Timer unit

Art.-No. BTEET

Operating instructions

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1. About these operating instructions

1.1 About these operating instructions

These operating instructions describe the timer unit (also referred to as “product” in these operating instructions). These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

2. Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.
Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.

DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:

This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.

This symbol alerts to hazardous electrical voltage. If this symbol is used in a safety message, there is a hazard of electric shock.

2.2 Intended use

The single room temperature controller is used to control the temperature in rooms with an underfloor heating system (heat/cool). The product may only be used to program the temperature reduction and the additional pump running time. Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards. Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant. When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- In conjunction with products which are used for health-saving or life-saving purposes or whose operation may incur hazards to humans, animals or property.

2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product. These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product. All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3. Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

DAMAGE TO THE PRODUCT

- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

Failure to follow these instructions can result in equipment damage.

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4. Product description

4.1 Overview of the individual components

Component	Versions	Explanation
Base module Control	EBC	Power supply, including relay pump switching, heating/cooling relay
Timer unit	EET	Time-controlled temperature reduction
Room sensor	ER	Room sensor wired
	ERWL	Room sensor wireless
Connection module (wired)	EAR2	With 2 control circuits/wired
	EAR6	With 6 control circuits/wired
Connection module WL (wireless)	EAR2WL	With 2 control circuits/wireless
	EAR6WL	With 6 control circuits/wireless

4.2 Function

The single room temperature controller is used to control the temperature in rooms with an underfloor heating system (heat/cool).
The product features a hundred year calendar. The display shows the date, time and day of the week.
The product features two independently programmable switching channels for temperature reduction. A total of nine programmable memory blocks are available. The additional pump running time can be set via the product. The product has a valve and pump protection function.
The interval function sends signals to the actuators at regular intervals so that the thermostat valves open automatically; the function helps to keep the spindle from blocking in the valve body.

4.3 Approvals, conformities, certifications

The product complies with:
- EMC Directive (2014/30/EU)
- RoHS Directive (2011/65/EU)

4.4 Technical specifications

Parameter	Value
General specifications	
Dimensions (W x H x D)	37 x 92 x 28 mm
Weight	33 g
Housing material	ABS
Temperature reduction	4K (min. temperature 12°C)
Functions	
Timing	Date, time, weekday (leap year detection)
Switching channels for temperature reduction	2, independently programmable, see chapter “Assignment of the switching channels”
Memory blocks for temperature reduction	9, independently programmable, see chapter “Assignment of the switching channels”
Valve and pump protection function	0 to 15 minutes (adjustable)
Additional pump running time	0 to 15 minutes (adjustable)
Operating modes day, night, timer	
Day	Temperature reduction never
Night	Temperature reduction always 4 °C
Timer	Temperature reduction via timer program
Operating temperature range	
Ambient	-10/+60 °C
Storage	-10/+60 °C
Max. humidity	Non-condensing
Supply voltage	
Nominal voltage	DC 3.3 V, via base module Control
Nominal power	3 mW
Battery power	> 3 months
Output	DC
Electrical safety	
Degree of protection	IP 30 (EN 60529)
Electromagnetic compatibility (EMC)	
Emitted interference/immunity	EN 61326-1: 2006-10

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5. Mounting

5.1 Mounting the product

1. Remove the cover from the base module Control.

2. Plug the product into the slot of the base module Control.

5.2 Electrical connection

DANGER

ELECTRIC SHOCK

- Verify that the degree of protection against electric shock (protection class, double insulation) is not reduced by the type of electrical installation.

Failure to follow these instructions will result in death or serious injury.

DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the mains voltage supply before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects or media.

Failure to follow these instructions will result in death or serious injury.

NOTICE

DAMAGE TO THE PRODUCT DUE TO ELECTROSTATIC DISCHARGE

- Always earth yourself before touching electronic components.
- Do not touch the product to plug it in; use the anti-electrostatic film to plug the product into the slot.

Failure to follow these instructions can result in equipment damage.

6. Commissioning

6.1 Commissioning the product

For normal operation, the product must be inserted into the base module Control. For programming, you can remove the product from the base module Control if the product was previously charged. This requires a charging period of approximately 30 minutes. The internal battery provides power for a period of approximately three months.

