

# GRÄSSLIN

by **INTERMATIC**

## EN Operating manual



thermio™ eco C1B/C7SB



This manual ensures safe and efficient use of the “thermio™ eco C1B” or “thermio™ eco C7SB” multi-tariff timer (referred to as “device” in the following). This manual is a component of the device and must remain accessible at all times for everyone who uses the device.

Everyone who uses the device must have read and understood this manual before commencing any work. The basic prerequisite for working safely is compliance with all safety instructions and usage instructions specified in this manual. Furthermore, the local accident prevention regulations and the general safety regulations in the area in which the device is operated apply.



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### **Declaration of conformity and download instructions**

The declaration of conformity for the device described in this manual, a download of this manual, and the technical data can be found at [www.graesslin.de](http://www.graesslin.de).



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## Overview

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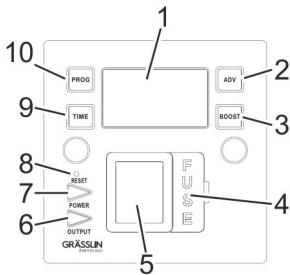


Fig. 1: Overview



- 1 **Display, illuminated**
- 2 ***[ADV]* button**
- 3 ***[BOOST]* button**
- 4 **Fuse compartment (BS 1362 (1" x 1/4") 13 A)**
- 5 **Two-pole *[on/off]* switch**
- 6 **OUTPUT LED**
- 7 **POWER LED**
- 8 ***[RESET]* button**
- 9 ***[TIME]* button**
- 10 ***[PROG]* button**





### *Description of function*

The “thermio™ eco C1B” and “thermio™ eco C7SB” multi-tariff timers are programmable timers with a fuse-protected, two-pole on/off switch. Switching times can be programmed for both devices, during which connected loads are supplied with power.

In addition, the devices have an *[ADV]* button and a *[BOOST]* button. These buttons can be used to change the current state of the device, regardless of the programming, or to activate the device for a specific time.



## Controls

Button	Function
<i>[ADV]</i>	The <i>[ADV]</i> button: <ul style="list-style-type: none"><li>• Inverts the current state, permanently activates the device, permanently deactivates the device</li><li>• Acts as a plus button</li></ul>
<i>[BOOST]</i>	The <i>[BOOST]</i> button: <ul style="list-style-type: none"><li>• Activates the device for 1 or 2 h</li><li>• Acts as a minus button</li></ul>

**Button****Function***[PROG]*

The *[PROG]* button is used to set the programming.

*[TIME]*

The *[TIME]* button is used to set the time.

*[On/off]*  
switch

The *[on/off]* switch is used to open or close the switching contacts.

*[RESET]*

The *[RESET]* button is used to reset the timer to the factory settings.



## Display elements

Display	Function
<i>[POWER]</i> LED	Displays status of device: <ul style="list-style-type: none"><li>• <i>[POWER]</i>LED on = device switched on</li><li>• <i>[POWER]</i>LED off = device switched off</li></ul>
<i>[OUTPUT]</i> LED	Displays status of programming: <ul style="list-style-type: none"><li>• <i>[OUTPUT]</i>LED on = device activated</li><li>• <i>[OUTPUT]</i>LED off = device deactivated</li></ul>
12 <i>[Display]</i>	<ul style="list-style-type: none"><li>• Current time</li></ul>



### *Battery storage*

The device has a built-in, rechargeable battery. In the event of a power failure, the device saves the programmed settings for a maximum of 40 days.

The battery is charged during normal operation and does not have to be replaced.



## *Contents*

The following components are included in the contents:

<b>Number</b>	<b>Designation</b>
1	Multi-tariff timer “thermio™ eco C1B” or “thermio™ eco C7SB”
2	3.5 mm screws
2	Strain relief clamps
2	Screw covers



## Safety

### *Safety instructions*

Safety instructions are indicated in this manual by symbols. The safety instructions are introduced by signal words that express the extent of the danger.

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#### **WARNING!**

This combination of symbol and signal word indicates a potentially dangerous situation that may result in death or severe injuries if the situation is not avoided.



### NOTICE!

This combination of symbol and signal word indicates a potentially dangerous situation that may result in material damage if the situation is not avoided.



### ENVIRONMENT!

This combination of symbol and signal word indicates potential dangers for the environment.





## *Tips and recommendations*



This symbol highlights useful tips and recommendations, as well as information for efficient and fault-free operation.

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### *Intended use*

The “thermio™ eco C1B” and “thermio™ eco C7SB” multi-tariff timers are programmable timers with a fuse-protected, two-pole on/off switch and are used for supplying power to connected devices in private and commercial areas. The connected devices must comply with the limits specified in the technical data.



