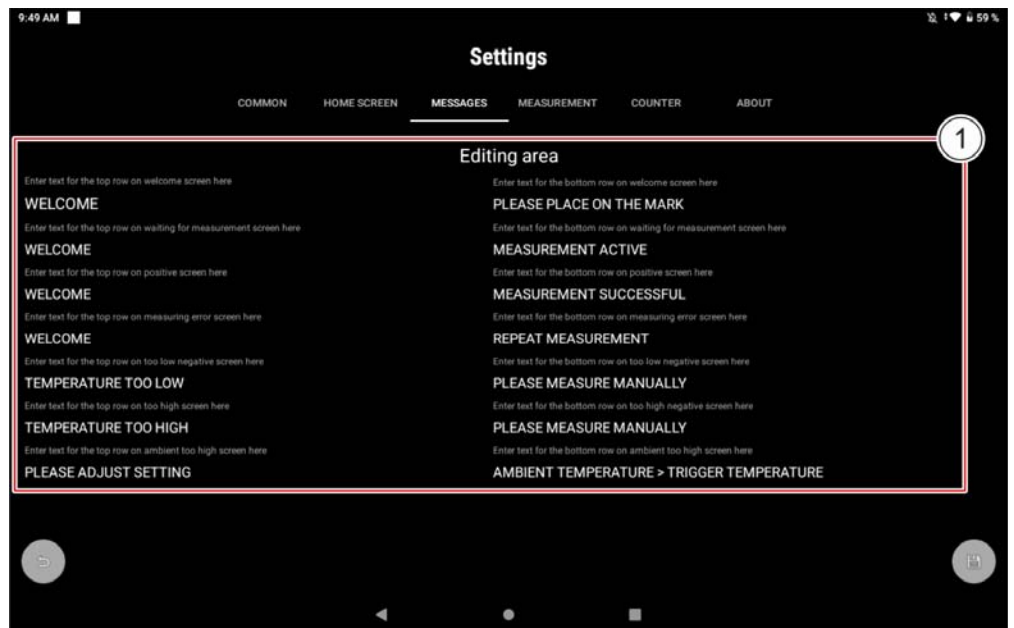


Fig. 4-5: "Messages" screen





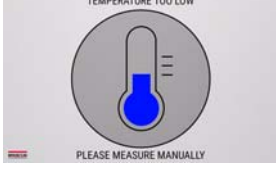


Item	Element	Function / meaning
Editing area		
1	Screen messages	Input field: Display texts on the screen. The text can be edited by double-clicking the respective line.



After the settings are changed, the "Save" symbol must be actuated.

## 20 - 4 Control and Display Elements

### Overview of screens

Screen	Meaning
 <p>WELCOME PLEASE PLACE ON THE MARK</p>	"Welcome" screen
 <p>WELCOME 3 MEASUREMENT ACTIVE</p>	"Wait" screen
 <p>WELCOME MEASUREMENT SUCCESSFUL</p>	"Positive" screen
 <p>WELCOME ? REPEAT MEASUREMENT</p>	"Message Failed" screen
 <p>TEMPERATURE TOO LOW PLEASE MEASURE MANUALLY</p>	"Temperature Too Low" screen
 <p>TEMPERATURE TOO HIGH PLEASE MEASURE MANUALLY</p>	"Temperature Too High" screen
 <p>PLEASE ADJUST SETTING AMBIENT TEMPERATURE &gt; TRIGGER TEMPERATURE</p>	"Ambient Temperature Too High" screen

