Manuals+ — User Manuals Simplified.

TROTEC BN35F Radio Thermostat with Timer Instruction Manual

Contents

> TROTEC

TROTEC BN35F Radio Thermostat with Timer

Notes regarding the operating manual

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.

Note
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 operating manual must be observed

You can download the current version of the operating manual and the EU declaration of conformity via the following link:

BN35

https://hub.trotec.com/?id=42496

BN35F

https://hub.trotec.com/?id=42497

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.

- The device is supplied with a warning sign. Prior to initial start-up, make sure to paste the corresponding warning sign in your local language over the one present at the rear of the device as described in chapter Operation Do not plug in line! For use in dry rooms only! Voltage-free only with plug disconnected! Do not cover during operation!
- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Do not use the device with wet or damp hands.
- This device is not a toy. Keep away from children and animals. Do not leave the device unattended during operation.
- Protect the device from permanent direct sunlight.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Do not open the device.
- Never charge batteries that cannot be recharged.
- Different types of batteries and new and used batteries must not be used together.
- Insert the batteries into the battery compartment according to the correct polarity.
- Remove discharged batteries from the device. Batteries contain materials hazardous to the environment. Dispose of the batteries according to the national regulations.

- Remove the batteries from the device if you will not be using the device for a longer period of time.
- Never short-circuit the supply terminal in the battery compartment!
- 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).
- Check accessories and connection parts for possible damage prior to every use of the device. Do not use any defective devices or device parts.

Intended use
Only use the device as temperature-controlled plug adapter between the power connection and the terminal device whilst adhering to the technical data. To use the device for its intended use, only use accessories and spare parts which have been approved by Trotec.

Foreseeable misuse
The device is not suitable for use with any type of extension cables. The device must not be used in potentially explosive areas, when wet or very humid.

Personnel qualifications
People who use this device must: have read and understood the operating manual, especially the Safety chapter.

Residual risks

Warning of electrical voltage
Electric shock due to insufficient insulation! Check the device for damages and proper functioning before each use. If you detect damages, do not use the device any longer. Do not use the device when either the device or your hands are damp or wet! Do not use the device when the battery compartment or the housing is open.

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
Risk of suffocation! Do not leave the packaging lying around. Children may use it as a dangerous toy.

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
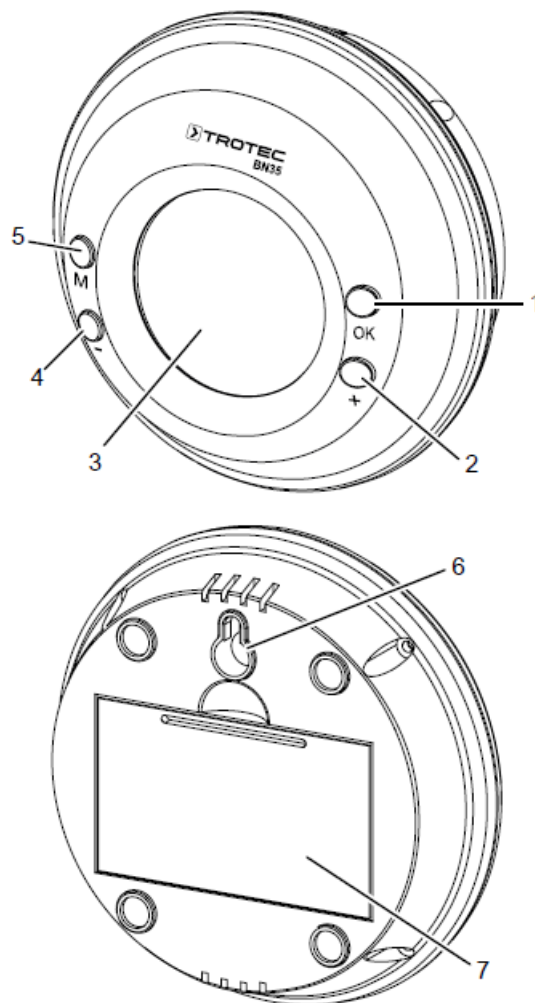Keep a sufficient distance from heat sources.