### Areas of application:

- Electric radiators and heating elements
- Oil radiators
- Electric towel rails
- Heating systems
- Hotplates
- Fan heaters
- Lighting (**not** discharge lamps)

The intended use also includes compliance with all information specified in this manual.

Any use other than the intended use is considered incorrect use.



## *Wire cross-section*



**WARNING!**

**Danger due to insufficient wire cross-section!**

If wires with an insufficiently large cross-section are used, short circuits or fires may occur.

- Only use terminals with a cross-section between 1 mm<sup>2</sup> and 2.5 mm<sup>2</sup> for flexible wires.

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**WARNING!**

**Risk of injury due to uncontrolled behaviour of connected loads!**

- Before starting the device, check whether the connected load could cause hazardous situations for persons.



**NOTICE!**

**Damage to the device due to unsuitable installation location!**

Installation at an unsuitable location can cause damage to the device.



- Only use the device in dry rooms and do not install close to devices with inductive discharge (motors, transformers, etc.).

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### *Residual risks*

The device is state-of-the art and designed in accordance with current safety requirements. However, residual risks remain that require caution when using the device. The residual risks, and the conduct and measures they require, are listed in the following.



**WARNING!**

**Danger to life due to electric shock!**

Improper assembly and installation of the device can lead to life-threatening electrical voltages.

- Have assembly and connection performed by a qualified electrician only.



## *Personnel requirements*



### **Qualified electrician**

Professional training, knowledge and experience, and knowledge of the relevant standards and regulations allows the qualified electrician to perform work on electrical systems and to identify, and avoid, potential dangers of their own accord.

A qualified electrician is specifically trained for the work environment in which they work, and are familiar with the relevant standards and regulations.

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## **User**

The user is the person who uses and operates the device in compliance with proper use, without any prior knowledge.



## Installation

### *Electric connection and installation*

The device is installed on a flush-mounted socket (BS 4662 or BS 5733). The connection wire is either routed out of the flush-mounted socket or it is routed to the device on the wall.

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In general, the following instructions apply to both installation types. Where there are differences, the corresponding installation type is specified before the instructions.



**WARNING!**

**Danger to life due to electric shock!**

Improper assembly and installation of the device can lead to life-threatening electrical voltages.

- Have assembly and connection performed by a qualified electrician only.

**Personnel:**

-  Qualified electrician

**Special tool:**

- Phillips screwdriver
- Flat-head screwdriver

**Materials:**

- 3.5 mm screws

**Prerequisite:**

- The terminals for the flexible wires must have a cross-section between 1 mm<sup>2</sup> and 2.5 mm<sup>2</sup>.
- Make sure that the flush-mounted socket has been installed correctly and is dust-free.



1. On-wall connection wires: Undo the strain relief screws (Fig. 2/3) on the rear of the device and place to one side.
2. Remove the plastic cover.
3. Strip the insulation from the connection wire.
  - Stripping length: 8 mm

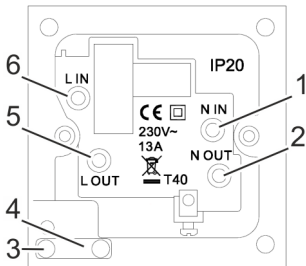
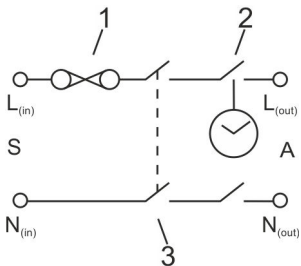


Fig. 2: Wiring diagram



- 1 Neutral (IN)
- 2 Neutral (OUT)
- 3 Screws for strain relief clamp
- 4 Cable feed-through
- 5 Switchable live wire (OUT)
- 6 Live wire (IN)



**Fig. 3: Circuit diagram for two-pole on/off switch**



- 1 **BS 1362 fuse**
  - 2 **Timer**
  - 3 **Two-pole on/off switch**
  - S **Supply**
  - A **Connected load**
4. Insert the connection wires into the corresponding terminals in accordance with the wiring diagram (Fig. 2).

5.



**NOTICE!**

**Tightening torques**

To avoid damage and faulty contacts, tighten the terminals using a torque of **0.6 Nm**.



Tighten all the terminals.

6. On-wall connection wires: Thread the connection wires into the device through the cable feed-through (Fig. 2/4).
7. On-wall connection wires: Tighten the strain relief clamp from the contents using the screws for the strain relief clamp (Fig. 2/3).