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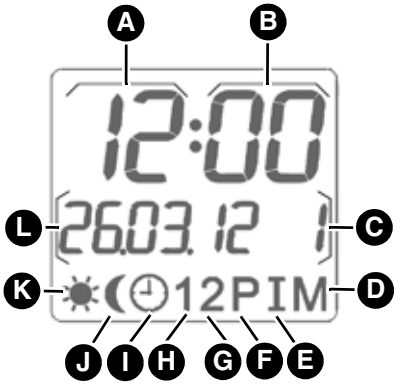
7. Operation

7.1 Display elements



A. Time hours (format: 24 h)
B. Time minutes
C. Weekday (1: Mo - 7: Su)
D. Menu active indicator
E. Switching output Interval function active
F. Switching output Additional Pump Running Time active
G. Switching channel “Timer2” active
H. Switching channel “Timer1” active
I. Timer mode active
J. Night mode active
K. Day mode active
L. Date (format DD.MM.YY)

7.2 Controls

Set key:
1. When the main screen is active, press the Set key to select the operating mode “Day”, “Night” or “Timer”.
2. When the main screen is active, hold down* the Menu key to select date and time.
3. Press the Set key to confirm the settings.

Menu key:
4. The menu key allows you to navigate in the main menu.
5. Increase selected adjustment values by briefly pressing the Menu key.
6. Hold down* the Menu key to activate fast forward.
   - The values then change at a higher speed.

* Keep key pressed for more than 3 seconds.

7.3 Main screen

The main screen of the timer module shows the following information:

- Current time
- Current date
- Current weekday
- Operating mode “Day” ✹, “Night” ◖ or “Timer” ⏲
- Status of switching channels “Timer1” and “Timer2” in operating mode “Timer”
- Status of switching channels “Interval function” and “Additional pump running time”

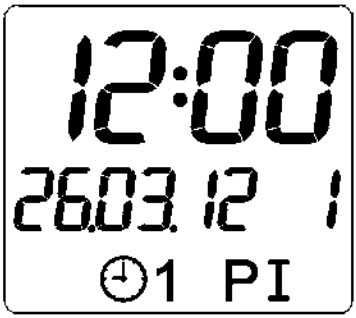


Fig. 1: Example of main screen: 12:00 p.m. March 26, 2012, Monday, operating mode Timer, switching channel Timer1 active, Additional Pump Running Time active and Interval function active

7.4 Setting the operating mode

The following operating modes are available:

- Day mode ✹ (heating control without temperature reduction)
- Night mode ◖ (heating control with permanent temperature reduction)
- Timer mode ⏲ (heating control with temperature reduction according to programmed switching times)
- When the main screen is active, briefly press the Set key to change the operating mode in the sequence Day, Night, Timer

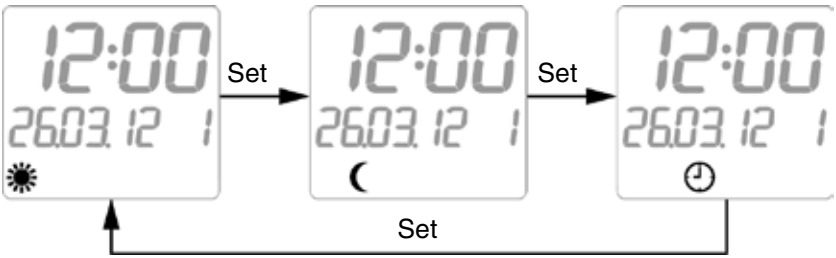


Fig. 2: Navigation structure operating modes Day, Night, Timer

7.5 Setting time and date

1. Hold down* the Set key.
   - The “Hour” digits flash.
2. Press the Menu key to adjust the required value.
3. Press the Set key to confirm and save the value.
   - The “Minute” digits flash.
4. Press the Menu key to adjust the required value.
5. Press the Set key to confirm and save the value.
   - The Seconds counter is reset to “0”.
6. Set the date and the weekday in the same way as described above.

* Keep key pressed for more than 3 seconds.

