Thermostat NO contact with centre plate, time-controlled

Safety instructions

Electrical equipment must only be installed and assembled by qualified electricians. Always follow the relevant accident prevention regulations.

The device is compliant with the guidelines of the EN 60730 and works according to the mode of operation 1C.

Failure to comply with these instructions may result in damage to the device, fire or other hazards

These operating instructions are an integral component of the product, and must be retained by the end user.

Design and layout of the device



Figure 1: Device overview

- (1) Display
- (2) Operating keys
- (3) Operating unit
- (4) Plug-in contacts for insertion
- (5) Frame (not included in delivery)
- (6) Socket for plug-in contacts
- (7) Insert

Function

The time-controlled thermostat allows the room temperature to be controlled in automatic mode depending on the time and weekday (program) so that the heating requirements can be adjusted according to individual lifestyles. The automatically controlled temperature can also be adjusted manually as required.

The device is controlled by the measured value of the internal sensor. When the temperature falls below the programmed value, the room is heated. in addition, an external sensor can be connected for measuring the floor/room temperature.

The thermostat process can be adjusted according to the heating type:

- Room thermostat The heater is switched on if the room temperature falls below the preset default value.
- Floor thermostat The floor temperature is controlled. The heating is switched on if the room temperature (measured by the external thermostat) falls below the default value
- Room thermostat with limiter The room temperature is controlled, the floor temperature (measured by the external temperature sensor) is limited independent of this. The heater is switched on when the room temperature falls below the preset default value.

Operation

Operator control concept



Figure 2: Overview of the operating elements and basic display

- (8) Push-button Menu/←
- (9) Push-button -
- (10) Push-button +
- (11) Push-button Info/OK
- (12) Current time/display of help texts
- (13) Display of heating mode
- (14) Display of day of the week
- (15) Display of room temperature
- (16) Display of function/settings

Operating thermostat

You can navigate through the menu using the four push-buttons below the display. In the menu the functions can be set and activated and settings can be adjusted.

- **i** The operation can also be carried out when the operating unit is removed.
- i If no push-button is actuated for longer than 3 minutes the device returns automatically to the previous function and basic display.
- In the basic display, press the Info/OK (11) push-button.

Information on the current operating mode/ function is displayed as scrolled text. The device returns to the basic display by re-pressing Info/OK

■ Press Menu/ (8) push-button.

The basic display disappears. MENU appears briefly in the function display (16). A help text on the current selection is shown at the bottom of the display (12) as scrolled text. The menu can be selected.

- i The device returns to the last display/setting in the menus by pressing Menu/-. The device returns again to the basic display by pressing Menu/ repeatedly.
- Press +/- (9/10) push-button.

Operating modes/functions and settings menus are changed. A description appears below in the display

Press Info/OK (11) push-button.

Function selection: The current function selection is confirmed. Carry out any necessary settings using the +/- (9/10) push-button if required and press Info/OK (11) to confirm.

Settinas:

The selection of the settings menus is confirmed. Carry out further settings with the +/-(9/10) push-button and press Info/OK (11) to confirm

- Once all settings have been completed, the device returns to the basic display. The selected function appears in the display (16).
- In the settings menus identifiers of the function also appear as scrolled text in the display (15) in addition to the adjustable function.

Adjusting setpoint temperature manually

The setpoint temperature can always be adjusted in the AUTO and MAN operating modes. The device is in the basic display.

- Press +/- (9/10) push-button
- The current setpoint temperature flashes.
- Keep pressing the +/- push-button repeatedly until the desired temperature is displayed.
- Press the OK (11) push-button to save the displayed temperature.
- The device returns to the basic display.
- i The readout AUTO- indicates that the manually adjusted setpoint temperature deviates from the temperature stored in the time temperature program. The temperature is controlled according to the changed setpoint temperature until the next event.

Switch off controller

The device is in the basic display.

■ Keep the Menu/← push-button (8) pressed for 10 s.

The display first returns to the menu. The device returns to the basic display after 10 s. The function display (16) indicates OFF.

i The controller is switched on again by selecting an operating mode/function.

