

Product manual

Electronic room temperature controller insert

1098 U-101

1098 UF-101



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1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also pass on this manual along with it.

Busch-Jaeger accepts no liability for any failure to observe the instructions in this manual.

If you require additional information or have questions about the device, please contact Busch-Jaeger or visit our Internet site at:

www.BUSCH-JAEGER.de

2 Safety

The device has been constructed according to the latest valid regulations governing technology and is operationally reliable. It has been tested and left the factory in a technically safe and reliable state.

However, residual hazards remain. Read and adhere to the safety instructions to prevent hazards of this kind.

Busch-Jaeger accepts no liability for any failure to observe the safety instructions.

2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions:



Danger

Risk of death / serious damage to health

- The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.



Warning

Serious damage to health

- The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.



Caution

Damage to health

- The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (reversible) injuries.



Attention

Damage to property

- This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.



NOTE

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.

The following safety symbols are used in the operating manual:



This symbol alerts to electric voltage.

2.2 Intended use

The device is used in closed rooms for the time-controlled regulation of the temperature for heating systems/electric floor heating.

The device is intended for the following:

- Operation according to the listed technical data
- Installation in dry interior rooms
- Only suitable for installation in flush-mounted boxes according to DIN 49073-1, Part 1, or in suitable surface-mounted housings.
- Use with the connecting options available on the device

The intended use also includes adherence to all specifications in this manual.

2.3 Improper use

Each use not listed in Chapter 2.2 “Intended use” on page 6 is deemed improper use and can lead to personal injury and damage to property.

Busch-Jaeger is not liable for damages caused by use deemed contrary to the intended use of the device. The associated risk is borne exclusively by the user/operator.

The device is not intended for the following:

- Unauthorized structural changes
- Repairs
- Outdoor use
- The use in bathroom areas

2.4 Target group / Qualifications of personnel

2.4.1 Operation

No special qualifications are needed to operate the device.

2.4.2 Installation, commissioning and maintenance

Installation, commissioning and maintenance of the device must only be carried out by trained and properly qualified electrical installers.

The electrical installer must have read and understood the manual and follow the instructions provided.

The electrical installer must adhere to the valid national regulations in his/her country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installer must be familiar with and correctly apply the "five safety rules" (DIN VDE 0105, EN 50110):

1. Disconnect
2. Secure against being re-connected
3. Ensure there is no voltage
4. Connect to earth and short-circuit
5. Cover or barricade adjacent live parts

2.5 Safety instructions



Danger - Electric voltage!

Electric voltage! Risk of death and fire due to electric voltage of 100 ... 240 V. Dangerous currents flow through the body when coming into direct or indirect contact with live components. This can result in electric shock, burns or even death.

- Work on the 100 ... 240 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains power supply before installation / disassembly.
- Never use the device with damaged connecting cables.
- Do not open covers firmly bolted to the housing of the device.
- Use the device only in a technically faultless state.
- Do not make changes to or perform repairs on the device, on its components or its accessories.
- Keep the device away from water and wet surroundings.



Caution! - Risk of damaging the device due to external factors!

Moisture and contamination can damage the device.

- Protect the device against humidity, dirt and damage during transport, storage and operation.

3 Information on protection of the environment

3.1 Environment



Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with domestic waste.

- The device contains valuable raw materials which can be recycled.
Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).

4 Setup and function

4.1 Features of function and equipment

4.1.1 Control elements

The following modules are used. The device can only be operated with central cover plate 6435-xxx. The cover plate is latched onto the control element as a so-called "floating rocker".



5 Technical data

Nominal voltage:	230 V AC $\pm 10\%$, 50 Hz		
Nominal power:	1098 U-101	Change-over contact/normally open contact closed while de-energized (connection 1)	10 (4) A
		Change-over contact/normally closed contact open while de-energized (connection 2)	5 (2) A
	1098 UF-101	Change-over contact/normally open contact closed while de-energized (connection 1)	16 (2) A
		Change-over contact/normally closed contact open while de-energized (connection 2)	5 (2) A
Control range:	1098 U-101	5°C - 30°C	
	1098 UF-101	10°C - 50°C	
Opening of change-over contact:		< 3 mm μ	
Power reserve:		Approx. 10 h at 25°C	
Memory locations:		Maximum of 28 switching times	
Shortest switching interval:		5 minutes	
Ambient temperature:		0°C - 30°C	
Protection type:		IP 20	
Regulation		EN 60 730-2-9	
Input:	1098 UF-101	External remote sensor	
Summer/winter time:		Automatic changeover	
Mode of operation (DIN EN 60730-1):		1B	
Degree of contamination (DIN EN 60730-1):		2	
Rated surge voltage (DIN EN 60730-1):		4000 V	

6 Connection, installation / mounting



Danger - Electric voltage!

Risk of death due to electrical voltage of 100 ... 240 V during short-circuit in the low-voltage conduit.

- Low-voltage and 100 ... 240 V conduits must not be installed together in a flush-mounted box!

6.1 Requirements for the electrician



Danger - Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
 1. Disconnect
 2. Secure against being re-connected
 3. Ensure there is no voltage
 4. Connect to earth and short-circuit
 5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

6.2 Mounting/dismantling



Danger - Electric voltage!

Risk of death and fire due to electric voltage of 100 to 240 V.

- Work on the 100 - 240 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains voltage prior to mounting and dismantling.



Caution! The device can sustain damage when coming into contact with hard objects!

The plastic parts of the device are sensitive.

- Pull the attachment off only with your hands.
- Do not lever parts off with screwdrivers or similar hard objects.

In Germany the flush-mounted insert must only be installed in flush-mounted boxes according to DIN 49073-1, Part 1, or suitable surface-mounted housings.

Different installation standards apply in other countries. These are to be taken into account when used in connection with a different support ring and flush-mounted box.

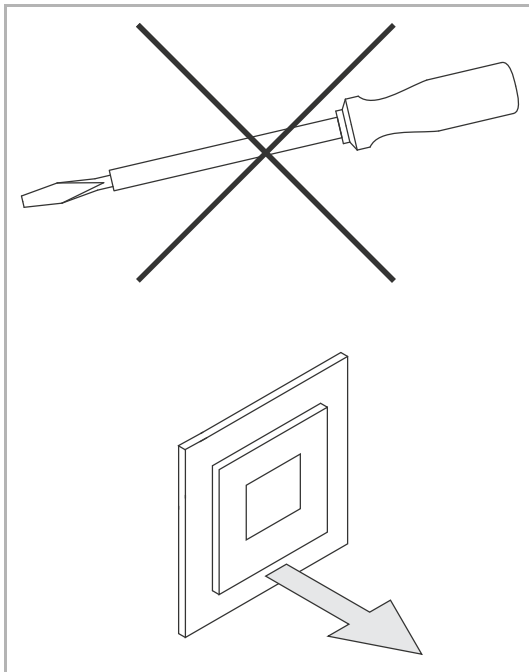


Fig. 1: Wall mounting: pulling off the attachment

1. Pull the attachment off.
 - If the device is already mounted or assembled, pull off the attachment from the flush-mounted insert with the aid of the frame.