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## 4.6 Measurement

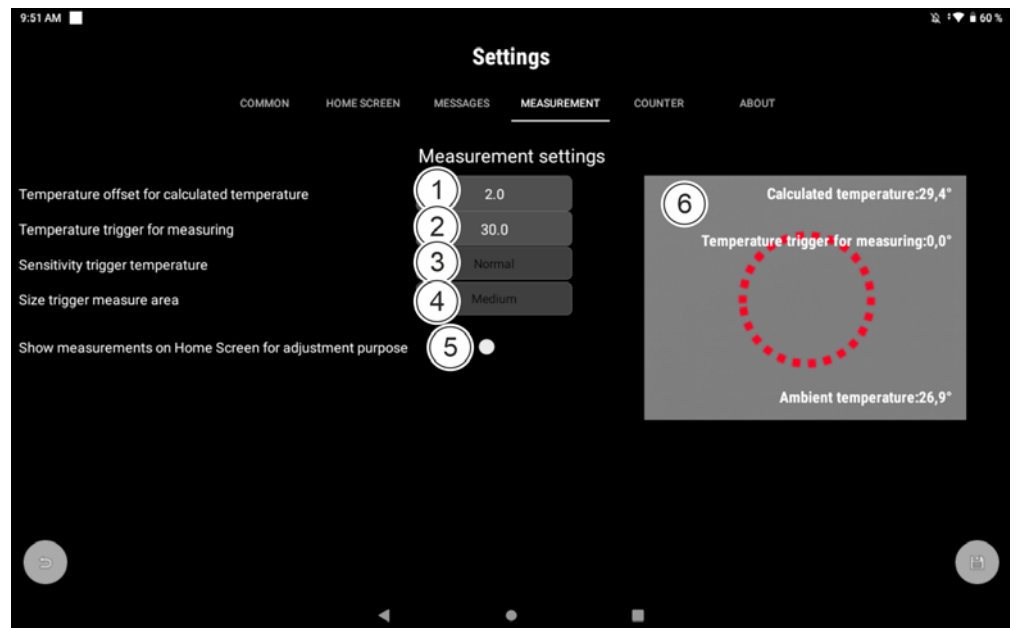


Fig. 4-6: "Measurement" screen

Item	Element	Function / meaning
Measurement settings		
1	Correction value for calculated temperature	Input field: Value by which the measured temperature is increased/decreased. Increase without sign, decrease with prefixed minus sign.
2	Trigger temperature for measurement	Input field: Value that is used as minimum value to trigger a measurement. Important: This value should be higher than the ambient temperature and lower than the permitted minimum temperature.
3	Trigger temperature sensitivity	Selection field: An appropriate value can be selected depending on the environment. The calculation of the measuring temperature can be adjusted using this selection.
4	Large trigger temperature measuring range	Selection field: An appropriate measuring range can be selected depending on the environment. This range is indicated by a dotted marking in the thermal image.
5	Show all measured values on the main screen for parameterization.	Switch: For easy testing, the trigger temperature is displayed on the main screen. Caution: Not recommended for continuous display



Double-click the input fields to change the corresponding values.



After the settings are changed, the "Save" symbol must be actuated.

ID: 0000018881-EN-001

### 4.7 Counter



Fig. 4-7: "Counter" screen

Item	Element	Function / meaning
General information		
1	Count positive measurements	Switch: The positive measurements are counted.
2	Count negative measurements	Switch: The negative measurements are counted.
Reset		
3	Reset counter	Input fields: The respective counter is reset.
Counter readings		
4	Counter readings	Display fields: Displays the respective counter reading.



After the settings are changed, the "Save" symbol must be actuated.