Note
To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.
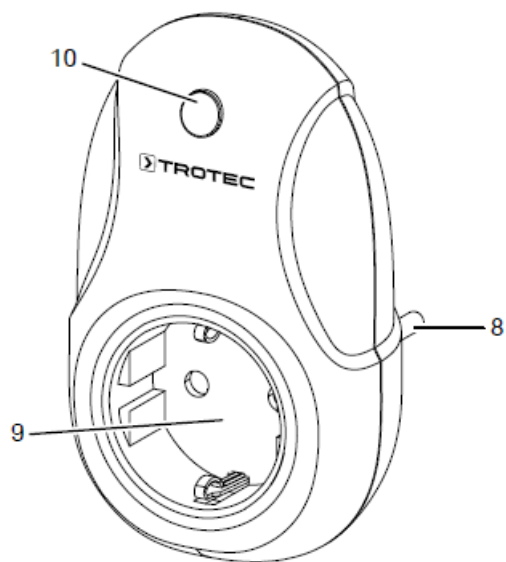
Note
Do not use abrasive cleaners or solvents to clean the device.

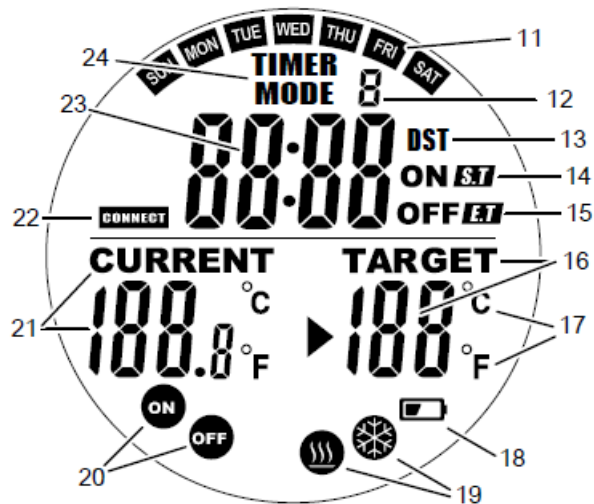## Information about the device

Device description

The radio thermostat with timer BN35 / BN35F allows for automatic temperature control of heating devices and air conditioners between 0 °C and 70 °C in increments of 1 °C. For this purpose, the socket thermostat is simply plugged in between the heating device or air conditioner and the socket, and the desired temperature is set at the radio transmitter. Via its integrated sensors, the thermostat measures the current room temperature and regulates the heating device or air conditioner according to the desired nominal value. Additionally, devices connected to the radio thermostat, such as heating devices or air conditioners, can be automatically controlled by a timer function. The timer function can be programmed individually. Up to six different timers can be set for each day. One radio transmitter can be used to control up to 100 socket thermostats.

Device depiction

No.	Designation
1	OK button
2	+ button
3	Display
4	– button
5	M button
6	Suspension
7	Cover of radio transmitter battery compartment
8	Socket connection
9	Connection for the terminal device (plug adapter)
10	Thermostat on/off switch

Display

No.	Designation
11	Weekdays indication
12	Mode / Timer selection indication
13	DST indication (daylight saving time)
14	Start time indication
15	End time indication
16	Target temperature indication
17	Celsius / Fahrenheit indication
18	Radio transmitter battery status indication
19	Cooling / heating mode indication
20	Operation ON / OFF indication
21	Indication of the current ambient temperature
22	Connection status indication
23	Segment display for settings
24	Timer / Mode indication

Technical data

Parameter	Value
Model	BN35 / BN35F
Socket thermostat	
Weight	116 g

Dimensions (length x width x height)	73 x 66 x 112 mm
Switching capacity	75 A / 250 VA (inductive load) 16 A / 250 VA (ohmic load)
Power supply	230 V AC / 50 Hz
Operating temperature	0 °C to 70 °C with 0 % to approx. 85 % RH
Storage temperature	-10 to 70 °C with 0 % to approx. 85 % RH
Thermostat radio transmitter	
Weight	122 g
Dimensions (length x width x height)	90 x 90 x 39 mm
Temperature setting range	0 °C to 70 °C (41 °F to 85 °F) in increments of 1 °C