7.6 Menu

The following parameters can be set via the menu:

- Switching times **(t1 – t9)** for switching channels “Timer1” and “Timer2”
- Interval point in time and interval duration **(Int)**
- Additional Pump Running Time **(Pu)**

1. Press the Menu key to scroll through the menu.
   - The system returns to the main screen after you have scrolled through the menu and displayed last menu item.
2. Hold down* the Menu key to immediately return to the main screen of the product.
3. If you do not press a key for a period of 60 seconds, the product automatically returns to the main screen.

* Keep key pressed for more than 3 seconds

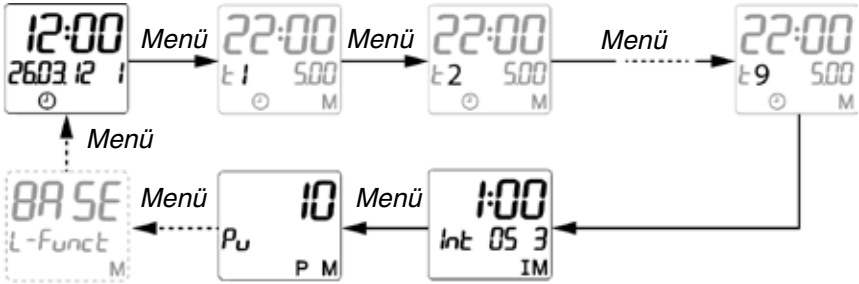


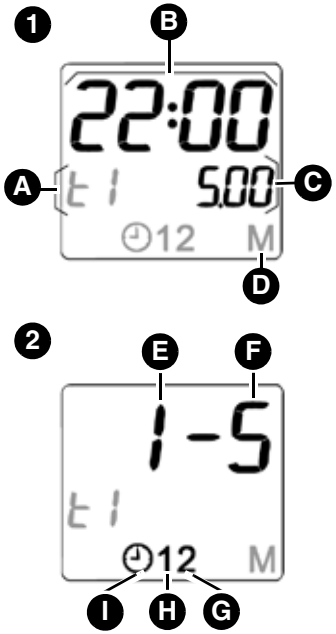
Fig. 3: Navigation structure menu

7.6.1 Programming the switching times for temperature reduction (t1 – t9) for the two switching channels “Timer1” and “Timer2”

The system provides 9 independently programmable memory blocks for the two switching channels “Timer1” and “Timer2”. Each memory block can hold the following switching data:

- Start time
- End time
- Start weekday
- End weekday
- Switching channel “Timer1” active/inactive
- Switching channel “Timer2” active/inactive

The menu Switching Channels consists of 2 screens. After you confirm the last setting in screen **1**, the product automatically switches to screen **2**:

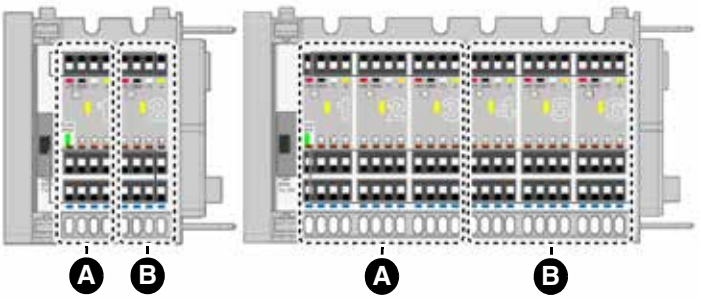


A. Memory block indicator t-1 to t-9
B. Start time (format: 24 h)
C. End time (format: 24 h)
D. Menu active indicator
E. Start weekday (1: Mo – 7: Su)
F. End weekday (1: Mo – 7: Su)
G. Switching channel “Timer2” active
H. Switching channel “Timer1” active
I. Timer mode active

To disable a memory block, the switching channels “Timer1” and “Timer2” must be inactive. The symbol “Timer” (I) flashes when both switching channels are inactive.

