

EN

INSTRUCTIONS
THERMOHYGROMETER

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Information on the use of these instructions

Symbols



Warning of electrical voltage

This symbol indicates dangers to the life and health of persons due to electrical voltage.



Warning

This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.



Caution

This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Notice

This signal word indicates important information (e.g. material damage), but does not indicate hazards.



Info

Information marked with this symbol helps you to carry out your tasks quickly and safely.



Follow the manual

Information marked with this symbol indicates that the instructions must be observed.

You can download the current version of these instructions via the following link:



BC21



<https://hub.trotec.com/?id=43335>

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use!



Warning

Read all safety warnings and all instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in an aggressive atmosphere.
- Do not immerse the device in water. Do not allow liquids to penetrate into the device.
- The device may only be used in dry surroundings and must not be used in the rain or at a relative humidity exceeding the operating conditions.
- Protect the device from permanent direct sunlight.
- Do not expose the device to strong vibrations.
- Do not open the device.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Use batteries of type 6LR61 (9 V battery).
- Never charge a battery that cannot be recharged.
- Insert the battery into the battery compartment according to the correct polarity.
- Remove the discharged battery. Batteries contain materials hazardous to the environment. Dispose of the battery according to the national regulations.
- Remove the battery from the device if you will not be using the device for a longer period of time.
- Never short-circuit the terminal of the battery!
- Do not swallow batteries! If a battery is swallowed, it can cause severe internal burns within 2 hours! These burns can lead to death!

- If you think batteries might have been swallowed or otherwise entered the body, seek medical attention immediately!
- Keep new and used batteries and an open battery compartment away from children.
- Observe the storage and operating conditions (see Technical data).

Intended use

Only use the device for indoor temperature and humidity measurements within the measuring range specified in the technical data. Observe and comply with the technical data.

Any use other than the intended use is regarded as misuse.

Reasonably foreseeable misuse

Do not use the device in potentially explosive atmospheres, for measurements in liquids or at live parts.

Any unauthorised modifications, alterations or structural changes to the device are forbidden.

Personnel qualification

People who use this device must:

- have read and understood the instructions, especially the Safety chapter.

Residual risks



Warning of electrical voltage

There is a risk of a short-circuit due to liquids penetrating the housing!

Do not immerse the device and the accessories in water. Make sure that no water or other liquids can enter the housing.



Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



Warning

There is a danger of suffocation for children due to packaging material! Keep packaging films and parts away from children. There is a risk of death due to suffocation.



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!



Caution

Keep a sufficient distance from heat sources.

Notice

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

Notice

Do not use abrasive cleaners or solvents to clean the device.

Information about the device

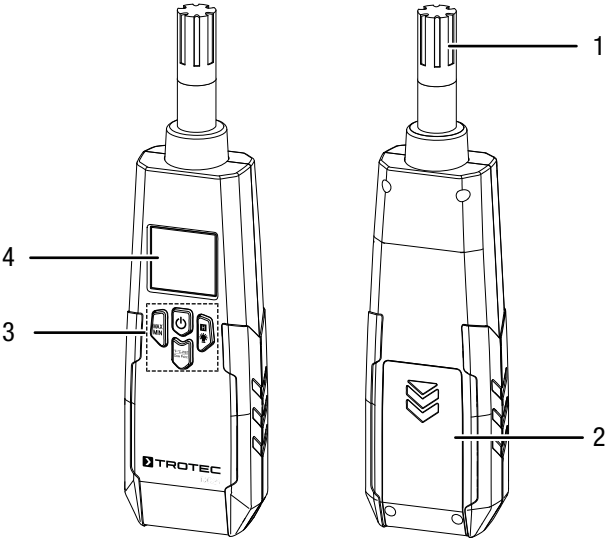
Device description

The thermohygrometer BC21 can be used to determine the air, dew point and wet-bulb temperature as well as the humidity level of indoor areas.

For assessing the measurements, a Max / Min function (maximum and minimum value) and a Hold function for freezing the currently measured value are also available.

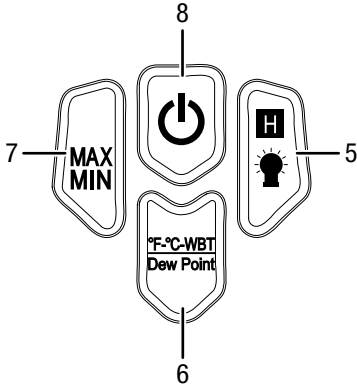
When not in use, an automatic switch-off saves the battery.