Measuring intervals	Radio transmitter active and display ON:	• Temperature indication updating every second • Sending commands to thermostats every 5 seconds • Changing to standby mode and deactivating display illumination after 25 s of inactivity
	Radio transmitter active and display OFF:	• Temperature indication updating every 60 seconds • Sending commands to thermostats every 60 seconds
Automatic switch-off of the display		After 25 s of inactivity
Transmission frequency		2.4 GHz
Radio range (in open terrain)		20 m

Scope of delivery

- 1 x Socket thermostat
- 1 x Thermostat radio transmitter
- 1 x Manual

Transport and storage

Note
If you store or transport the device improperly, the device may be damaged. Note the information regarding transport and storage of the device.

Transport
For transporting the device, use the bag included in the scope of delivery in order to protect the device from external influences. 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

- with a cover to protect it from invasive dust if necessary

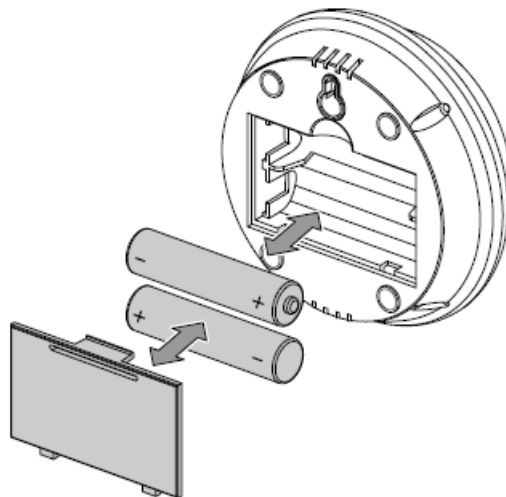- the storage temperature complies with the values specified in the Technical data

Operation

Inserting the batteries

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

1. Open the battery compartment of the radio transmitter by removing the battery compartment cover (7) with your fingers.

2. Insert the batteries (2 batteries of type AA) into the battery compartment with correct polarity.

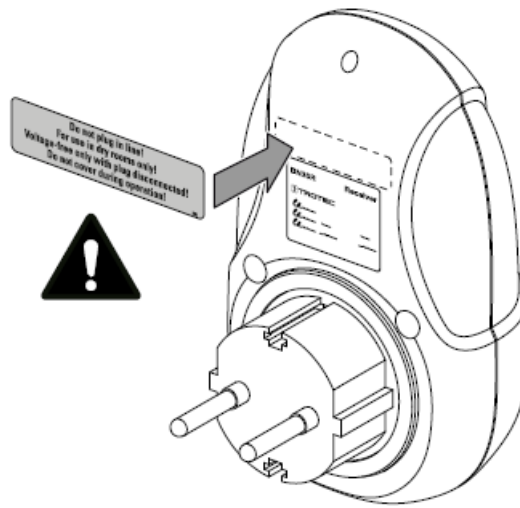3. Reattach the battery compartment cover to the battery compartment

Switching the device on

Info
Please 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.

1. Make sure to paste the corresponding warning sign in your local language over the one present at the rear of the device

2. Plug the socket thermostat into a properly fused socket.
3. Connect a terminal device to the connection for the terminal device (plug adapter) (9).
4. Press any button on the radio transmitter.
5. The radio transmitter is switched on.