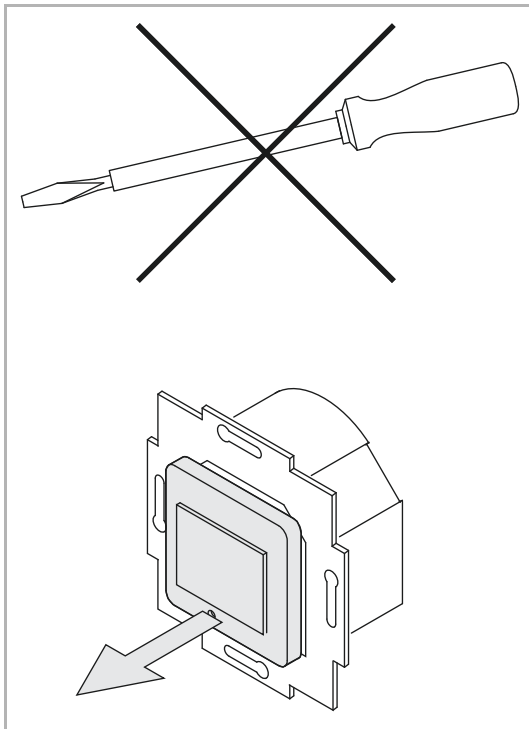


Fig. 2: Device in as-delivered state: pulling off the attachment

- If the device is in its as-delivered state, pull the attachment off the flush-mounted insert with your hands.
- Pull the attachment off only with your hands. Do not lever parts off with screwdrivers or similar hard objects. This will damage the device.
- When pulling off, first the resistance of the plastic clamps must be overcome.

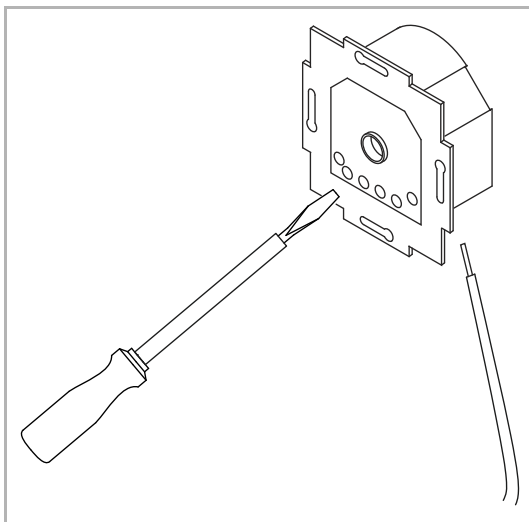


Fig. 3: Connecting the cables

1. Connect the cables to the flush-mounted insert.
 - For the connection assignment, see chapter 6.3 "Electrical connection" on page 15.

6.3 Electrical connection

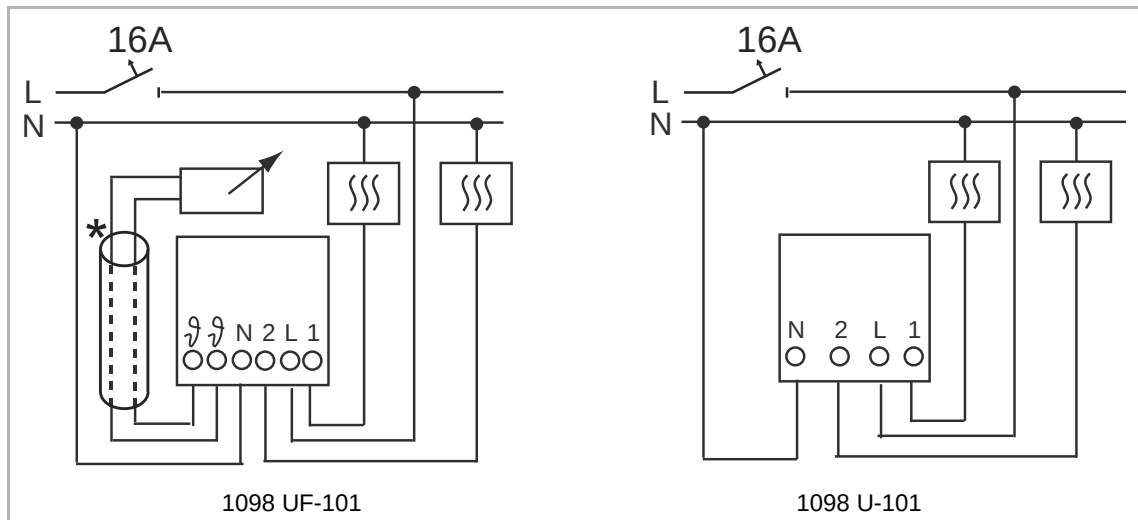


Fig. 4: Circuit diagrams

Terminal designation	Assignment
L	Phase
N	Neutral conductor
1	Output for controlling the heating load
2	Output for controlling the cooling load
∅	Remote sensor connections
*	The sensor cable must be installed in a protective cable duct.

7 Commissioning



Notice

The setup is carried out automatically during initial commissioning or when resetting the settings (RESET).

8 Operation

No special qualifications are needed to operate the device.

8.1 Notes on operation

In the event of a power failure, the internal clock continues to operate for about 10 hours. After this the time and date have to be reprogrammed. All other data remain saved.

The operating element can be removed from the flush-mounting insert for approximately 20 minutes and adjusted separately.

A total of 4 switching times per day can be set:

- 2 x for comfort mode
- 1 x for standby mode
- 1 x for night mode

If the display is on --:--, this can mean the following:

- No time has been set
- The memory is not occupied
- The function is not active

Flashing numbers / values can be changed. If no entry is made, the display switches back to the operating mode after 2 minutes.

8.2 Operating modes

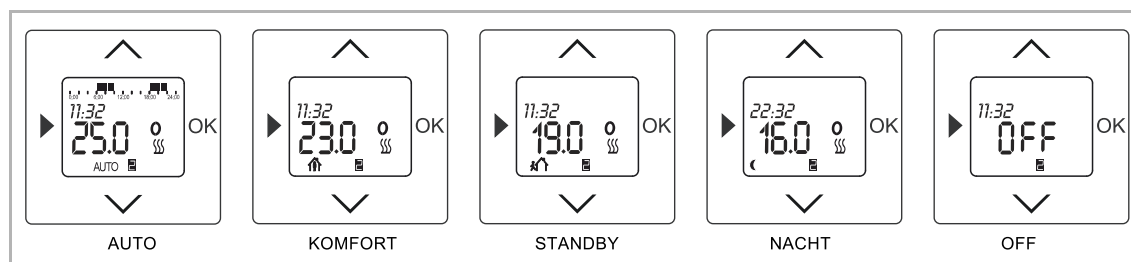


Fig. 5: Display views of operating modes

Icon	Operating mode
AUTO	AUTO At the programmed times, the system is brought to the programmed set values for comfort, stand-by, and night mode. *
	COMFORT MODE Temperature when somebody is present. *
	STANDBY MODE Temperature when nobody is present This function is not automatically activated at the factory. *
	NIGHT MODE Temperature during the night. *
	OFF The control system is switched off. No temperature value is displayed. The display appears when OFF is activated. Manual temperature changes are not possible.
* The temperature can be changed manually at all times.	