Selecting and changing programs

The control provides three preset time temperature programs

Program 1

22	 	_	-		-	-	-	-	
21	 	-				 	 	 _	
20	:	-		L					
19	+	-		L					L
18									
17		_							
16	 Mon – Fr	i 🔔							
15	 Sat – Sur	1							L
14									

6:00 h 8:00 h 10:00 h 12:00 h 14:00 h 16:00 h 18:00 h 20:00 h 22:00 ł

Figure 3: Time temperature diagram (day profile) for program 1

Program with six events and temperature setback to 18 °C in the morning and afternoon of working days (absence). At the weekend temperature setback in the morning and night setback.

	Mon – Fri		Sat – Sun	
Event	Ð	l °C	B	l °C
1	6:00	21.0	7:00	21.0
2	8:30	18.0	10:00	18.0
3	12:00	21.0	12:00	21.0
4	14:00	18.0	14:00	21.0
5	17:00	21.0	17:00	21.0
6	22:00	15.0	Sat: 23:00 Sun: 22:00	15.0

Program 2

22				+ +		-
21		•••••			 	
20						_
19						
18						
			ΤI			
16	_	Mon – Fri				
10 1		Sat - Sun				

Figure 4: Time temperature diagram (day profile) for program 2

On weekdays like program 1. At the weekend an event for comfort temperature during the whole day and night setback.

	Mon - F	ri	Sat - Sun		
Event	Ð	l °C	B	l °C	
1	6:00	21.0	7:00	21.0	
2	8:30	18.0			
3	12:00	21.0			
4	14:00	18.0			
5	17:00	21.0			
6	22:00	15.0	Sat: 23:00 Sun: 22:00	15.0	

Program 3

°C	I		1		1	1	1		
22 -									
20 -			Ŧ.						FF.
19 -			-	:					+
18 -									
16 -			Mon – Fr	ri					1
15	¦…;		Sat – Su	n					-
14 -	6:00 h	8:00 h	10:00 h	12:00 h	14:00 h	16:00 h	18:00 h	20:00 h	22:00

Figure 5: Time temperature diagram (day profile) for program 3

Program with four events and temperature setback to 18°C during the day (absence). At the weekend temperature setback in the morning and night setback

	Mon - Fi	ri	Sat - Sun			
Event	Ð	l °C	®	l °C		
1	6:00	21.0	7:00	21.0		
2	8:30	18.0	10:00	18.0		
4	17:00	21.0	17:00	21.0		
5	22:00	15.0	Sat: 23:00 Sun: 22:00	15.0		

Selecting program (G 1)

In the standard delivery, program 1 is active.

- The device is in the basic display.
- Press Menu/ (8) push-button. A help text is shown at the bottom of the display (12)
- Select the settings menu USER SETTING with push-button +/- (9/10) and press OK to confirm (see operating thermostat).
- G 1 PROGRAM SELECT ONE is displayed.
- Press OK.

The number of the active program flashes.

■ Using +/- select the desired program (1 ... 3) and press OK to confirm

G 1 and the scrolled text PROGRAM SELECT is displayed once again. The selected program is active.

Adjust program (G 2)

The preset programs can be adjusted to personal requirements. A maximum of 9 events per day are possible.

- i Adjustments affect the selected program. Adjustments are not saved if the program is changed. The adjustments of the standard program must be carried out once again.
- **i** The program returns to the previous setting level by pressing the Menu/← push-button. Further adjustments can be carried out there if required

The device is in the basic display.

■ Press Menu/ + (8) push-button. A help text is shown at the bottom of the display (12).

Press OK.

flashes.

val flashes.

weekday.

similarly if necessary.

The settings are saved.

Selecting function

play (12).

The device is in the basic display.

■ Press Menu/ + (8) push-button.

or Settings menu) is displayed.

Press OK (11) push-button

MAN operating modes.

Setting default values

flashes in the display.

Value flashes.

set flashes.

Function

tion is executed.

A help text is shown at the bottom of the dis-

peatedly until the desired menu item (Function

The function is activated in the AUTO and

In the remaining operating modes/functions,

Default settings need to be set for some functions

e.g. times/temperatures. The value to be set then

Set the default value using the +/- push-but-

i When all values have been set, the display

returns again to the basic display. The func-

Description

The new value is saved, the next value to be

ton and press OK to confirm.

the device returns to further settings (see Ta-

ble 1: Overview of the functions and operation).

