AURATON Libra

User manual ver. 20220222
The document presents collected information on safety, assembly and use of AURATON Libra.

Weekly, wired thermostat

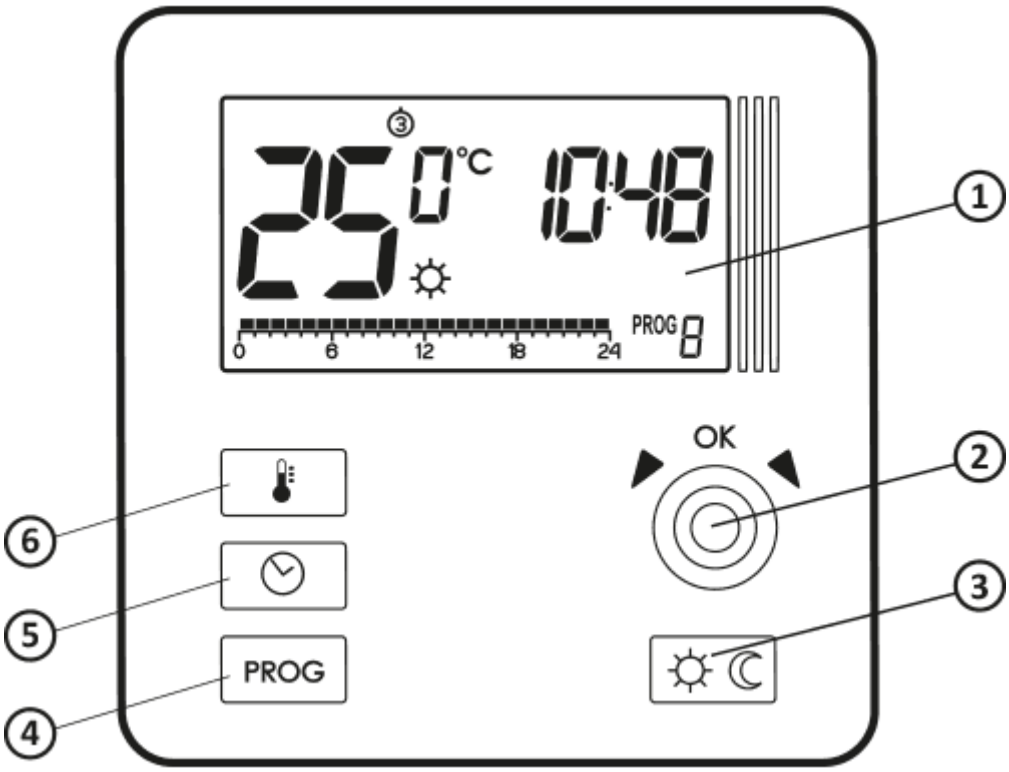
AURATON Libra is a weekly, wired thermostat designed to work with a gas or electric heating device.

❄	**3 independently adjustable temperatures** Day, night, anti-freezing.
	9 independent temperature programs Including 6 user-modifiable programs.
LCD	**Backlit LCD display** The backlit display allows you to supervise the operation of the device even in poorly lit rooms.

Description of the AURATON Libra

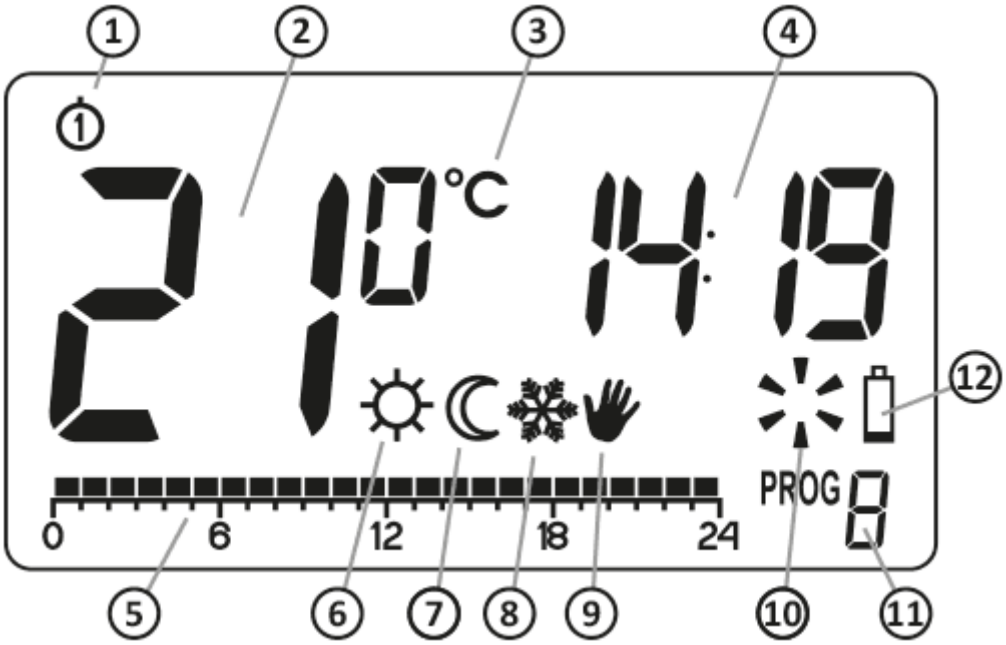
Weekly, wired thermostat

There is a backlit LCD display, four function buttons and a temperature setting knob with an **OK** button on the front part of the regulator’s casing.