7.6.2 Assignment of the switching channels

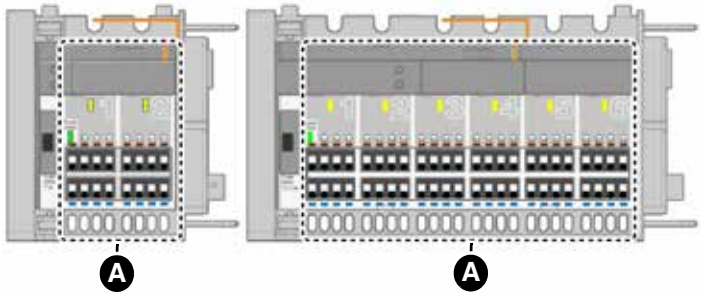
The connection modules are controlled as shown below:



A. Switching channel “Timer1”

B. Switching channel “Timer2”

The connection modules WL (wireless) are controlled as shown below:



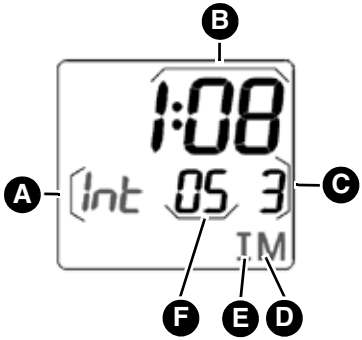
A. Switching channel “Timer1”

In the case of connection modules WL (wireless), switching channel “Timer1” controls all control circuits.

7.6.3 Programming the Interval function

If the Interval function is active, all control circuits are switched on cyclically. The following switching data can be programmed:

- Time
- Weekday
- Duration of interval
  - To disable the Interval function, you must set the duration of the interval to “0”.



A. Activate the indicator “Menu Interval Function”
B. Time (format: 24 h)
C. Weekday (1: Mo – 7: Su)
D. Indicator “Menu” is active
E. Indicator “Interval Function” is active
F. Duration of interval (0 – 15 minutes)

The symbol “I” is only displayed when the menu Interval Function is active or when the Interval function is running.

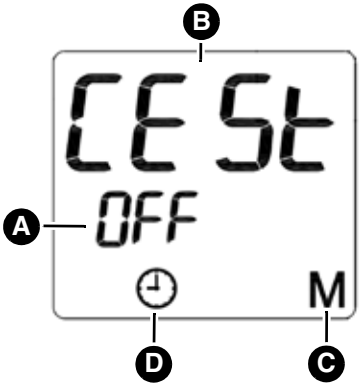
7.6.4 Setting the interval

1. Keep pressing the Menu key until the Interval function screen is displayed.
2. Hold down* the Set key.
   - The “Hour” digits flash.
3. Press the Menu key to adjust the required value.
4. Press the Set key to confirm and save the value.
   - The “Minute” digits flash.
5. Press the Menu key to adjust the required value.
6. Press the Set key to confirm and save the value.
   - The “Duration” digits flash.
7. Press the Menu key to adjust the required value.
8. Press the Set key to confirm and save the value.
   - The “Weekday” digits flash.
9. Press the Menu key to select the required weekday.
10. Press the Set key to confirm and save the value.

* Keep key pressed for more than 3 seconds.

7.6.5 Programming the Additional Pump Running Time function

You can program an additional pump running time from 0 to 15 minutes.
To disable the Additional Pump Running Time function, you must set the duration “0”.



A. Indicator “Menu Additional Pump Running Time Function” active
B. Switch on duration (0 - 15 minutes)
C. Indicator “Menu” active
D. Switching output Additional Pump Running Time function active

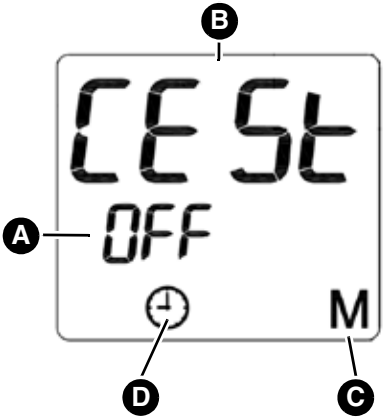
The indicator for the switching output Additional Pump Running Time is only displayed if the menu Additional Pump Running Time is active or if the function Additional Pump Running Time is running.