- Press the OK button for 2 seconds to change the operating mode.
- All of the temperature values that are displayed are set values.
- Active programs can be recognised by a flashing dot in the temperature display.

8.3 Normal operation

8.3.1 Display

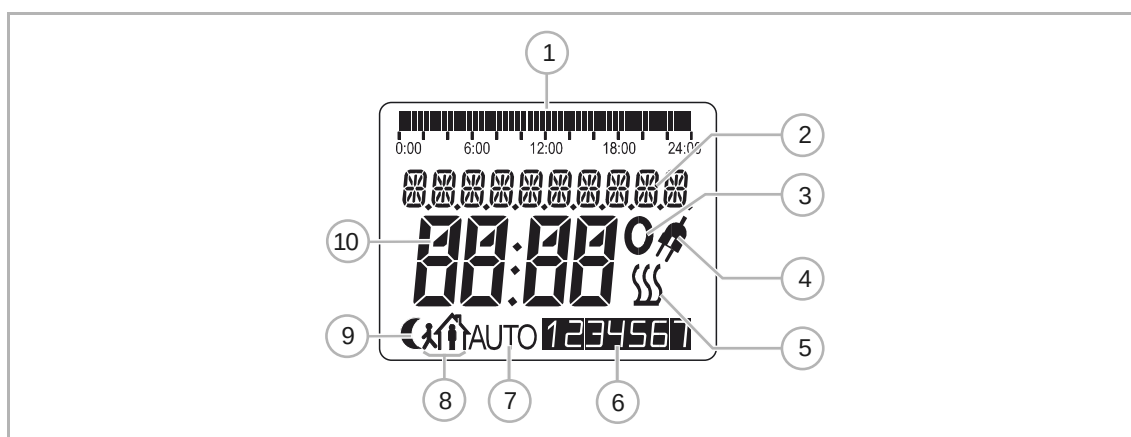


Fig. 6: Icons

No.	Function
1	Display of programmed daily cycles
2	Info line / time / date
3	Icon for °C
4	Mains power failure
5	Status display = heating
6	Current weekday
7	"Automatic" operating mode
8	"Comfort / Standby" operating mode
9	"Night" operating mode
10	Temperature / status



Notice

If the text is too long for the info line, it will run through the info line.

8.3.2 Button assignment

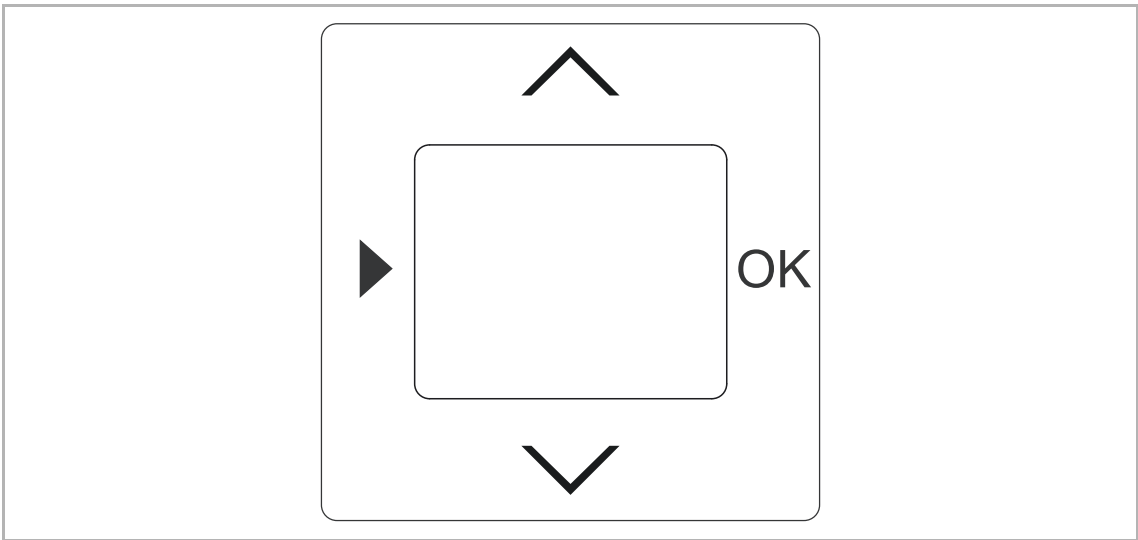


Fig. 7: Button assignment of the cover plate

Button	Function	In setting mode	Adjusting values	RESET
	Calling up menu level and switching to setting mode. – Keep the button pressed for 2 seconds.	Return to operating mode		Press all buttons of the rocker switch simultaneously for approx. 5 seconds. The temperature controller will be reset to the factory settings.
	Raise temperature	Select menu items	Adjust values	
	Lower temperature			
	Confirmation	Select menu	Accept value	



Notice

The set temperature will be adjusted regardless of the time programs. If necessary, the value can be manually adjusted with the UP button (^) or DOWN button (v). This does not affect the values that are set in the time programs.

8.4 Device settings

All settings of the device are carried out supported by text-controlled operator prompting. The language, time and date have to be set first during initial commissioning.



Notice

Values which need to be changed flash and are displayed in grey in the following illustrated examples.

During initial commissioning or re-commissioning after a reset or reset to factory settings, one of the buttons must be pressed for 5 seconds to release the button lock.

The button lock can also be deactivated. See see chapter 8.6.5 “Button lock“ on page 34.

Commissioning must be carried out anew after a reset. After initial commissioning or after a reset, the device briefly displays the version number.

A detailed description of the individual operating steps for programming is contained in the following sub-sections.



Notice

In the event of an incorrect entry, the menu button can be pressed in order to return to the start of the selected menu item or menu level. After a renewed actuation of the menu button, first there is a change to a higher level, up to the display of the operating mode.