Keep pressing the +/- (9/10) push-button re-

Select the settings menu USER SETTING with push-button +/- (9/10) and press OK to

confirm (see operating thermostat). G1 - PROGRAM SELECT ONE is displayed.

Keep pressing the +/- push-button repeatedly until G2 - EVENT SETTING is displayed.

DAY is displayed, the weekday display (14)

- i Besides individual weekdays, events can also be set for day blocks 1-5, 6-7, 1-7. 1 corresponds to Monday ... 7 Sunday.
- Select the desired day using the +/- pushbutton and press OK to confirm
- The temperature display (15) flashes for the first switching interval of the day.
- Set the desired temperature using the +/push-button and press **OK** to confirm.
- The start time of the switching interval flashes. Set the desired start time using the +/- push-
- button and press OK to confirm. The end time of the switching interval flashes.
- Set the end time using the +/- push-button
- and press OK to confirm. The temperature for the next switching inter-
- i 9 events per day are possible. The number of the switching interval is displayed before the events. The respective end time in the display is saved as the start time of the next interval. If ->>> flashes in the display, then the following event is on the next weekday. If **OK** is pressed, the display for the start time changes to the start time of next weekday. If +/- is pressed, a further switching interval is created. If all 9 events of a day have been used. the program moves automatically to the next
- **i** Further temperatures and events can be set
- Press Menu/← repeatedly to exit the menu item G2 - EVENT SETTING.

User settings (Table 2)

The behaviour of the controller is set in the settinas menu User settinas. The settinas menu is accessed via the menu (see Select function). A scrolled text at the bottom of the display makes the selection easier.

Invoking settings menu

The display shows G1 - PROGRAM SELECT ONE

- Select the desired menu using +/-.
- A menu identification and help text are shown at the bottom of the display (12).
- Press OK.
- The first adjustable value flashes in the display
- Adjust the desired value using +/-.
- Press OK.
- The next adjustable value flashes in the dis-
- i Once all values have been adjusted, the display returns to the subordinate level.

Operation and installation instructions



Thermostat NO contact with centre plate, time-controlled

Order no.: 2044 .

(GB)

Berker GmbH & Co KG Klagebach 38 58579 Schalksmühle/Germany Tel: +49 (0) 23 55/90 5-0 Fax: +49 (0) 23 55/90 5-111 www.berker.com

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	Operation
	Display
AUTO	Control the room temperature according to time and temperature parameters of the selected program
	Activation: OK
	Adjust the temperature until the next event: +/- in the basic display
	Display of function (16): AUTO
MAN	Time-independent control of the room temperature according to the value set here
	Activation: OK
	Set temperature: +/- in the basic display
	Display of function (16): MAN
TIMER	Specifying a room temperature for a set number of hours
	Set hours: +/- Activation: OK
	Display of function (16): TIMER
	Display of time (12): \mathbf{xh} (x = number of remaining hours)
HOLIDAY	Specifying a room temperature for a set time period with start and end date of the holiday
	The AUTO function is active until the start of the holiday. Alternatively, the
	the start date is reached
	Set Year, Month, Day, Temperature: +/–, confirm each setting by pressing
	Activation by confirming the temperature setting: OK
	Display of function (16): II
	Display of time (12): End date of the holiday in the format DD-MM-YY
AT HOME	Temperature control independent of the weekday according to time and tem-
	perature parameters of the set program (day profile).
	The presettings of the program correspond to the current day program of Monday.
	Set temperature and events: +/-, confirm each setting by pressing OK
	Display of function (16): HOME
	Invoke a settings many for user settings (see Liser settings)
USER SETTING	
	Display of room tomporature (15) shows the many identification beginning
	with G
	Scrolled text at the bottom of the display with information about the current
	settings menu
INSTALLER	Invoking a settings menu for the electrician
SETTINGS	Invoke: OK (see Information for Electricians – Commissioning)
	Display of room temperature (15) shows the menu identification - beginning
	with H.
	Scrolled text at the bottom of the display with information on the current