Connecting the radio transmitter and socket thermostat
To be able to control the socket thermostat with the radio transmitter, the devices must be connected to one another. To do so, please proceed as follows:

1. Simultaneously press and hold the + button (2) and the – button (4) on the radio transmitter for three seconds.
    1. The connection status indication (22) flashes on the display. The radio transmitter is ready to be connected to the socket thermostat.
2. Press and hold the thermostat on/off switch (10) at the socket thermostat for three seconds.
    1. The thermostat on/off switch (10) flashes red. The socket thermostat is ready for connection.
3. Wait a few seconds until connection of the devices is completed.
    1. Once connection is completed, the thermostat on/off switch (10) and the connection status indication (22) stop flashing

Changing the unit °C / °F
The device is switched on.

1. Press and hold the M button (5) for three seconds. The segment display for settings (23) flashes.
2. Repeatedly press the OK button (1) until the °C or °F symbol appears and flashes on the segment display for settings (23).
3. Use the + button (2) and the – button (4) to select the desired unit, and confirm with OK (1).

Changing the time format
You can choose between 12-hour or 24-hour format. The device is switched on.

1. Press and hold the M button (5) for three seconds.
    1. The indication for the time format flashes.
2. Use the + button (2) and the – button (4) to select the desired time format, and confirm with OK (1).
3. Repeatedly press the OK button (1) until you have left the settings menu and all parameters to be set have stopped flashing.

Changing the weekday and time
The device is switched on.

1. Press and hold the M button (5) for three seconds.
    1. The segment display for settings (23) flashes.
2. Repeatedly press the OK button (1) until the weekdays indication (11) flashes on the display.
3. Use the + button (2) or the – button (4) to select the desired weekday, and confirm with OK (1).
4. Repeatedly press the OK button (1) until the segment display for settings (23) flashes.
5. Use the + button (2) or the – button (4) to select the desired hours and minutes, and confirm with OK (1).
6. Repeatedly press the OK button (1) until you have left the settings menu and all parameters to be set have stopped flashing.

Activating and deactivating daylight saving time (DST)
Activate the daylight saving time option if you want the thermostat to automatically switch over from standard time to daylight saving time. The device is switched on.

1. Press and hold the M button (5) for three seconds.
    1. The indication for the time format flashes.
2. Repeatedly press the OK button (1) until the DST indication (13) flashes on the display.
    1. The OFF symbol lights up beneath the DST indication (13).
3. Activate the daylight saving time option using the + button (2) or the – button (4).
    1. The ON symbol lights up beneath the DST indication (13).
4. Repeatedly press the OK button (1) until you have left the settings menu and all parameters to be set have stopped flashing.

Note
If the time has already been set, it will be put forward one hour when you activate DST, and put back one hour when you deactivate DST. If necessary, correct the time subsequently.
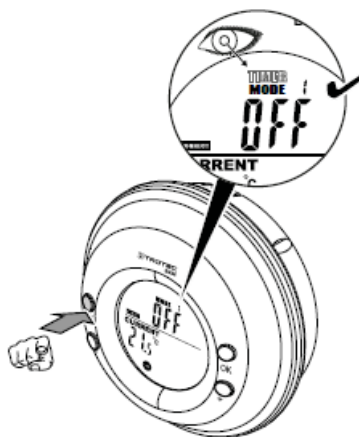

Presetting thermostat mode

Note:
If the desired temperature is lower than the room temperature, please use the cooling function. If the desired temperature is higher than the room temperature, please use the heating function. The device allows you to preset up to four individual modes and to select either the heating or cooling function for each mode. Please proceed as follows to preset a mode with the radio transmitter

The radio transmitter is switched on. The radio transmitter and socket thermostat are connected to one another

1. Repeatedly press the M button (5) until MODE lights up on the Timer / Mode indication (24) of the display

2. Use the + button (2) and the – button (4) to choose between mode 1 to 4.

3. Press and hold the M button (5) for three seconds.

    1. The cooling / heating mode indication (19) flashes.

    2. You are now in the settings menu of the selected mode.

4. Use the + button (2) and the – button (4) to select the cooling `or heating function, and confirm your selection with OK (1).

    1. The target temperature indication flashes.

5. Use the + button (2) and the – button (4) to set the desired target temperature, and confirm with OK (1).

6. Now select the Prd (Period) or FULL (24/7) option using the + button (2) and the – button (4), and confirm with OK (1).