8.4.1 Menu tree

Menu	Menu items	Display	Setting (function)
Voice			
	Country		Select country (language setting)
Starting times			
	Block programming	Comfort mode 12345 Night mode Comfort mode 67 Night mode SEP	Setting the starting times for switching the temperature regulation on and off. The same times are taken over for the days from Monday to Friday.
	Day programming	Comfort mode 1 Night mode 1 Comfort mode 2 Night mode SEP :	Setting the starting times for switching the temperature regulation on and off independent from each other for each weekday.
Special functions			
	Max. and min. values	Max. setting value Min. setting value	Setting maximum and minimum temperatures.
	Valve protection	On / Off	Switching the service circuit on or off for automatic opening of the heating valves.
	Standby times	On / Off	Switching the temperature reduction on or off during absence.
	Offset	± 5°C	Setting offset value (correcting value) for temperature adjustment.
	Button lock	On / Off	Switching button lock on or off.
Date/time			
	Day / Month / Year		Set date
	Hours / Minutes		Setting the time
Temperature settings			
	Comfort mode	50.0°C	Change temperature values when necessary.



8.4.2 Language

The language is set via the selection of the country.

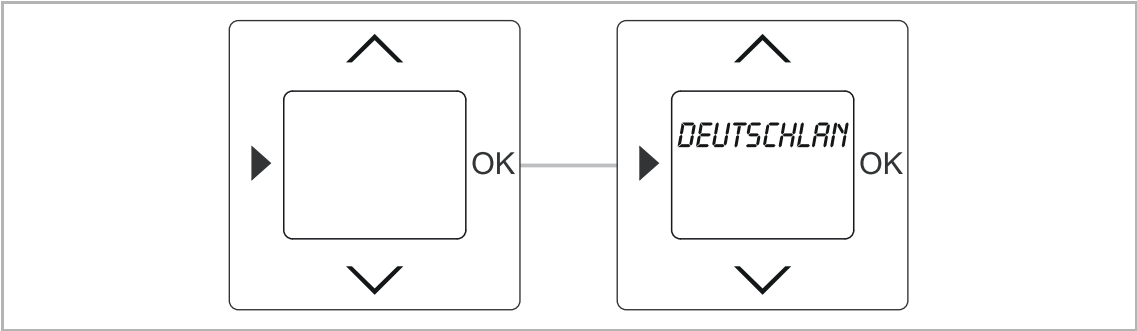


Fig. 8: Country / language selection

Button	Display	Entry / Comments
	Germany	Select language – Select the country via the arrow buttons.
OK		– Confirm your selection with the OK button. You simultaneously switch to the next menu item. This is followed by setting the year, month, day, hour and minute. See Chapter 8.6.6 “Date / Time” on page 35.



Notice

To change the language at a later point in time, see Chapter 8.4.4 “RESET (resetting to the factory settings)” on page 25.

8.4.3 RESET (Resetting the device)

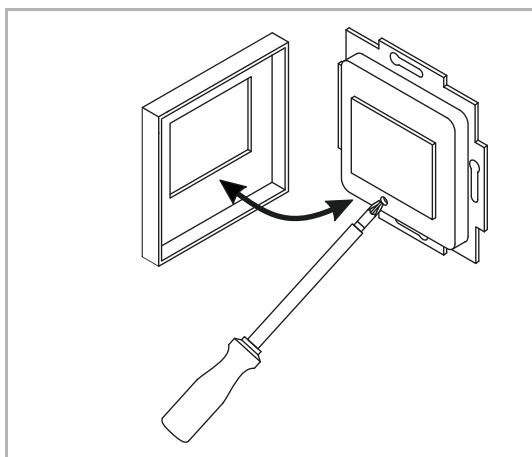


Fig. 9: Reset

1. Remove the cover and press the reset button.
2. Replace the cover.
3. Then, again set the language, the date and the time, see chapter 8.4 "Device settings" on page 21.

8.4.4 RESET (resetting to the factory settings)

- Comfort mode
 - Mon – Fri: 07:00 h 23°C
 - Sat – Sun: 08:00 h 23°C
- Standby mode
 - Mon – Sun: 09:00 h 19°C
 - (Can be selected if required, special functions menu)
- Night mode
 - Mon – Sun: 22:00 h 16°C

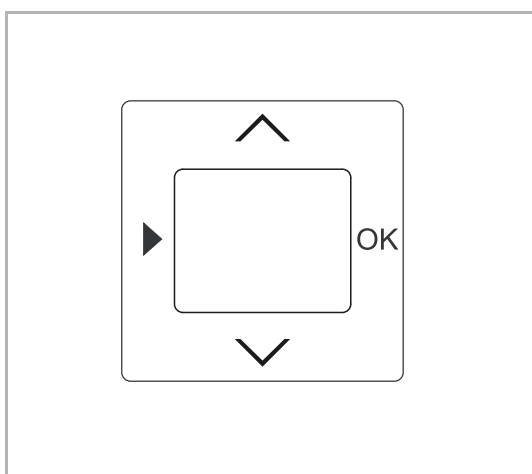


Fig. 10: Factory settings

1. Press all 4 buttons simultaneously, or the entire operating surface for more than 5 seconds. For this the device must be in operating mode. The text "Factory settings" will appear in the display.
2. Confirm the enquiry with the OK button. The device will be reset to the default settings.

8.5 Setting the starting / switching times

8.5.1 General

- STANDBY times can only be set to a point of time that is **later** than the set comfort time.
- Night mode cannot be set after 23:59 h, since the starting time (night) will jump to the comfort time programmed on the same day.
- BLOCK programming
 - So that the switching times need not be entered again for each individual day, the BLOCK programming function is available. This means that the switching times are entered once for block (Mon - Fri) and once more for block (Sat - Sun).
- DAY programming
 - Here the switching times for each day can be set independent from each other.

The settings that are available and how the individual menu items are called up is described in the following sub-sections.

