



Operation manual

Translation of the German original version

Legal notice

Notes concerning the documentation

Ensure that the applicable documentation is used for this product. For safe handling, knowledge that is provided in these instructions is required.

The product may only be handled while following this documentation, particularly the safety instructions and warnings it contains. The personnel must be qualified for the respective task and have the capability to recognise risks and prevent possible dangers.

Manufacturer and holder of rights

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Disclaimer

The contents of the documentation has been checked to ensure that it corresponds to the hardware and software described. Nevertheless, deviations cannot be ruled out, so Benning cannot guarantee complete correspondence. The contents of this documentation are checked at regular intervals, and any corrections that are needed are contained in the versions that follow.

General non-discrimination

Benning is aware of the importance of language with regard to the gender equality and endeavors to take this into account at all times. To improve readability, we have refrained from consistently using differentiating formulations.

1 Introduction

The app “BENNING TC-Image Link” described here (in the following only referred to as “app”) enables you to connect your end device (tablet, smartphone) with a compatible thermal imaging camera and offers the following functions:

- Screen casting of the live view and remote control of the thermal imaging camera
- Saving and sharing thermal images and videos
- Temperature analysis via temperature measuring points in the live view
- Image editing and analysis
- Temperature alarms for automatic identification of problem areas and anomalies
- Access to the device memory of the thermal imaging camera

* The functions supported depend on the thermal imaging camera used.

Supported devices:

- BENNING TC 30 (item no.: 050530)

Further information



<https://tms.benning.de/tc>

1.1 Naming convention

Device

In this operating manual, the term “device” is generally used for thermal imaging cameras.

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2 Safety

2.1 Intended use

Only use the device within the framework of the corresponding technical data. Any operating conditions that deviate from this shall be considered as improper use. Solely the user of the device shall be liable for any resulting damage.

Please note the following:

- In case of improper use, the liability and warranty claims become void. Solely the user of the device shall be liable for any damage resulting from improper use. Uses not complying with the intended use include e. g.:
 - Use of components, accessories, spare or replacement parts that have not been released and approved for the respective application by Benning
 - Non-observance, manipulation, changes or misuse of the operating manual or the instructions and notes contained therein
 - Any form of misuse of the device
 - Any use other than or beyond that described in this operating manual
- Warranty and liability claims are generally excluded if the damage is the result of force majeure.
- If any prescribed services are not performed regularly or not on time, according to the manufacturer's specifications during the warranty period, a decision about a warranty claim can only be made once the findings are available.

Direct any questions to Technical Support.

3 Establishing a connection

Requirements

- You have implemented one of the following three methods for establishing a connection:
 - Method 1 (recommended): You have enabled the hotspot on your end device and selected it in the Wi-Fi connection settings of the device.
 - Method 2: You have enabled the hotspot on your device and selected it on your end device.
 - Method 3: The device and the end device are connected to the same Wi-Fi.

Procedure – Automatic login

To establish a connection between the app and the device, go to the home screen and select the live view via “Device” or access the image data via “On-Device Files”.

1. Tap the “Connect Device” button.

All available devices are displayed.

2. Select the corresponding device.

If you are connecting the device for the first time or have reset the device to the factory settings, you first have to enable it.

You are prompted by a message to enable the device.

3. Select the corresponding device.
4. Tap “Activate”.
5. Enter a new password (in both text fields).
6. Confirm by tapping “Activate”.

The connection is established. The device is now stored in the app. You will only need to enter the password again if you want to connect the device to a new end device or if you have previously logged out the device. (The device is logged out by resetting the device to the factory settings.)

Procedure – Manual login

You can also manually establish a connection between the app and the device.

1. Enable the Wi-Fi or hotspot of the device.
2. Tap “Connect Device” and select “Manual Login”.
3. Enter the IP address and password of the device. The default password for the Android app is “abcd1234”. The default password for the IOS app is “HMsc2020”. If you have already enabled the device, enter the assigned password.

Available devices will be displayed.

4. Select the corresponding device.

If you are connecting the device for the first time or have reset the device to the factory settings, you first have to enable it. You are prompted by a message to enable the device.

5. Select the corresponding device.
6. Tap “Activate”.
7. Enter a new password (in both text fields).
8. Confirm by tapping “Activate”.

The connection is established. The device is now stored in the app. You will only need to enter the password again if you want to connect the device to a new end device or if you have previously logged out the device. (The device is logged out by resetting the device to the factory settings.)