NOTICE!

**Danger of material damage to the wires!**

When screwing the device tight, there is a risk of pinching wires. This results in material damage to the wires.

- To avoid damage and faulty contacts, make sure that the wires are not pinched when you insert the device into the flush-mounted socket.

8. Fasten the device onto the flush-mounted socket using the screws (3.5 mm).

## *Initial commissioning*

1. To switch on the device, flip up the *[on/off]* switch.



Before the first programming operation or after the device has been disconnected from the mains supply for more than 5 days, the device must first be fully charged (4 hours) and then reset using the Reset button.

2. Press the *[RESET]* button with a thin object, e.g. a refill for a ballpoint pen.



**Fig. 4: Initial display**

- ⇒ All the display segments light up briefly and the initial display (Fig. 4) appears.
3. Use the *[ADV]* button to set the daylight saving time adjustment.

- Switch on automatic daylight saving time = ON
  - Switch off automatic daylight saving time = OFF
4. Press and hold the button *[TIME]* button for 3 s to save the settings.
- ⇒ During those 3 s, HOLD appears on the display. Next, the preset year appears on the display.



Fig. 5: Year display

5. Use the *[ADV]* or *[BOOST]* button to set the current year.



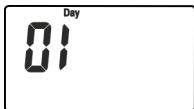
Press and hold the *[ADV]* or *[BOOST]* button briefly to quickly increase or decrease the set values.

6. Confirm the setting with the *[TIME]* button.  
⇒ The preset month appears on the display.



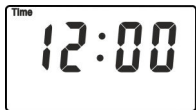
**Fig. 6: Month display**

- Use the *[ADV]* or *[BOOST]* button to set the current month.
- Confirm the setting with the *[TIME]* button.  
⇒ The preset day appears on the display.



**Fig. 7: Day display**

- Use the *[ADV]* or *[BOOST]* button to set the current day.
- Confirm the setting with the *[TIME]* button.  
⇒ The preset time appears on the display.



**Fig. 8: Time display**

11.  The time is displayed in 24 h format.

Use the *[ADV]* or *[BOOST]* button to set the current hour.

12. Confirm the setting with the *[TIME]* button.



13. Use the *[ADV]* or *[BOOST]* button to set the current minutes.
14. Confirm the setting with the *[TIME]* button.



**Fig. 9: Time display, set correctly**

- ⇒ The device switches to active mode and the display shows the set time and (only for the “thermio™ eco C7SB” multi-tariff timer) the day of the week.



If you need to change only the time or only the date, you can skip individual settings by pressing the *[TIME]* button.



## Operation

### Programming the switching times

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The “thermio™ eco C7SB” multi-tariff timer has four independently programmable time slots (ON/OFF) per day. The days of the week can either be grouped together or programmed individually; you have a choice of three modes:

- All 7 days of the week with identical settings: Mo Tu We Th Fr Sa Su
- 5 weekdays and 2 weekend days (5 + 2) with different settings for each: Mo Tu We Th Fr and Sa Su



- Each day of the week individually:  
MoTuWeThFrSaSu

The “thermio™ eco C1B” multi-tariff timer also has four independently programmable time slots (ON/OFF) but it does not offer different modes. The four time slots are automatically applied to all seven days of the week.



### **Note the following if programming beyond midnight:**

- Enter 00:00 as the end time of the last time slot.
- Enter 00:00 as the start time of the first time slot the next day.
- Enter the end time of the first time slot the next day.

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### **Personnel:**

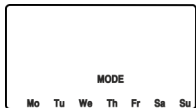
- User

### **Setting modes (C7SB only)**

1. Press and hold the *[PROG]* button for 3 s.



- ⇒ During those 3 s, HOLD appears on the display. Next, MODE appears on the display.



**Fig. 10: Days of the week display**

2. Use the *[ADV]* or *[BOOST]* button to set the desired mode.

The following appears on the display:

- Mo Tu We Th Fr Sa Su
- Mo Tu We Th Fr and Sa Su
- MoMoTuWeThFrSaSu



3. Confirm selection with the *[PROG]* button.

- ⇒ The selection appears on the display and the start time of the first time slot (ON) can be set.

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If you selected the “5 + 2” or “each day of week individually” mode, you have to repeat the following steps until all the time slots have been set.



## Setting the time slots (C1B and C7SB)

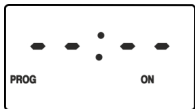


Fig. 11: Display start of first time slot (ON)

4.



Empty time slots (dashes) can be restored by pressing the *[RESET]* button to reset the device to the factory settings.