8.5.2 Block programming

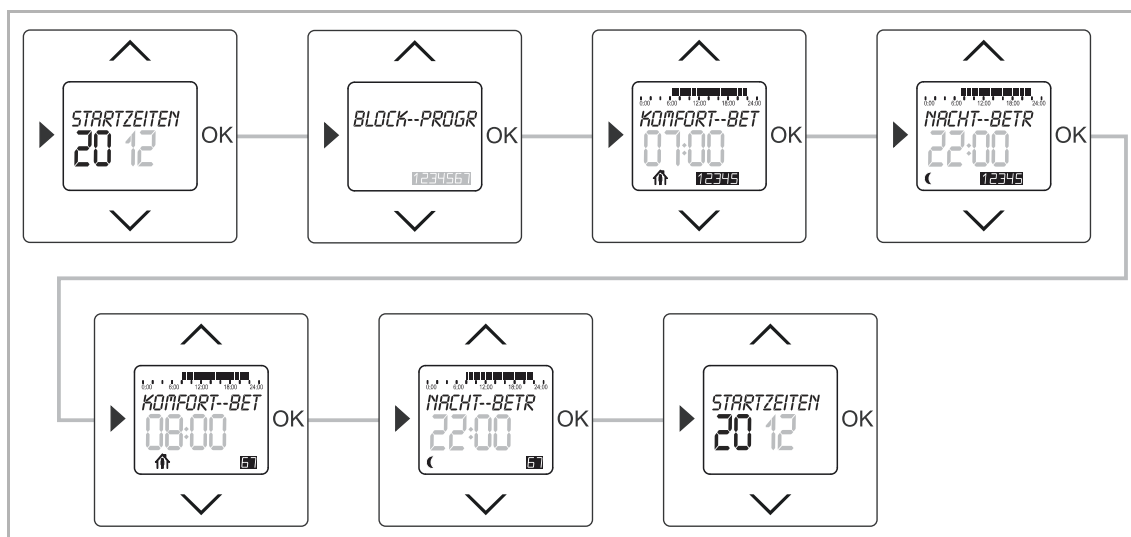


Fig. 11: Menu item – Block

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
OK	BLOCK	– Press the OK button to select menu item "Block programming".
OK	1234567	The weekdays flash. – Press the OK button again.
OK	Comfort mode / 07:00	The preset starting time for "Comfort mode" flashes (Mon - Fri).
	7:30	– Set the desired starting time via the arrow buttons. In this example the starting time has been set at 7:30.
OK	Night mode / 22:00	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Night mode" (Mon - Fri). The preset starting time flashes.
	22:30	– Set the desired starting time via the arrow buttons. In this example the starting time has been set at 22:30.
OK	Comfort mode / 08:00	– Press the OK button again. You simultaneously switch to the next menu item "Comfort mode" (Sat - Sun). The preset starting time flashes.
	8:30	– Set the desired switch-on time via the arrow buttons. In this example the switch-on time has been set at 8:30.
OK	Night mode / 22:00	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Night mode" (Sat - Sun). The preset starting time flashes.
	22:30	– Set the desired switch-off time via the arrow buttons. In this example the starting time has been set at 22:30.
OK	Starting times	– Confirm your entry with the "OK" button. The starting times are now set.

		– Press the menu button to switch to the operating mode.
---	--	--

Table 1: Sequence of operating steps

8.6 Calling up special functions

The settings of the special functions that are available and how the menu items are called up is described here. A detailed description of the individual functions is contained in the following sub-sections.

8.6.1 MAX and MIN values

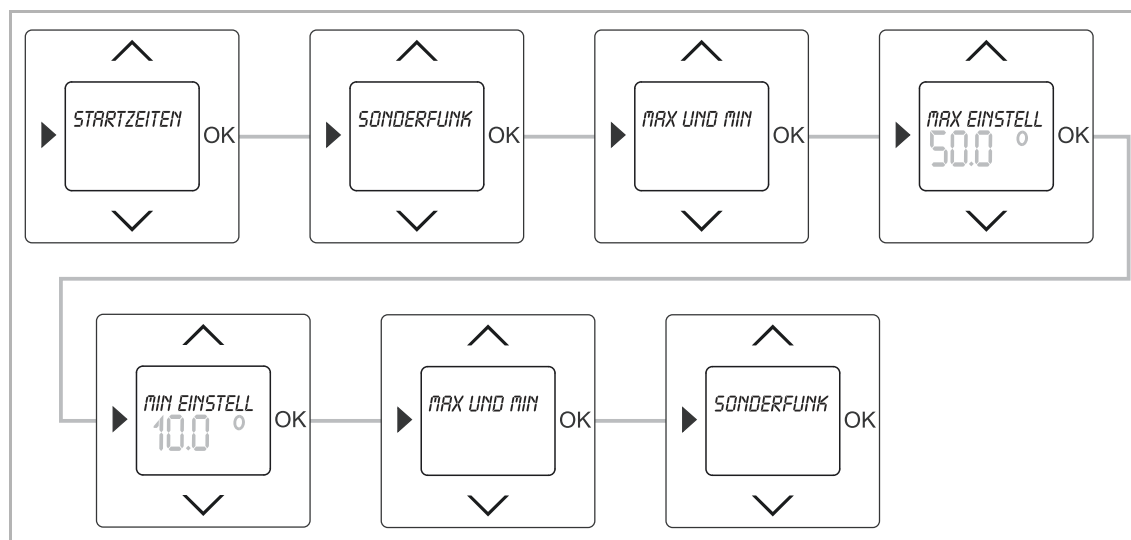


Fig. 12: Menu item – Max and Min values

If required, here the set temperature ranges can be individually limited.

Button	Display	Entry / Comments									
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.									
	Special functions	– Select menu "Special functions" via the arrow buttons.									
OK	Max. and min. values	– Press the OK button to select menu item "Max and Min values".									
OK	Max setting value / 50.0	– Confirm your entry with the "OK" button. Menu item "Max setting value" is called up. The preset maximum temperature of 50°C flashes.									
	45.0°	– Set the desired temperature via the arrow buttons. The values can be set in steps of 0.5°C. The adjustment range depends on the type of the device. <table border="1"> <thead> <tr> <th>Type</th><th>Value</th><th>Adjustment range</th></tr> </thead> <tbody> <tr> <td>1098 U-101</td><td>MIN MAX</td><td>05.0 – 15.0°C 20.0 – 30.0°C</td></tr> <tr> <td>1098 UF-101</td><td>MIN MAX</td><td>10.0 – 25.0°C 35.0 – 50.0°C</td></tr> </tbody> </table> In this example a temperature of 45°C has been set.	Type	Value	Adjustment range	1098 U-101	MIN MAX	05.0 – 15.0°C 20.0 – 30.0°C	1098 UF-101	MIN MAX	10.0 – 25.0°C 35.0 – 50.0°C
Type	Value	Adjustment range									
1098 U-101	MIN MAX	05.0 – 15.0°C 20.0 – 30.0°C									
1098 UF-101	MIN MAX	10.0 – 25.0°C 35.0 – 50.0°C									
OK	Min setting value / 25.0°	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Min setting value".									

		The preset minimum temperature of 10°C flashes.
	20.0°	– Set the desired temperature via the arrow buttons. In this example a temperature of 20°C has been set.
OK	Max and Min values	– Confirm your entry with the "OK" button. The maximum and minimum temperature values have been set.
	Special functions	– Press the menu button to switch to menu level "Special functions".
		– Press the menu button to switch to the operating mode.