1. LCD display
2. setting knob with integrated OK button
3. mode selection buttons:
   - ☼ – day mode – comfort,
   - ☾ – night mode – economic
4. selection button
5. date/time/day of week setting button
6. temperature setting button

Display



1. **Day of the week** (①–⑦) – Indicates what day of the week it is. Each day is assigned a number.
2. **Temperature** – AURATON Libra displays the temperature of the room in which it is installed in normal operation mode.
3. **Temperature unit** – tells you that the temperature is displayed in Celsius degrees (°C).
4. **Clock**
   Time is displayed in a 24-hour system.
5. **Timeline**
   Program progress indicator. The timeline is divided into 24 segments, each of which corresponds to one hour. It shows how a given program is implemented. *(see chapter "Timeline")*
6. **Day mode indicator (☼)**
   Indicates that AURATON Libra is operating in the day mode. *(see chapter "Temperature programming")*
7. **Night mode indicator (☾)**
   Indicates that AURATON Libra is operating in the night mode. *(see chapter "Temperature programming")*
8. **Anti-freezing mode indicator (❄)**
   Indicates that AURATON Libra is operating in the anti-freezing mode. *(see chapter "Anti-freeze mode")*
9. **Manual control indicator (✋)**
   Appears when no program is used. *(see chapter "Manual control mode")*
10. **AURATON Libra activation indicator (✳)**
    Segment giving information about the operating status of AURATON Libra. Visible when the regulator is turned on.
11. **Program number**
    Indicates the number of the currently running program. *(see chapters "Factory programs" and*

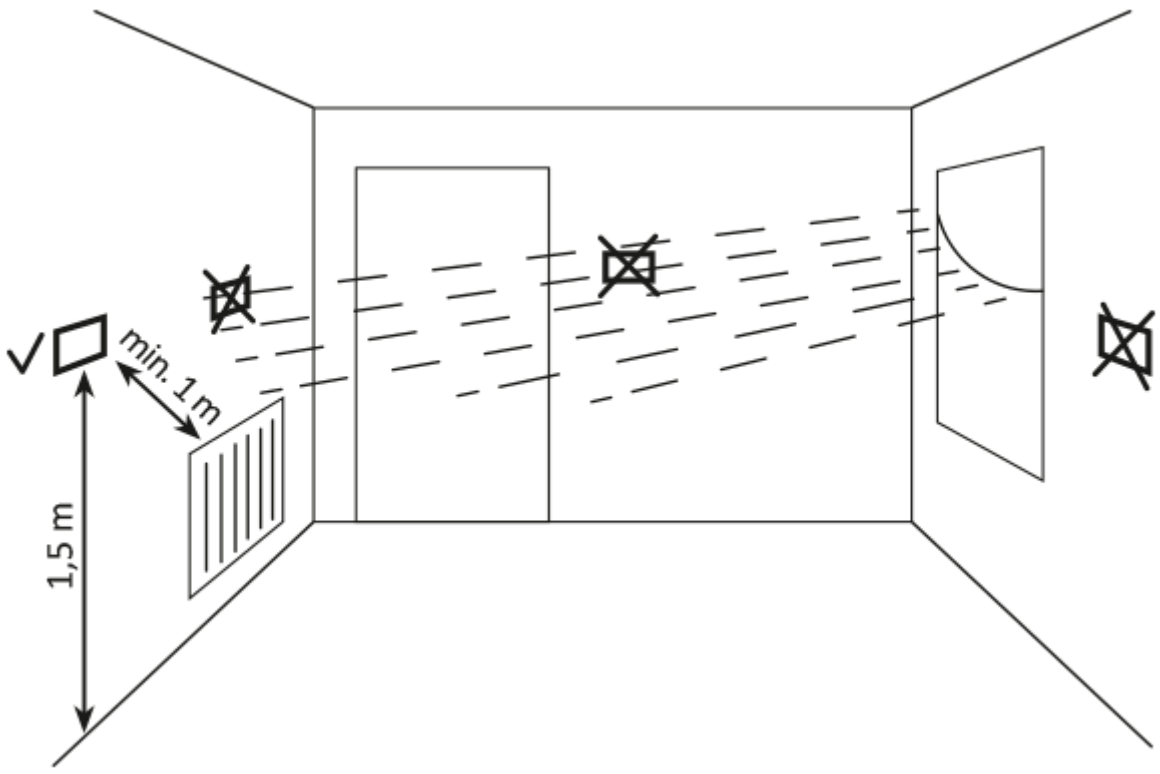
“Weekly programming”)

12. **Dead batteries ( )**

    The indicator is visible when the minimum permissible battery voltage level is exceeded. The batteries need to be replaced as soon as possible.