Device depiction



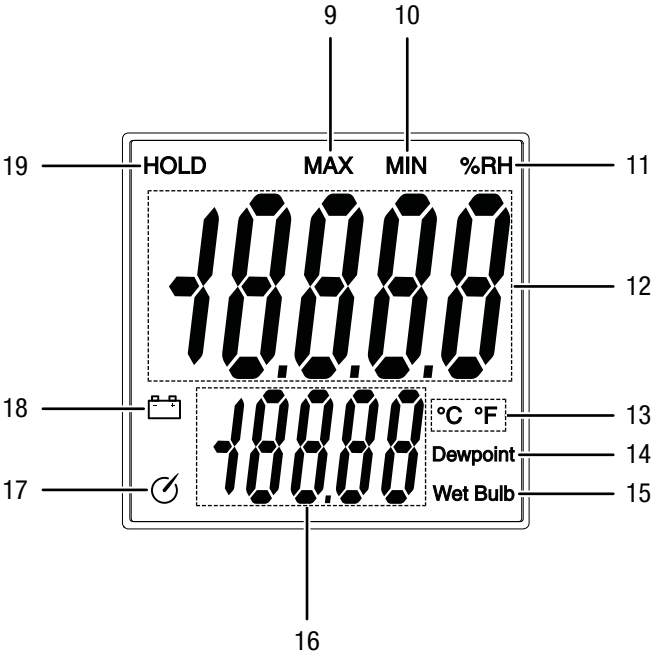
No.	Designation
1	Measuring sensor
2	Battery compartment with cover
3	Operating elements
4	Display

Operating elements



No.	Designation
5	HOLD/lamp button
6	Dew Point button
7	MAX/MIN button
8	Power button

Display



No.	Designation
9	MAX indication
10	MIN indication
11	%RH indication
12	Measurement value display
13	Temperature unit indication
14	Dewpoint indication
15	Wet Bulb indication
16	Lower measurement value display
17	Automatic switch-off indication
18	Battery indication
19	HOLD indication

Technical data

Parameter	Value
Model	BC21
Weight	210 g
Dimensions (height x width x depth)	230 mm x 55 mm x 32 mm
Temperature	
Measuring range	-30 to 100 °C (-22 to 199 °F)
Accuracy	± 1 °C (± 1.5 °F)
Measuring range resolution	0.1 °C (0.1 °F)
Dew point temperature	
Measuring range:	-30 to 100 °C (-22 to 199 °F)
Accuracy	± 1 °C (± 1.5 °F)
Measuring range resolution	0.1 °C (0.1 °F)
Wet-bulb temperature	
Measuring range:	-30 to 100 °C (-22 to 199 °F)
Accuracy	± 1 °C (± 1.5 °F)
Measuring range resolution	0.1 °C (0.1 °F)
Humidity	
Measuring range:	0 to 100 % RH (specified 5 to 95 % RH)
Accuracy	± 2 % RH (at 25 °C and 5 to 95 % RH)
Measuring range resolution	0.1 % RH
General technical data	
Measuring rate	2.5 measurements per second
Response time	10 seconds (90 % RH / 25 °C calm)
Operating temperature	0 to 50 °C with < 80 % RH, non-condensing
Storage temperature	-10 to 60 °C with < 80 % RH, non-condensing
Power supply	1 x 9 V battery
Device switch-off	After approx. 15 minutes of non-use

Scope of delivery

- 1 x Device BC21 (without battery)
- 1 x Quick guide

Transport and storage

Notice

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

Transport

The manufacturer packed the device to the best of his abilities to protect it against transport damage.

Storage

When the device is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- at the temperature specified in the technical data
- battery is removed from the device

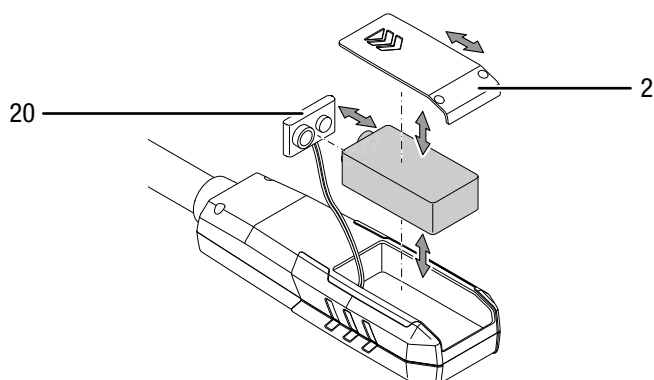
Operation

Inserting the batteries

Notice

Make sure that the surface of the device is dry and the device is switched off.

1. Open the battery compartment by sliding open the cover (2) in the direction of the arrow.
2. Remove the battery compartment cover (2).
3. Use the battery clip (20) to connect the battery (1 x 9 V) with correct polarity.
4. Insert the battery in the device.
5. Slide the battery compartment cover (2) back on the device.



Switch-on and measurements

1. Press the *Power* button (8).
 - ⇒ The display is switched on.
 - ⇒ The device is ready for operation.
2. Point the device at the area to be measured.
 - ⇒ Wait for a moment to achieve a stable measured value.
 - ⇒ The current measured value is displayed in the measurement value display (12).