Table 1: Overview of the functions and operation

settings menu

Setting	Description Operation
G1 SELECT PROGRAM	Selection of the preset time temperature programs (see Select program) Factory setting: 1 - Program 1 Select programm 1, 2 or 3: +/-
G2 EVENT SETTING	Adjusting a preset time temperature program Set weekday, temperature, event: +/–, press OK to confirm (see Adjusting program)
G3 CLOCK SETTING	Setting the date and time Set YEAR, MONTH, DAY, HOUR, MINUTE: +/-, press OK to confirm
G4 OFF HEATING PERMANENT	Switch off the controller, no temperature, frost protection is active, if set by the electrician. Select: YES/NO - heating off/on: +/–, press OK to confirm Display of function (16): OFF Switch on controller again: Select any function via the menu or keep Menu/← pressed down for 10 s
G5 SUMMER/WINTER TIME CHANGE	Select whether or not the summer/winter time change should be carried out automatically. Factory setting: YES -Switchover on Select: YES/NO: +/-, press OK to confirm
G6 KEY LOCK	Protection of the controller against unauthorized operation If the key lock is active, no operation is possible Select: YES (key lock)/NO: +/-, press OK to confirm Cancel key lock again: Press any push-button, when CODE is displayed set 93 using +/- and press OK to confirm
G7 TEMP LIMIT MIN/MAX TEMP	Set parameter of the lower and upper temperature for the controller Factory setting: LOWER TEMP LIMIT = 5 °C, UPPER TEMP LIMIT = 30 °C Set temperatures: +/-, press OK to confirm
G8 COST/HR OF ENERGY	 Enter the estimated energy costs per hour for the room being controlled. The calculated consumption is displayed under G9. If the energy costs counter should be used as operating hours counter, set value COSTS/h to 100. Factory setting: 10 Set COSTS/h: +/- press OK to confirm
G9 ENERGY-CONSUM- TION TO DATE	Display of the approximate calculated energy consumption/operating hours for 2 DAYS – WEEK – 30 DAYS – YEAR . The current day until the display time is taken into account. Calculation: Duty cycle of the heating x COSTS/h Select time period for calculating the energy consumption: +/– Return to the menu: OK Resetting using INSTALLER SETTINGS H9
G10 SET TEMP TO READ	Setting whether the setpoint temperature should be displayed in the basic dis- play instead of the current room temperature Work setting: NO – room temperature display
G11 ADJUST TEMP	 Determining the correction value by which the measured temperature should be corrected for display and controller Sensible adjustments: e.g. alignment with calibrated thermometers, compensation of installation heights and installation locations that are not optimum Factory setting: 0.0 - no correction Adjust correction value: +/-, press OK to confirm
G12 NUMBER FOR FLOOR TEMPE- RATURE	Only when using as floor temperature controller! Activating the display of the floor temperature as information number The display °C is hidden Factory setting: NO (normal temperature display) Select: YES/NO: +/– , press OK to confirm
G13 BACKLIGHT	Adjusting the display lighting: SHORT = on for a short time after pressing push-button, OFF = permanently off Factory setting: SHORT Set lighting behaviour: +/–, press OK to confirm
G14 LANGUAGE	Selection of the language for the display text in the display: DEUTSCH, ENGLISH, NEDERLANDS, FRANCAIS Select language: +/–, press OK to confirm
G15 INFO	Display of the controller type and controller version Return to menu: OK
G16 RESET USER SETTINGS ONLY	Resetting the user settings to factory settings The counter ENERGY-CONSUMTION TO DATE is not reset. The settings are reset via menu H9. Select: YES (Reset)/NO: +/-, press OK to confirm
	Table 2. Overview of the user settings and their selection

Information for electricians

Assembly and electrical connection

∧ DANGER!

- $\underline{/!}$ Touching live parts can result in an electric shock.
 - An electric shock can lead to death.

Disconnect connecting cables before working on the device and cover all live parts in the area!

Installation location

To enable optimum room temperature control using the internal sensor, the installation location selected should

- allow free air circulation
- not be located behind curtains, cupboards, shelves etc.
- not be exposed to direct sun light
- be free of draughts
- not be on external walls
- be approx. 1.5 m above the floor

Connecting and mounting the device



Figure 6: Connection diagram

- Remove operating unit from the insert.
- Strip a max of 8 mm from connecting cables.
- Connect controller according to connection diagram (Figure 6).
- Connect an external temperature sensor if necessary (see connecting external temperature sensor).