Table 2: Sequence of operating steps

8.6.2 Valve protection

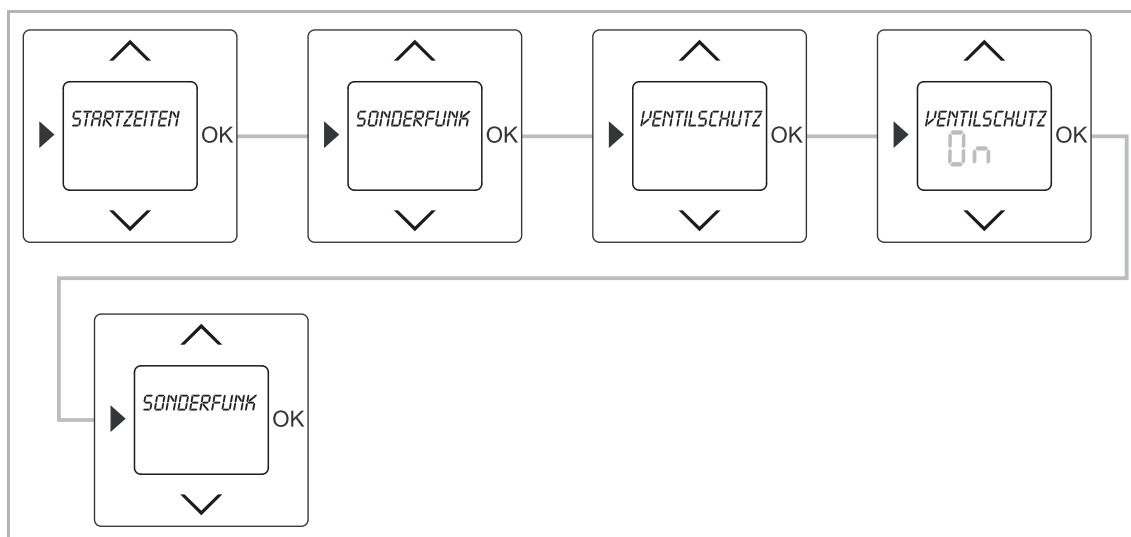


Fig. 13: Menu item – Valve protection

In order to prevent the valve of the heater/circulating pump from getting blocked, it can be programmed to open automatically once a day. When the service circuit is active, the heating valve opens daily at 10:00 for 5 minutes.

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Special functions	– Select menu "Special functions" via the arrow buttons.
OK	Valve protection	– Press the OK button to select menu item "Valve protection". The default setting flashes.
	On / Off	– Set the service circuit to ON or OFF via the arrow buttons.
OK	On	– Confirm your entry with the "OK" button. In the example the setting "On" has been selected.
	Special functions	– Press the menu button to switch to menu level "Special functions".
		– Press the menu button again to switch to the operating mode.

Table 3: Sequence of operating steps

8.6.3 Standby times

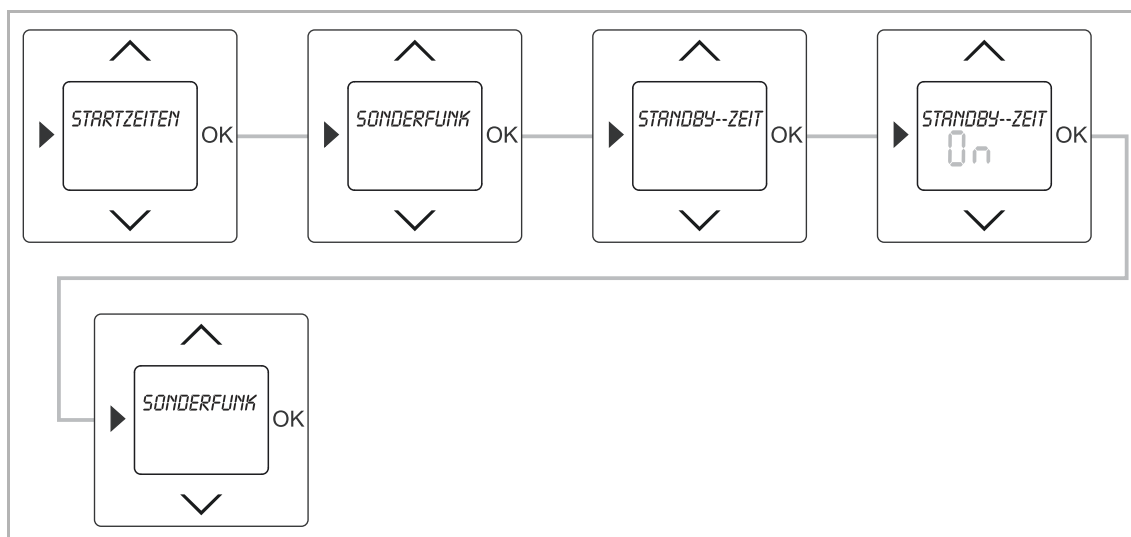


Fig. 14: Menu item – Standby times

Standby mode is not activated at the factory. The activation and adjustment (reduction) of the temperature during absence can be activated or deactivated here.

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Special functions	– Select menu "Special functions" via the arrow buttons.
	Standby	– Press the OK button to select menu item "Standby times". The default setting flashes.
	On / Off	– Set the standby times to ON or OFF via the arrow buttons.
	On	– Confirm your entry with the "OK" button. In the example the setting "On" has been selected.
	Special functions	– Press the menu button to switch to menu level "Special functions".
		– Press the menu button again to switch to the operating mode.

Table 4: Sequence of operating steps

8.6.4 OFFSET

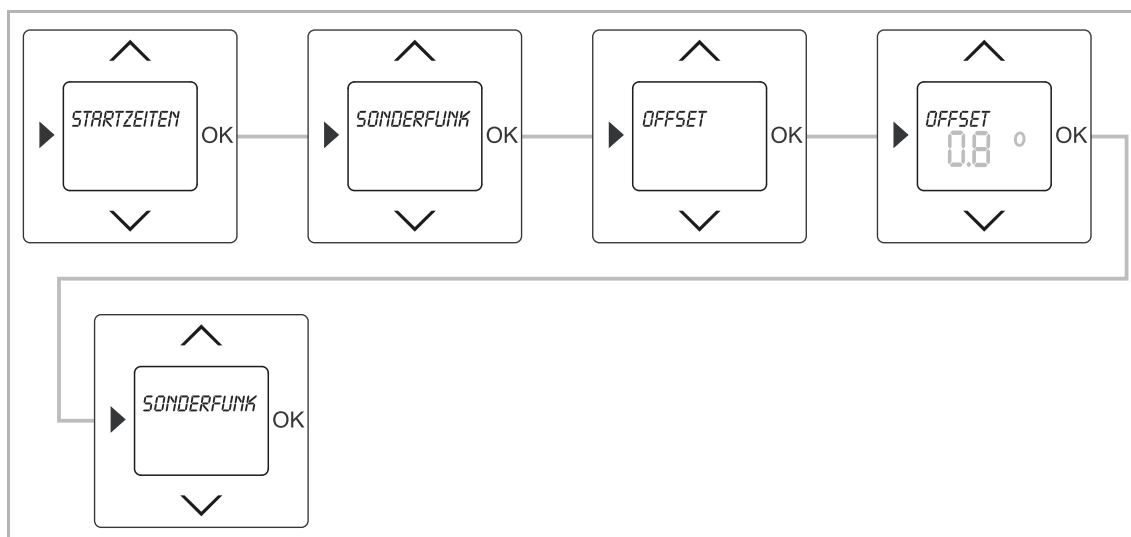


Fig. 15: Menu item OFFSET

If the room temperature set on the device and the temperature measured on-site do not correspond, the temperature can be adjusted via the OFFSET value (correcting value) by up to $\pm 5^{\circ}\text{C}$.