Unlocking a user

If you enter the wrong password three times when establishing a connection, you will be blocked as a user.

1. To be able to reconnect, you must log out the device. To do this, reset the device to the factory settings (device settings will be lost, memory data will be retained).
2. Start the connection process again.
The password assignment for enabling the device is displayed.
3. Assign a new password.
The connection is re-established.

Home screen

You can use the buttons on the home screen to make settings and navigate in the app:

Symbols	Description
	Settings <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> Save Pictures to Phone Clear Cache • Help <ul style="list-style-type: none"> Forwarding to the BENNING website • About <ul style="list-style-type: none"> App data
  	<ul style="list-style-type: none"> • Device <ul style="list-style-type: none"> Live view • Picture & Video <ul style="list-style-type: none"> Data on the end device • On-Device Files <ul style="list-style-type: none"> Data on the device (camera)


4 Operating the live view

To open the live view, click the “Device” icon on the home screen. You can operate the camera remotely and use the following functions:

Symbol	Description
	<p>Settings</p> <ul style="list-style-type: none"> • Device Information • Device Name • Update (Only displayed if an update is available.) • Alarm Enabling and disabling the temperature alarm. • Log out
	<p>Alarm Info</p> <p>If the temperature alarm is enabled both in the camera and the app, all alarms will be displayed under “Alarm Info” including thermal image, temperature and time.</p>
	<p>Show temperature measuring points</p> <ul style="list-style-type: none"> • Temperature measuring point in the center of the image ON • Hottest temperature measuring point ON • Coldest temperature measuring point ON
	<p>Image modes</p> <ul style="list-style-type: none"> • Thermal • PIP • Optical • Combined
	<p>Device calibration</p>
	<p>Measurement settings</p> <ul style="list-style-type: none"> • Emissivity • Distance distance to the object [m] • Background Temperature (Refl. Temp.)

5 Editing an image

To edit an image, open it. To do this, tap an image in one of the following views:

- At the bottom left of the “Device” live view.
- In the “Picture & Video” view.
- To edit images from the “On-Device Files” view, load the desired images on your end device by tapping the  symbol. Now, the images are available to be edited in the “Picture & Video” view.

When having opened an image, the following functions are displayed:








































Symbols	Description
   	<ul style="list-style-type: none"> • Share image • Create PDF file • Opens the image editing mode • Delete image

Table 1: Managing and editing an image

To open the image editing mode, tap the  symbol. Here, the following functions are available:

Symbols	Description
   	<p>Opens the image editing mode</p>
          	<p>Temperature measuring points</p> <ul style="list-style-type: none"> • Center • Hot • Cold • Custom (can be moved within the image) • Frame The temperature measuring shape can be adjusted within the image. • Clear
        	<p>Setting the image mode</p> <ul style="list-style-type: none"> • Thermal (thermal image) • Combined 2 • Optical (visual image) • PIP (picture in picture)
         	<p>Colour palettes</p>

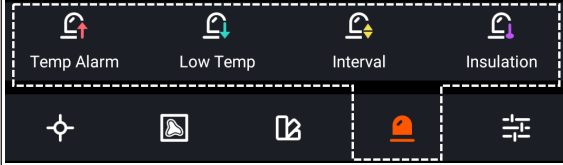
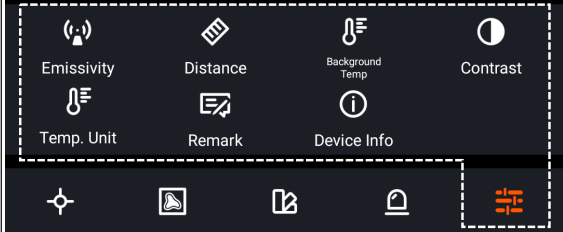
Symbols	Description
	<p>Setting a temperature alarm</p> <ul style="list-style-type: none"> • Temp Alarm (upper temperature threshold) • Low Temp (lower temperature threshold) • Interval (temperature range between the upper and lower threshold) • Insulation (temperature range outside the interval)
	<p>Opens settings for the following values:</p> <ul style="list-style-type: none"> • Emissivity • Distance (to the object) • Background Temperature • Contrast • Temperature Unit • Remark • Device Info

Table 2: Editing an image

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The logo for BENNING, featuring the word "BENNING" in a bold, blue, sans-serif font. Above the letters "E", "N", "N", and "I" is a thick, horizontal grey bar.

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