Figure 7: Mounting

- Align insert (7) in the connector socket and fix it into position with fastening screws (20). Mount the insert in such a way that the plastic tongue (19) acts as insulation for the fastening screw. (Figure 7)
- Mount the design frame (5) and fix it into position by attaching the operating unit (3).

Connecting external temperature sensor

An external temperature sensor is required for the thermostat process of the floor thermostat and thermostat with limiter. It is advisable to lay the temperature sensor in a protective pipe so that it can be replaced later.

- **i** The wire of the temperature sensor supplies mains voltage and can be extended to 50 m using suitable wires.
- **i** To avoid signal disturbances, do not lay the wire of the temperature sensor together with mains cables.
- Strip a maximum of 8 mm from the temperature sensor wire
- Connect temperature sensor according to connection diagram (Figure 6, 18).



Figure 8: Terminal for connecting the temperature sensor

i When using flexible wire, insert and remove the wire release button (21) with an appropriate tool.

Commissioning

CAUTION! <u>∠!</u> Malfunction of the heating system with incorrect controller settings.

- The heating system could get damaged.
- Only allow settings of the heating system to be carried out by a skilled specialist.

Setting the heating type

When commissioning the controller, the heating type must be set.

The device is in the basic display.

- Press Menu/ + (8) push-button. A help text is shown at the bottom of the
- display Keep pressing the +/- push-button repeatedly until **INSTALLER SETTINGS** is displayed.

Press OK.

CODE is displayed and the code number **0** flashes.

- Select: code number using 7 +/- and press OK to confirm
- H 1 and the scrolled text of APPLICATION is displayed.
- Press OK.
- Set the desired temperature using +/- and press OK to confirm.
- **i ROOM** is preset. When changing the heating type, all user and installer settings are reset to the factory settings.

Overview and selection of the settings

The settings menu is invoked (see Setting heating type). If H1 and the scrolled text of APPLICA-**TION** is displayed, you can toggle between the possible settings menus using +/- (see Table 3).

	w
	te
H2	Se
CONTROL MODE	-
	-
	l
	to
H3	O
MIN/MAX FLOOR-	Se
	-
	-
	Se
	1
Н4	SI
HEATING OR	C
COOLING	M
	In -
	-
	-
H5	Dr Dr
VALVE PROTECTION	Tr
	Fa
H6	Se
FROST PROTECTION	W
	fa
	Se
	i
	-
H7 OPTIMUM START	Tr st
	Fa
	Se
H8 VALVES NORMALLY	Sv
OPEN	Fa
	Se
H9 ENERGY COUNTER	Re
RESET	36
H10	0
DISPLAY FLOOR	Di
H11	Re
RESET ALL	fa
	Se