    1. Select Prd if you want the mode setting of the thermostat to be enabled only on certain days over a selected time span.

    2. Select FULL if you want the mode setting of the thermostat to be enabled for seven days a week and 24 hours.

7. If you have selected the Prd option, select the desired weekdays using the + button (2) and the – button (4), and confirm with OK (1).

8. Use the + button (2) and the – button (4) to set the desired start time (S.T) for the thermostat mode, and confirm with OK (1).

9. Use the + button (2) and the – button (4) to set the desired end time (E.T) for the thermostat mode, and confirm with OK (1). After successfully setting the start and end time, both times will be displayed alternately.

    1. The selected mode is now activated and preset. It can be activated or deactivated at any time. After the settings have been made, you can tell that the set mode is active by the fact that the Timer / Mode indication (24) and the operation ON / OFF indication (20) flash after automatic switch-off and restart.

Activating and deactivating thermostat mode
The device allows you to activate not only one but several modes using the Prd option at a time. Proceed as follows to activate a mode programme

Option 1:
The radio transmitter is switched on and no mode is active. The desired mode programme is preset.

1. Repeatedly press the M button (5) until MODE lights up on the Timer / Mode indication (24) of the display.

2. Use the + button (2) and the – button (4) to select the desired mode programme between mode 1 and mode 4.

    1. If OFF is displayed on the segment display for settings (23), the mode is not activated.

3. Press the OK button (1) once.

1. The presettings of the selected mode programme are displayed and the mode is activated.
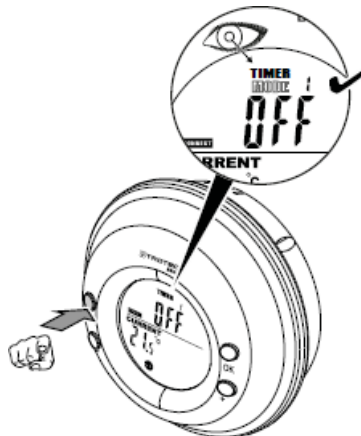
Option 2:
The radio transmitter is switched off. The desired mode programme is preset.

1. Enable the display by pressing any button.
2. First check whether a preset mode or timer is active. If this is the case, the Timer / Mode indication (24) and the operation ON / OFF indication (20) will flash. If you want to deactivate the active mode/timer and activate another preset mode instead, please proceed as follows:
3. Repeatedly press the M button (5) until MODE lights up on the Timer / Mode indication (24) of the display.
4. Use the + button (2) and the – button (4) to choose between mode 1 to 4.
    1. The OFF symbol lights up on the operation ON / OFF indication (20).
5. Press the OK button (1) to activate the socket thermostat with the selected mode.
    1. The presettings of the selected thermostat mode are displayed and the mode is activated.
    2. If the relay is open and the thermostat controls the terminal device, the thermostat on/off switch (10) will be constantly illuminated in red. Additionally, ON will be illuminated on the operation ON / OFF indication (20).
    3. If the settings do correspond to the current ambient temperature, the thermostat on/off switch (10) will not flash even if the mode is activated. Additionally, OFF will be illuminated on the operation ON / OFF indication (20).
    4. The socket thermostat is activated with the selected mode.
6. If the socket thermostat is activated, press the OK button (1) twice to deactivate it.

Presetting timer mode
The device allows you to preset up to six different automatic timer programmes per day. For each individual programme, you can select on what day and at what time the timer will be activated and deactivated automatically. There are four options for selecting the days: You can either select one single day of the week, only working days, only the weekend, or the entire week. Proceed as follows to preset a timer programme The device is switched on.

1. Repeatedly press the M button (5) until TIMER lights up on the Timer / Mode indication (24) of the display.

2. Use the + button (2) and the – button (4) to choose between timer 1 to 6.
3. Press and hold the M button (5) for three seconds.
    1. The weekdays indication (11) flashes.
4. Use the + button (2) and the – button (4) to select the day of the week on which you want the timer to be activated automatically. Confirm your selection with OK (1).
    1. The segment display for settings (23) flashes.