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Special functions	– Select menu "Special functions" via the arrow buttons.
OK	OFFSET	– Press the OK button to select menu item "OFFSET". The preset value flashes.
	0.0°	Adjust the temperature: – Set the temperature variance to the measured temperature on-site via the arrow buttons. – The value can be set in steps of 0.1°C.
OK	0.8°	– Confirm your entry with the "OK" button. In this example an OFFSET value of 0.8°C has been entered.
	Special functions	– Press the menu button to switch to menu level "Special functions".
		– Press the menu button again to switch to the operating mode.

Table 5: Sequence of operating steps

8.6.5 Button lock

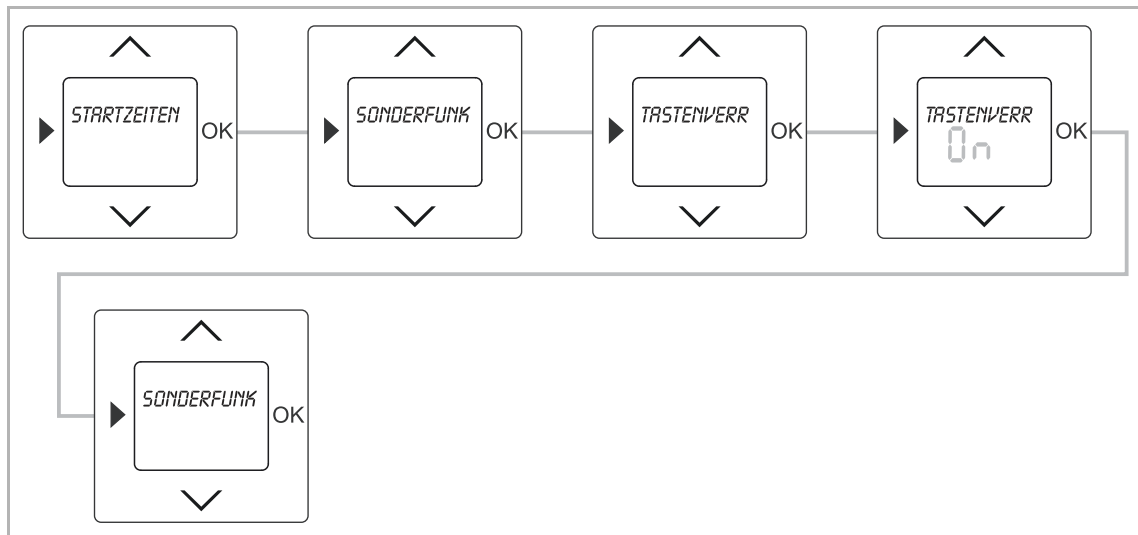


Fig. 16: Menu item - Button lock

To protect the basic settings against being unintentionally changed, the device has a button lock. To release the button lock when it is active, one of the buttons must be pressed for 5 seconds.

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Special functions	– Select menu "Special functions" via the arrow buttons.
	Button lock	– Press the OK button to select menu item "Button lock". The default setting flashes.
	On / Off	– Set the button lock to ON or OFF via the arrow buttons.
	On	– Confirm your entry with the "OK" button. In the example the setting "On" has been selected. The button lock has been activated.
	Special functions	– Press the menu button to switch to menu level "Special functions".
		– Press the menu button again to switch to the operating mode.

Table 6: Sequence of operating steps

8.6.6 Date / Time

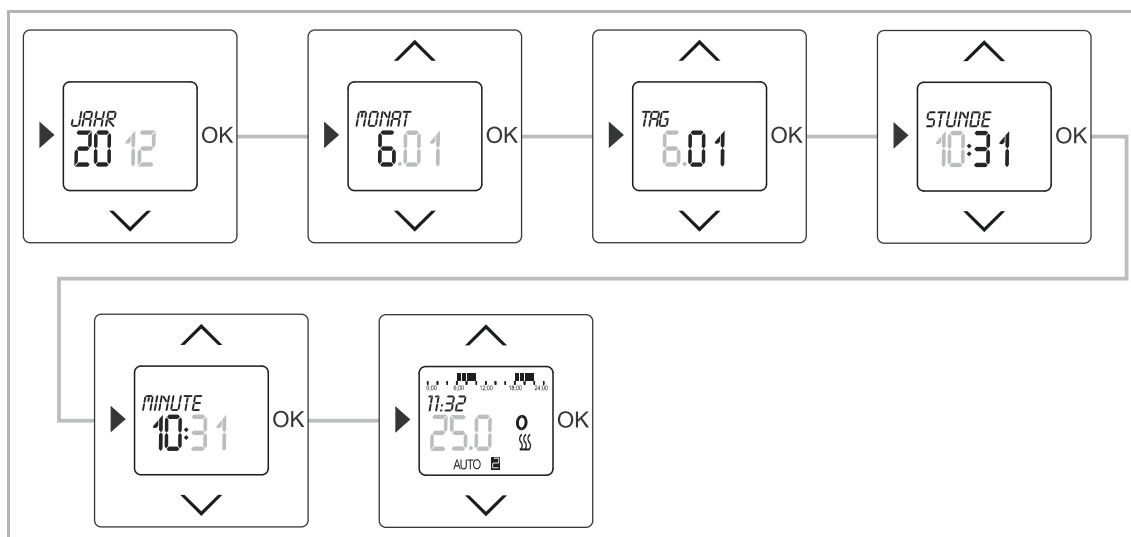


Fig. 17: Date

Button	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Date--Time	– Select menu "Date - Time" via the arrow buttons.
OK	Year / --:--	– Confirm your entry with the "OK" button. <i>During initial commissioning or after a reset to factory settings, and after the selection of the language, menu item "Year" is automatically displayed.</i> The preset year flashes.
	2011	– Set the year via the arrow buttons.
OK	Month / --:--	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Month". The preset month flashes.
	6.01	– Set the month via the arrow buttons.
OK	Day / --:--	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Day". The preset day flashes.
	6.01	– Set the day via the arrow buttons.
OK	Hour / --:--	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Hour". The preset hour flashes.
	10:31	– Set the hour via the arrow buttons.
OK	Minute / --:--	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Minute". The preset minute flashes.
	10:31	– Set the minutes via the arrow keys.
OK		– Confirm your entry with the "OK" button. The temperature controller changes into operating mode