Setting

APPLICATION

escription	
peration	
electing between the thermostat processes according to heating type: ROOM = Room thermostat FLOOR = Floor thermostat	
LIMITER = Room thermostat with limiter actory settings: ROOM	
/hen used as a room thermostat, it is also possible to set whether an externa emperature sensor (EXTERNAL SENSOR = YES) is connected.	al
election of the heating type: +/-, press OK to confirm	
election of the control type:	
PWM (Pulse width modulation) with adjustment option for cycle time. Selections short cycle time for fast heating systems and long cycle time for slow heating systems.	ct -
Factory setting of cycle time: 10 min The minimum switch on/off time is 10 % of the cycle time.	
ON/OFF (on-off control) with the setting option of hysteresis and minimum switch on/off time of the relay Factory setting hysteresis: OFF Factory setting minimum switch on/off time: 10 min	
If no hysteresis is set, the relay switches with the set minimum switch on/o time even in the case of very small temperature differences.	off
election of controller, cycle time, hysteresis, switch on/off time: +/-, press Ol o confirm	K
nry wnen using as room thermostat with limiter. etting the minimum and maximum floor temperature for the limit:	
LOWER LIMIT OF FLOOR TEMPERATURE: The floor does not become	
colder than the temperature set here. Factory settings: OFF (no limit)	
UPPER LIMIT OF FLOOR TEMPERATURE: The floor does not become	
colder than the temperature set here. Factory setting: 35 °C	
et temperatures: +/-, press UK to confirm	
The lower temperature limit < 10 °C or the upper temperature limit > 40 °C must be set using +/– in order to deactivate the upper or lower limit with OFF. OFF is displayed.	,
ooling mode only when using as room thermostat and H2 - CONTROL IODE = ON/OFF	
Using the events and temperature of the heating mode H6 FROST PROTECTION = OFF H7 OPTIMUM START = NO	
election of cooling/heating: +/–, press OK to confirm	
rotection of the valve against sticking after a longer absence of control he valve is opened daily at 10:00 for the time set here in minutes. actory setting: 3 min	
et opening time: +/-, press OK to confirm	
etting the frost protection mode and temperature /hen frost protection is activated, the heating is activated if the temperature ills below the set frost protection temperature actory setting: 5 ° C	
Frost protection mode only possible when controller is switched off. et temperature: +/-, press OK to confirm	
To deactivate the frost protection with OFF , set the temperature < 5 °C by pressing the push-button – . OFF is displayed.	
his setting causes the set setpoint temperature to be reached already at the art time. AUTO_ is displayed in the required pre-heating time.	
et YES (OPTIMUM START)/NO: +/-, press OK to confirm	
witchover of the relay switching behaviour opened for using actuators	
actory setting: NO (deactivated)	
esetting the energy costs counter set under G8/G9 to 0	
elect YES (reset): +/-, press OK to confirm	
nly when using as room thermostat with limiter isplay of the current floor temperature for service purposes -	
esetting all installer and user settings carried out in the settings menu to the actory settings	
elect YES (reset): +/-, Press OK to confirm	

Table 3: Overview of the installer settings and their selection

isplaying device errors

rrors in the hardware configuration can be hown via the display. In this case, ERR and an dditional error type are displayed as scrolled

Error type	Description
	Measures for removal
err Configura- Tion	Operating unit and insert do not match - Only use related compon- ents - Switch off voltage and gwitch on again
	Switch on ayalli
ERR Communi- Cation	Communication between operating unit and insert interrupted - Remove operating unit and attach once again - Switch off voltage and
	switch on again
ERR EXT SENSOR	Failure/short circuit of the external temperature sensor - Replace temperature sensor
	Display range exceeded/fallen short of
	1

vibneda

nonifications

specifications	
Dperating voltage	AC 230 V~
Rated frequency	50 Hz
Dutput	relay NO contact, potential-linked
witching current	10 mA 10 (4)A, 230 V~
Power consumption	approx. 1.2 W
Protection class	IP30
Protection Class	II
Operating temperature	0 40 °C (without condensation)
storage temperature	-20 70 °C (without condensation)
emperature-adjustment ange	in 0.5 °C increments
Room thermostat with limiter)	5 30 °C
loor thermostat	10 40 °C
emperature display	in 0.1 °C increments
Output signal	Pulse width modulation (PWM) or on-off control (On/Off)
WM cycle time	adjustable
lysteresis	adjustable (with on-off control)
linimum event	10 min
ime deviation	< 4 min per year
Power reserve by means f lithium battery	approx. 10 years
Posistanco/tompor	aturo tablo for

lesistance/temperature table for emote sensor

Tempera- ture [°C]	10	20	25	30	40	50
Resistor [kΩ]	66.8	41.3	33	26.3	17.0	11.3

Troubleshooting

It becomes warm too late

Cause 1: Programmed events or time do not match.

Adjust programming.

Cause 2: A summer/ wintertime changeover has taken place in the meantime (G5).

Adjust time.

Cause 3: Optimum Start H7 is deactivated or has not run long enough yet (a few days) to determine the optimum pre-heating time.

Select Optimum Start and give the controller time to adjust itself to the conditions of the controlling environment.

It is not possible to enter any data

Cause: Key lock G6 is active.

Cancel key lock.

The desired temperature cannot be set

Cause: Temperature limit G7 prevents the desired setting.

Reset temperature limit.

Temperature display does not change

Cause: Display of the set temperature G10 is activated.

Activate display of the room temperature.

Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

Our products are under guarantee within the scope of the statutory provisions.

If you have a warranty claim, please contact the point of sale or ship the device postage free with a description of the fault to the appropriate regional representative.