Notice

Note that moving from a cold area to a warm area can lead to condensation forming on the device's circuit board. This physical and unavoidable effect can falsify the measurement. In this case, the display shows either no measured values or they are incorrect. Wait a few minutes until the device has become adjusted to the changed conditions before carrying out a measurement.

Switching the display illumination on and off

1. Press the *HOLD / lamp* button (5) for approx. 3 seconds.
 - ⇒ The display illumination goes on.
2. Press the *HOLD/lamp* button (5) again for approx. 3 seconds.
 - ⇒ The display illumination switches off.

Setting the MAX / MIN function

1. Press the *MAX / MIN* button (7).
 - ⇒ The *MAX* indication (9) appears on the display.
 - ⇒ Actuating the *MAX / MIN* button (7) starts a new measurement. The value now appearing in the measurement value display (12) is the reference value.
 - ⇒ *MAX* function: The maximum value of the newly started measuring interval is displayed in the measurement value display (12). Values smaller than the one displayed will not be indicated.
2. Press the *MAX/MIN* button (7) again.
 - ⇒ The *MIN* indication (10) appears on the display.
 - ⇒ Actuating the *MAX / MIN* button (7) starts a new measurement. The value now appearing in the measurement value display (12) is the reference value.
 - ⇒ *MIN* function: The minimum value of the newly started measuring interval is displayed in the measurement value display (12). Values exceeding the one displayed will not be indicated.
3. Press the *MAX / MIN* button (7) for approx. 2 seconds to terminate the function.
 - ⇒ The measurement interval is reset.
 - ⇒ The current measured value is displayed in the measurement value display (12).

Setting the HOLD function

1. Press the *HOLD/lamp* button (5).
 - ⇒ The current value will be held.
2. Press the *HOLD/lamp* button (5) again.
 - ⇒ The current measured value is displayed in the measurement value display (12).

Displaying additional measured values

In addition to the current measured value (12), you can also display the wet-bulb temperature and the dew point temperature in the lower measurement value display (16).

The wet-bulb temperature is the lowest air temperature that can be achieved by evaporation cooling. The dew point temperature is the temperature at which the moisture contained in the air reaches 100 % RH and condenses. Both values are influenced by the initial values of air temperature, relative humidity and air pressure.

1. Repeatedly press the *Dew Point* button (6) to select the wet-bulb temperature.
 - ⇒ The *Wet Bulb* indication (15) appears.
 - ⇒ The current wet-bulb temperature is displayed in the lower measurement value display (16).
2. Press the *Dew Point* button (6) again to select the dew point temperature.
 - ⇒ The *Dewpoint* indication (14) appears.
 - ⇒ The current dew point temperature is displayed in the lower measurement value display (16).

Displaying the temperature unit

All measured values can be displayed in °C and °F. Please proceed as follows to set the temperature unit:

1. Repeatedly press the *Dew Point* button (6) until the desired temperature unit appears on the *Temperature unit* indication (13).

Switch-off

Notice

The automatic switch-off function is activated by default after each switch-on. If the automatic switch-off function is active, the *Automatic switch-off* indication (17) is displayed.

The device comes equipped with an automatic switch-off function that switches the device off after 15 minutes of inactivity. Please proceed as follows to deactivate the automatic switch-off function:

1. Simultaneously press the *HOLD/lamp* button (5) and the *Power* button (8).
 - ⇒ The *Automatic switch-off* indication (17) disappears.

Please proceed as follows to switch off the device manually:

1. Press the *Power* button (8).
 - ⇒ The device will be switched off.

Maintenance and repair

Battery change

A battery change is required when the *Battery* indication (18) lights up or the device can no longer be switched on. See chapter Operation.

Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

Display segments are only faintly visible or flicker:

- Check the charging status of the battery. Change the battery, if required (see chapter Inserting the battery).
- Make sure that the battery is properly positioned. Check the polarity is correct.

The device displays implausible measured values:

- Check the charging status of the battery. Change the battery, if required (see chapter Inserting the battery).
- Make sure that the battery is properly positioned. Check the polarity is correct.
- The sensor is defective or soiled. Clean the device as described in the Cleaning chapter.

Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out wheeled bin indicates that this device and any associated components (e.g. remote controls) must not be disposed of with household waste at the end of their life, in accordance with the Waste Electrical and Electronic Equipment Directive (2012/19/EU) and national laws.

You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.



This icon with the crossed-out wheeled bin indicates that batteries or accumulators must not be disposed of with household waste at the end of their life. If the device contains batteries or accumulators that contain mercury, cadmium or lead, the respective chemical symbol (Hg, Cd or Pb) is shown below the icon of the crossed-out wheeled bin. To prevent environmental pollution, do not carelessly leave batteries or electrical and electronic equipment containing batteries in public areas. In the European Union, batteries and accumulators must be returned to a designated collection point in accordance with REGULATION (EU) 2023/1542 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 July 2023 concerning batteries and waste batteries. Remove batteries/accumulators and dispose of them separately according to the relevant legal requirements.

Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) and the Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) (as amended), devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

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