		"AUTO".
--	--	---------

Table 7: Sequence of operating steps

8.6.7 Adjust temperature

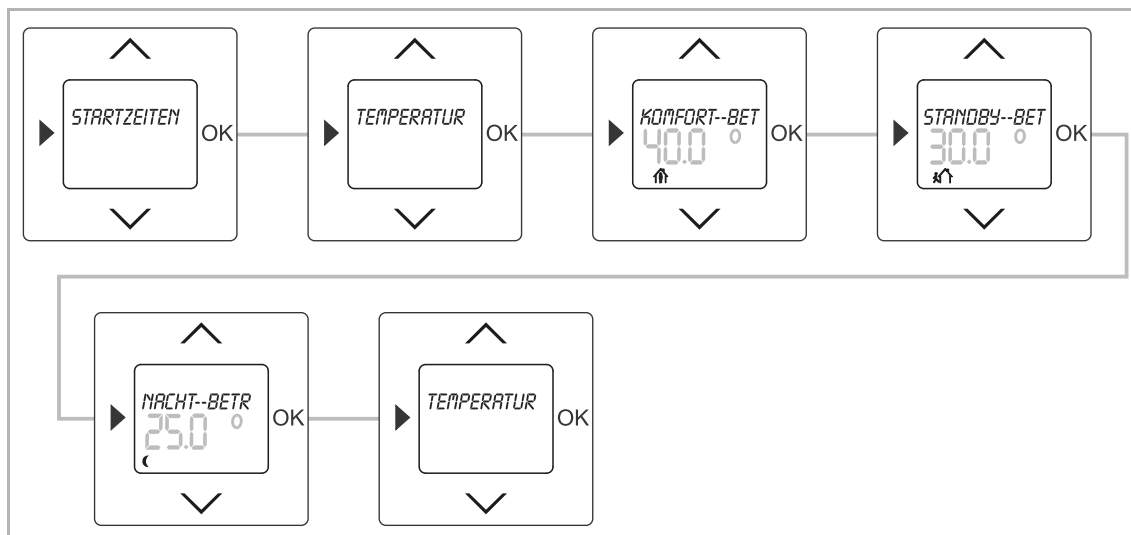


Fig. 18: Menu item – Temperature adjustment

Here, the preset temperature values can be changed manually as required.

Push-buttons	Display	Entry / Comments
	Starting times	– Press the menu button for 2 seconds to switch to the setting mode.
	Temperature settings	– Select menu "Temperature settings" via the arrow buttons.
OK	Temperature settings	– Press the OK button to select menu item "Temperature settings".
OK	Comfort mode / 40.0°	– Confirm your entry with the "OK" button. The preset temperature for "Comfort mode" flashes.
	45.0°	– Set the desired temperature via the arrow buttons. In this example a temperature of 45°C has been set.
OK	Standby mode / 30.0°	<i>Menu item "Standby mode" is displayed only if menu item "Standby times" has been activated first in menu "Special functions".</i> – Confirm your entry with the "OK" button. The preset temperature for "Standby mode" flashes.
	25.0°	– Set the desired temperature via the arrow buttons. In this example a temperature of 25°C has been set.
OK	Night mode / 25.0°	– Confirm your entry with the "OK" button. You simultaneously switch to the next menu item "Night mode". The preset temperature for "Night mode" flashes.
	20.0°	– Set the desired temperature via the arrow buttons. In this example a temperature of 20°C has been set.
OK	Starting times	– Confirm your entry with the "OK" button. The temperature values have been set. Effects in "Auto mode": The changed temperature values remain valid until the next programmed time. The AUTO icon flashes.

		Effects in "Comfort / Standby or Night mode": There is an adjustment to the changed temperature values. The AUTO time program is not executed. The corresponding icons are deactivated.
		– Press the menu button to switch to the operating mode.

Table 8: Sequence of operating steps

8.7 Display during mains power failure

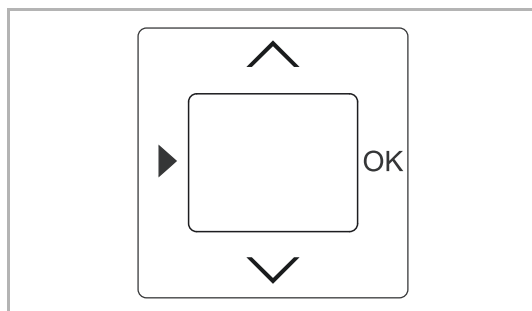


Fig. 19: Display during normal operation

The illustration on the right shows an example of a display with the mains voltage activated.

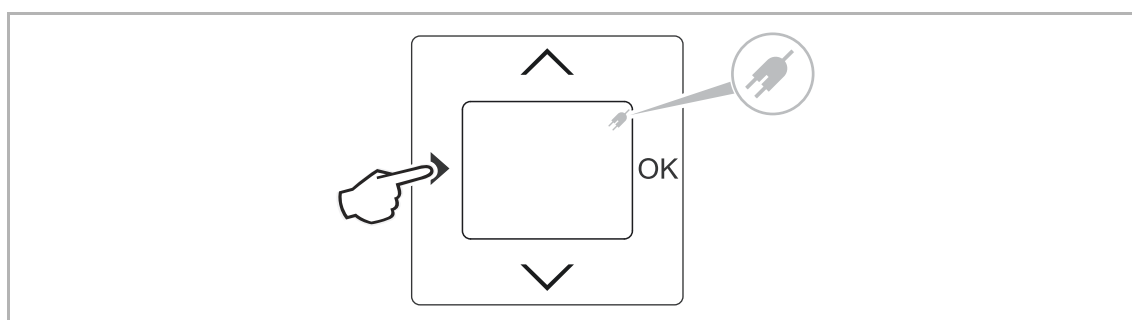


Fig. 20: Display during mains power failure

The illustration above shows the display during a mains voltage failure or the control element unplugged. Prerequisite, however, is that the temperature controller was charged previously for several hours.

The flashing plug symbol (see magnification) shows that the mains voltage supply to the temperature controller is deactivated. The time continues to run in the background, but is not displayed to save energy.

If the temperature controller is again supplied by the mains network within a period of 10 hours, the current time will be shown in the display.

Operation of the unplugged control element

If the control element (the temperature controller) was unplugged for programming, the menu level must first be called up with a long press of the button.

Operation is then carried out as normal.

9 Maintenance

9.1 Cleaning

**Caution! - Risk of damaging the device!**

- When spraying on cleaning agents, these can enter the device through crevices.
 - Do not spray cleaning agents directly onto the device.
- Aggressive cleaning agents can damage the surface of the device.
 - Never use caustic agents, abrasive agents or solvents.

Clean dirty devices with a soft dry cloth.

- If this is insufficient, the cloth can be moistened slightly with a soap solution.

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