ID: 0000018973-EN-001

## 4.8 About

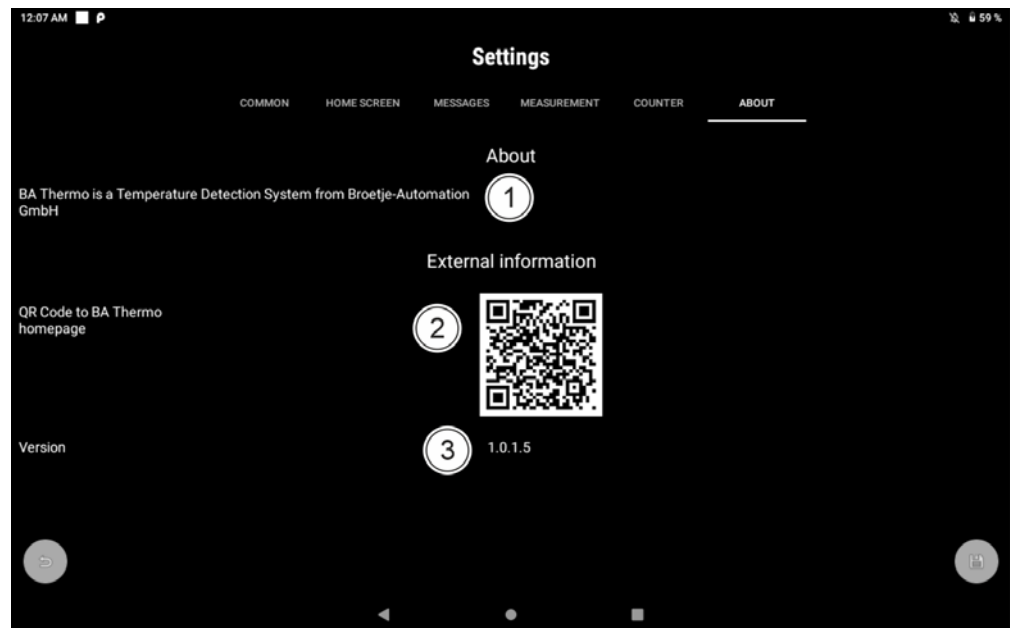


Fig. 4-8: "About" screen

Item	Element	Function / meaning
About		
1		Information on BA-Thermo
External information		
2	QR code to the BA-Thermo homepage	Scanning the QR code takes you to the BA-Thermo homepage.
3	Version	Display field: The currently loaded version of the BA-Thermo app.

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## 24 - 4 Control and Display Elements

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# 5 Calibration

## 5.1 First operation/ongoing operation

The BA-Thermo temperature scanner offers a fast and approximate temperature measurement under the assumption of constant external environmental conditions (such as the ambient temperature, air currents or solar radiation).

If these environmental conditions change over the course of several days, recurring manual adjustments of the correction value may be necessary. In addition, the given temperature difference between skin and core body temperature is taken into consideration by means of the correction value.

### Correction value adjustment

#### Procedure

- ▶ 1. Determine a comparison temperature (core body temperature) with a suitable measuring device (recommendation: digital ear thermometer) and note the displayed value. [Temperature A]
- ▶ 2. Open the "Measurement" screen on the "Settings" menu.

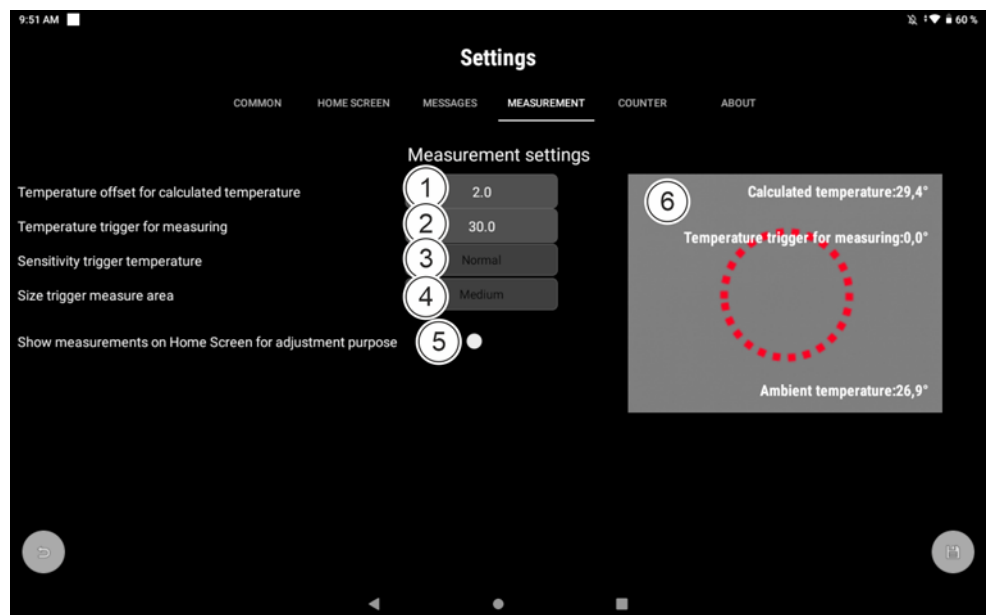


Fig. 5-1: "Measurement" screen

- ▶ 3. Perform the visual field measurement with the BA-Thermo temperature scanner.
- ▶ 4. Read the displayed value "Calculated temperature including correction value" in the displayed camera window Fig. 5-1 - (6) and note the displayed value [Temperature B].

## 26 - 5 Calibration

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- ▶ 5. Determine the difference between temperature A and temperature B. [Difference].
- ▶ 6. Add the difference to the old correction value "Correction value for calculated temperature" *Fig. 5-1 - (1)* and overwrite with the new correction value.
- ▶ 7. Save the settings.
- ▶ 8. Check whether the "Calculated temperature including correction value" [Temperature B] corresponds to [Temperature A].
- ▶ 9. Repeat steps 3 to 7 if pertinent.

### Example:

- [Temperature A] = 36.5°C
- [Temperature B] = 35.3°C
- [Difference] = 1.2°C
- Old correction value for calculated temperature = 0.5°C
- New correction value for calculated temperature = 1.7°C

ID: 0000018991-EN-001