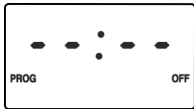
If time slots are not necessary, leave the dashes unchanged and press *[PROG]* again.





- Use the *[ADV]* or *[BOOST]* button to set the hour.
5. Confirm the setting with the *[PROG]* button.
  6. Use the *[ADV]* or *[BOOST]* button to set the minutes.
  7. Confirm the setting with the *[PROG]* button.

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**Fig. 12: Display end of first time slot (OFF)**

⇒ You can set the end time of the first time slot (OFF).

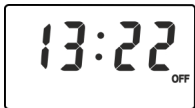
8. Use the *[ADV]* or *[BOOST]* button to set the hour.



9. Confirm the setting with the *[PROG]* button.
10. Use the *[ADV]* or *[BOOST]* button to set the minutes.
11. Confirm the setting with the *[PROG]* button.
12. Repeat steps 4 to 11 to set the remaining time slots.



13. After you have entered the last time slot, press the *[PROG]* button.



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**Fig. 13: Display during operation**

- ⇒ The device switches to the currently programmed state and the display shows the current time slot, e.g. OFF (Fig. 13).



If the state shown on the display (e.g. OFF) does not match the programmed time slots, press the *[ADV]* button. The inverse state is now activated and is retained until the programmed time slot specifies a change.

## Changing programmes

### Personnel:

- User
1. Press and hold the *[PROG]* button for 3 s.
    - ⇒ During those 3 s, HOLD appears on the display. Next, MODE appears on the display.



2. If you want to keep the current mode unchanged, press the *[PROG]* button.



If the mode is changed, all saved time slots are deleted.

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If you want to change the mode, use the *[ADV]* or *[BOOST]* button to set the desired mode and press the *[PROG]* button to confirm.

3. If you do not want to change the mode, use the *[ADV]* or *[BOOST]* button to change the time slots and press the *[PROG]* button to confirm.



If you change the mode, program the time slots again ↪ Chapter "Programming the switching times" on page 43.

## Advance *[ADV]*

If the device is switched on, the *[ADV]* button changes the current state. The state changes as follows, depending on how many times you press the *[ADV]* button:



- **First time pressing***[ADV]*
  - The current state is inverted: The device is either activated or deactivated, depending on what state it was in previously. The new state is retained until the next programmed time slot or until the state is changed manually.
- **Second time pressing***[ADV]*
  - The device is permanently activated, regardless of the current state. Programmed time slots are ignored, the device has to be deactivated manually.



- **Third time pressing *[ADV]***
  - The device is permanently deactivated, regardless of the current state. Programmed time slots are ignored, the device has to be activated manually.
- **Fourth time pressing *[ADV]***
  - The *[ADV]* setting is ended manually.

## Boost *[BOOST]*

If the device is switched on, the *[Boost]* button enables a short ON-period lasting one to two hours. Programmed time slots are unchanged and are ignored during this time.





- **First time pressing *[BOOST]***
  - The device is activated for 1 h.
- **Second time pressing *[BOOST]***
  - The device is activated for 2 h.
- **Third time pressing *[BOOST]***
  - The *[BOOST]* period is ended manually.



## Replacing the fuse


The fuse is an overcurrent protection device. If the fuse is tripped by a current peak, the fuse has to be replaced.



The current rating required for the new fuse can be found on the old fuse.



## Personnel:

-  Qualified electrician
- User

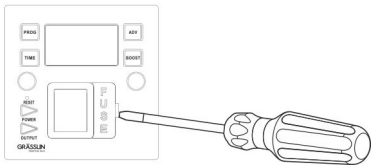
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## Special tool:

- Flat-head screwdriver

## Materials:

- Fuse BS 1362 (1" x 1/4") 13 A



**Fig. 14: Opening the fuse compartment**

1. Prise open the fuse compartment from the groove on the left-hand side, using a flat-head screwdriver.
2. Pull out the fuse compartment.
3. Pull the fuse out to the right, using your fingers.
4. Insert a new fuse with the same current rating.
5. Push the fuse compartment closed.



If the connected load still does not function after the fuse has been replaced, either the device or the connected load is damaged.

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## Disposal



ENVIRONMENT!

**Incorrect disposal presents an environmental danger.**

Incorrect disposal could result in environmental dangers.

- Electric scrap and electronic components must be disposed of correctly, i.e. the parts for disposal must be sorted into material groups.



- Disposal must be environmentally responsible and must employ state-of-the-art environmental protection, recycling and disposal technology.

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80.10.1479.7/0217/V01