1. Keep pressing the Menu key until the Additional Pump Running Time function screen “Pu” is displayed.
2. Hold down* the Set key.
   - The digits for the switch on duration blink.
3. Press the Menu key to adjust the required value.
4. Press the Set key to confirm and save the value.

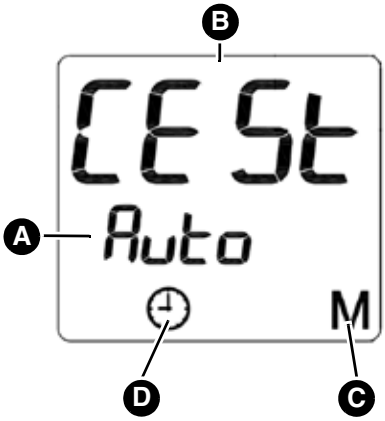
* Keep key pressed for more than 3 seconds.

7.6.6 Setting daylight saving time/winter time

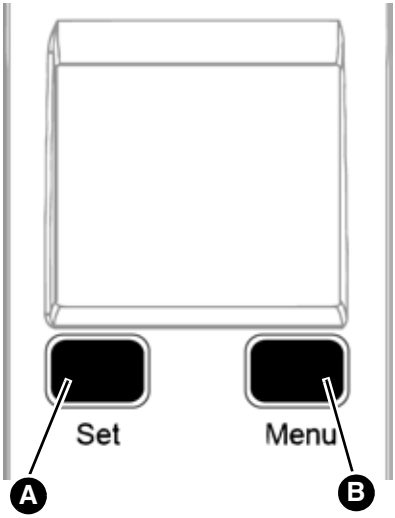
You can program “OFF and “AUTO” switching data for switching between daylight saving time and winter time.
In “OFF” mode, there is no automatic switching.
In “Auto” mode, the time is switched according to the standard CESt (Central European Summer Time).
Beginning of daylight saving time:
Last Sunday in March at 02:00 to 03:00 (advance).
End of daylight saving time:
Last Sunday in October at 03:00 to 02:00 (set back).
Scroll in the menu using the Menu key to display the daylight saving mode.



A. Mode “OFF”
B. Menu item “CEST”
C. Menu active
D. Timer function



A. Automatic mode “Auto”
B. Menu item “CEST”
C. Timer function
D. Menu active



Setting daylight saving time

1. Hold down the **Set** key (A) for 3 seconds in order to program the mode.
2. Press the **Menu** key (B) to switch between “OFF” and “Auto”.
   - The selected mode flashes.

7.6.7 Restoring the factory settings

A “Reset” restores the factory settings. Time and date are not reset.

1. Hold down the Menu key and the Set key simultaneously for 10 seconds.
   - The display shows “Reset”.
   - The factory defaults are restored.

Parameter	Function	Default value
t-1	Start time	22:00 p.m.
	End time	5:00 a.m.
	Start weekday	1
	End weekday	5
	Switching channel "Timer1"	Active
	Switching channel "Timer2"	Active
t-2	Start time	23:00 p.m.
	End time	6:00 a.m.
	Start weekday	6
	End weekday	7
	Switching channel "Timer1"	Active
	Switching channel "Timer2"	Active
t-3 to t-9	Start time	00:00 a.m.
	End time	00:00 a.m.
	Start weekday	0
	End weekday	0
	Switching channel "Timer1"	Inactive
	Switching channel "Timer2"	Inactive
Interval function	Time	1:00 a.m.
	Duration of interval	5 minutes
	Weekday	3 (Wednesday)
Additional pump running time	Switch-on duration	0 minutes
CESt	Daylight saving time	OFF

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8. Maintenance

The product is maintenance-free.

9. Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by a trained expert.

10. Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.
Electronic components must not be disposed of together with the normal household waste.

1. Disconnect the product from mains.
2. Dismount the product (see chapter “Mounting”, reverse sequence of steps).
3. Dispose of the product.

11. Warranty

See our terms and conditions or your purchase contract for information on warranty.

12. Spare parts and accessories

NOTICE

DAMAGE DUE TO UNSUITABLE PARTS

- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Art.-No.	Figure
Timer unit “EET”	BTEET	

PROFILE OF INNOVATION

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