2. You can now set the start time (S.T).

5. Use the + button (2) and the – button (4) to select the desired number of hours, and confirm with OK (1).

    1. The minute indication flashes on the display.

6. Use the + button (2) and the – button (4) to select the desired number of minutes, and confirm with OK (1).

    1. You can now set the end time (E.T).

7. Use the + button (2) and the – button (4) to select the desired number of hours, and confirm with OK (1).

    1. The minute indication flashes on the display.

8. Use the + button (2) and the – button (4) to select the desired number of minutes, and confirm with OK (1).

    1. The selected timer mode is now activated and preset. It can be activated or deactivated at any time. After the settings have been made, you can tell that the set timer is active by the fact that the Timer / Mode indication (24) and the operation ON / OFF indication (20) flash after automatic switch-off and restart.

Activating and deactivating timer mode

Info
In timer mode, the thermostat only switches the connected terminal devices on and off, but does not control the temperature settings. For this purpose, please select thermostat mode. Proceed as follows to activate a timer programme:

Option 1:
The radio transmitter is switched on and no timer is active. The desired timer programme is present

1. Repeatedly press the M button (5) until TIMER lights up on the Timer / Mode indication (24) of the display.
2. Use the + button (2) and the – button (4) to select the desired timer programme between timer 1 and timer 6.

    1. If OFF is displayed on the segment display for settings (23), the timer is not activated.

3. Press the OK button (1) once.

    1. The presettings of the selected timer programme are displayed and the timer is activated.

Option 2:
The radio transmitter is switched off. The desired timer programme is preset.

1. Enable the display by pressing any button.
2. First check whether a preset mode or timer is active. If this is the case, the Timer / Mode indication (24) and the operation ON / OFF indication (20) will flash. If you want to deactivate the active mode / timer and activate another preset timer mode instead, please proceed as follows:
3. Repeatedly press the M button (5) until TIMER lights up on the Timer / Mode indication (24) of the display and the presettings of the activated timer programme are displayed.
4. Use the + button (2) and the – button (4) to choose between timer 1 to 6.

    1. The OFF symbol lights up on the operation ON / OFF indication (20).

5. Press the OK button (1) to activate the socket thermostat with the selected timer mode.

    1. The presettings of the selected thermostat mode are displayed and the mode is activated.

    2. If the relay is open and the thermostat controls the terminal device, the thermostat on/off switch (10) will be constantly illuminated in red. Additionally, ON will be illuminated on the operation ON / OFF indication (20).

    3. If the settings do not correspond to the time of activation, the thermostat on/off switch (10) will not flash

even if the timer is activated. Additionally, OFF will flash on the operation ON / OFF indication (20).

4. The socket thermostat is activated with the selected timer mode.

6. If the socket thermostat is activated, press the OK button (1) twice to deactivate it.

Activating and deactivating the socket thermostat without radio transmitter
You can also directly activate or deactivate the socket thermostat without using the radio transmitter. This way, the connected terminal device will be operated without the thermostat function. To do so, please proceed as follows:

1. Press the thermostat on/off switch (10).

    1. The thermostat on/off switch (10) is illuminated in red.

    2. The ON symbol lights up on the operation ON / OFF indication (20).

    3. The connected terminal device can now be used.

2. Press the thermostat on/off switch (10) again to deactivate the socket thermostat.

    1. The thermostat on/off switch (10) is no longer illuminated.

Frost protection function
If the ambient temperature of the radio transmitter drops to 3 °C or below, the radio transmitter will automatically activate a frost protection mode. The radio transmitter switches on and controls the connected socket thermostat to 5 °C or 7 °C. FroS is displayed on the segment display for settings (23).

Controlling several socket thermostats with one radio transmitter only
You can control up to 100 socket thermostats with only one radio transmitter as long as they are within the radio range of the radio transmitter (see Technical data).

Note
Please note that when several socket thermostats are simultaneously controlled by one radio transmitter, all socket thermostats which

- are active at that time
- have previously been connected to this radio transmitter
- are within radio range will adopt the current menu setting of the radio transmitter!

Connect the radio transmitter to each individual socket thermostat as described in the chapter Connecting the radio transmitter and socket thermostat. You can now control the connected socket thermostats.

Maintenance and repair

Battery change
A battery change is required when the radio transmitter battery status indication (18) appears on the display.

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

The display indicates the value LL:
The ambient temperature is below 0 °C. Remove the radio transmitter from the environment.

The display indicates the value HH:
The ambient temperature is above 70 °C. Remove the radio transmitter from the environment.

The radio transmitter battery status indication (18) appears on the display:
The battery voltage is low. Exchange the batteries immediately.

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 waste bin on waste electrical or electronic equipment stipulates that this equipment must not be disposed of with the household waste at the end of its life. 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. In the European Union, batteries and accumulators must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators. Please dispose of batteries and accumulators 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.

Declaration of conformity

We – Trotec GmbH – declare in sole responsibility that the product designated below was developed, constructed and produced in compliance with the requirements of the EU Radio Equipment Directive in the version 2014/53/EU.

- **Product model** / **Product**: BN35 BN35F
- **Product type:** radio thermostat with timer
- **Year of manufacture as of**: 2022

Relevant EU directives:

- 2011/65/EU
- 2012/19/EU
- 2015/863/EU

Applied harmonised standards:

- EN ISO 12100:2010
- EN 300 440 V2.1.1
- **EN 61000-3-2**:2014

Applied national standards and technical specifications:

- Regulation (EC) 1907/2006
- **DIN VDE 0620-1**/**A1**:2017
- **DIN VDE 0620-1**:2016-01
- **DIN VDE 0620-2-1**/**A1**:2017-09
- **DIN VDE 0620-2-1**:2016-01
- **EN 301 489-1 Draft Version 2.2.0:**2017-03
- EN 301 489-3 V2.1.1
- **EN 50663:**2017-10
- **EN 61000-4-2**:2009-03
- **EN 61000-4-3**:2006/A1:2008-02
- **EN 61000-4-3**:2006/A2:2010-07
- **EN 61000-4-3**:2006-05
- **EN 61000-4-5**:2006-11
- **EN 60730-1**:2016-07
- **EN 60730-2-7:**2010-10
- **EN 62321-1:**2013
- **EN 62321-2**:2014
- **EN 62321-3-1**:2014
- **EN 62321-4:**2014
- **EN 62321-4:**2014/A1:2017-11
- **EN 62321-5**:2014
- **EN 62321-6**:2015
- **EN 62321-7-1**:2015
- **EN 62321-7-2**:2017
- **EN 62321-8:**2017
- **EN IEC 60730-2-9**:2019/A1:2019-02
- **EN IEC 60730-2-9**:2019-02
- **ETSI EN 300 440** V2.2.1
- **IEC 60730-1**:2013
- **IEC 60730-1**:2013/AMD1:2015
- **IEC 60730-2-9**:2015 RLV
- **IEC 60730-2-9:2015/AMD1**:2018

Manufacturer and name of the authorised representative of the technical documentation:
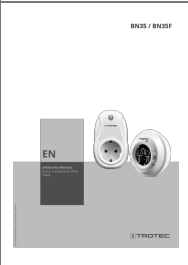Trotec GmbH Grebbener Straße 7, D-52525 Heinsberg

- **Phone**: +49 2452 962-400
- **E-mail**: info@trotec.de

Place and date of issue: Heinsberg, 14.11.2019

Trotec GmbH Grebbener Str. 7 D-52525 Heinsberg

- +49 2452 962-400
- +49 2452 962-200
- **info@trotec.com**
- **www.trotec.com**

Documents / Resources

	TROTEC BN35F Radio Thermostat with Timer [pdf] Instruction Manual BN35, BN35F, BN35F Radio Thermostat with Timer, Radio Thermostat with Timer, Thermostat with Timer