> **IMPORTANT:**
>
> **In order to maintain any programmed parameters, the battery replacement operation should not exceed 30 seconds.**

Choosing the right location for AURATON Libra

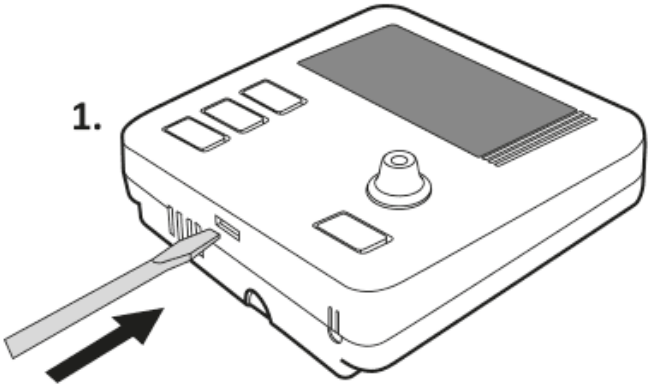


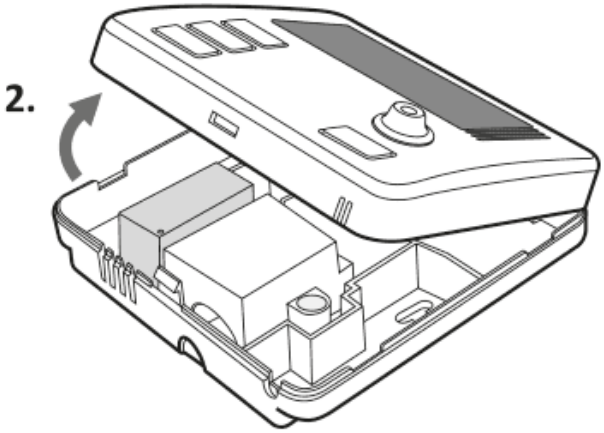
The correct operation of AURATON Libra is largely influenced by its location. Using the device in a place with no air circulation or a place with direct sunlight may result in incorrect temperature control. AURATON Libra should be installed on the internal wall of a building (a partition wall), in an environment with free air circulation. You should avoid proximity to heat-emitting devices (TV, heaters, refrigerators) or locations exposed to direct sunlight. The vicinity of doors and exposing

AURATON Libra to possible vibrations may also cause problems with proper operation of the device.

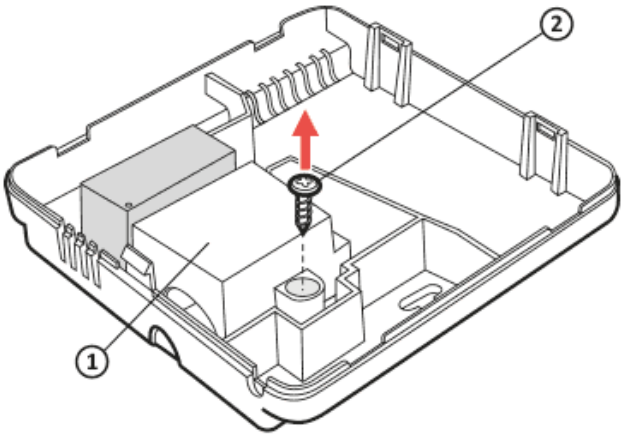
Connecting cables to AURATON Libra

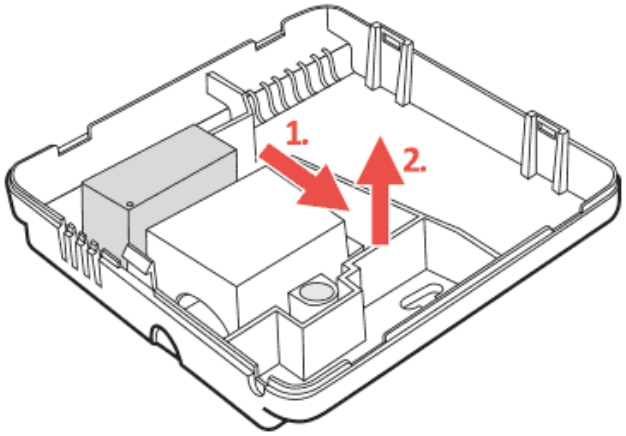
To connect the wires, remove the casing as shown below:

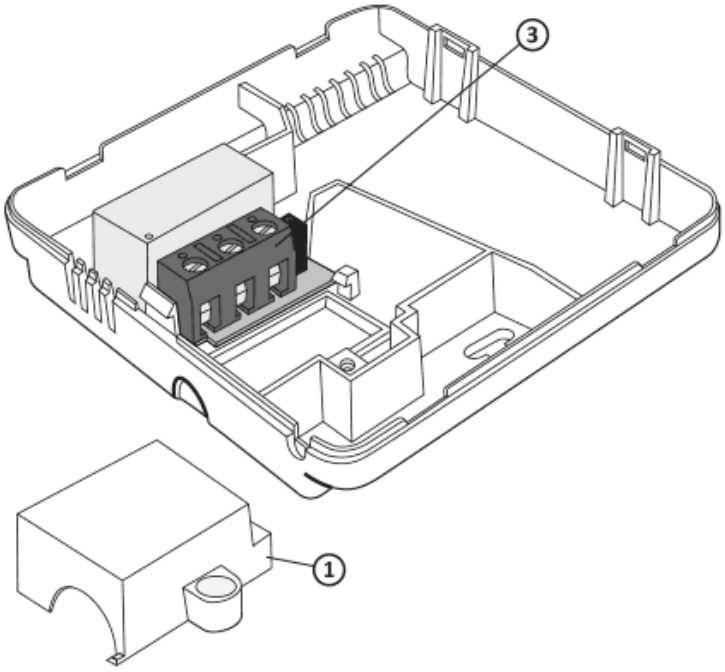


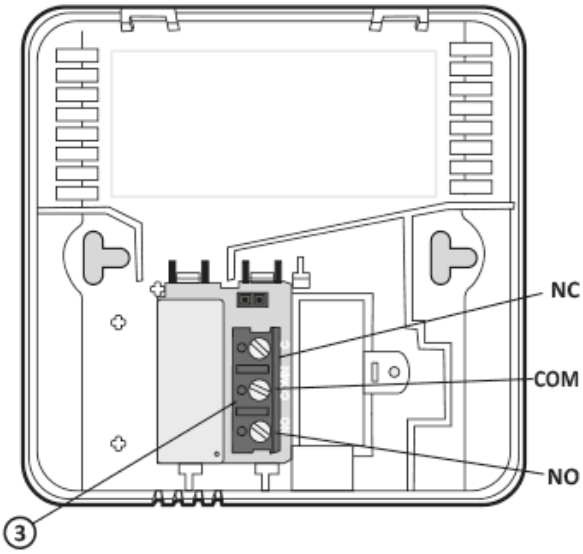


The terminals are located on the back of AURATON Libra, **under the plastic casing.**









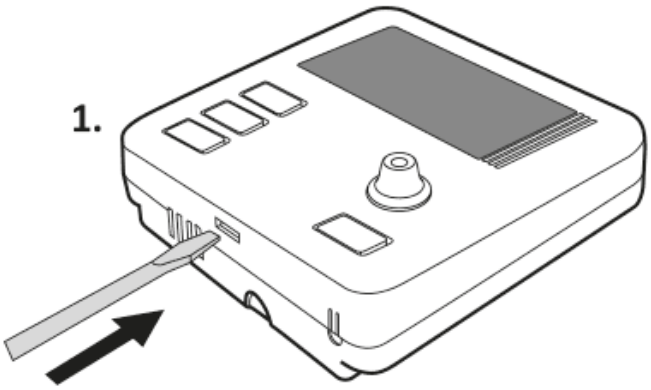
1. cover
2. screw
3. wire terminals

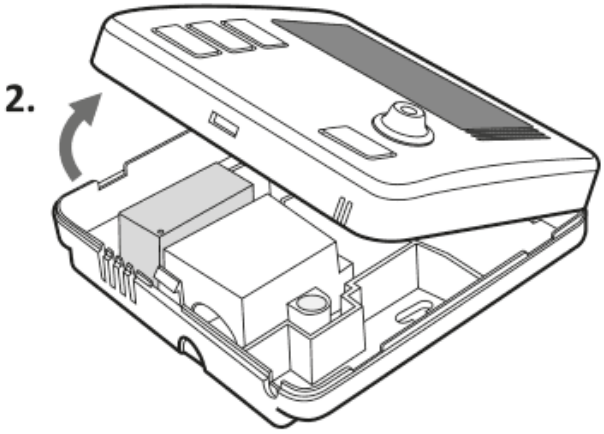
It is a typical single-pole double-throw relay. In most cases, the NC terminal is not used.

IMPORTANT:
After connecting the wires, place the plastic casing back on.

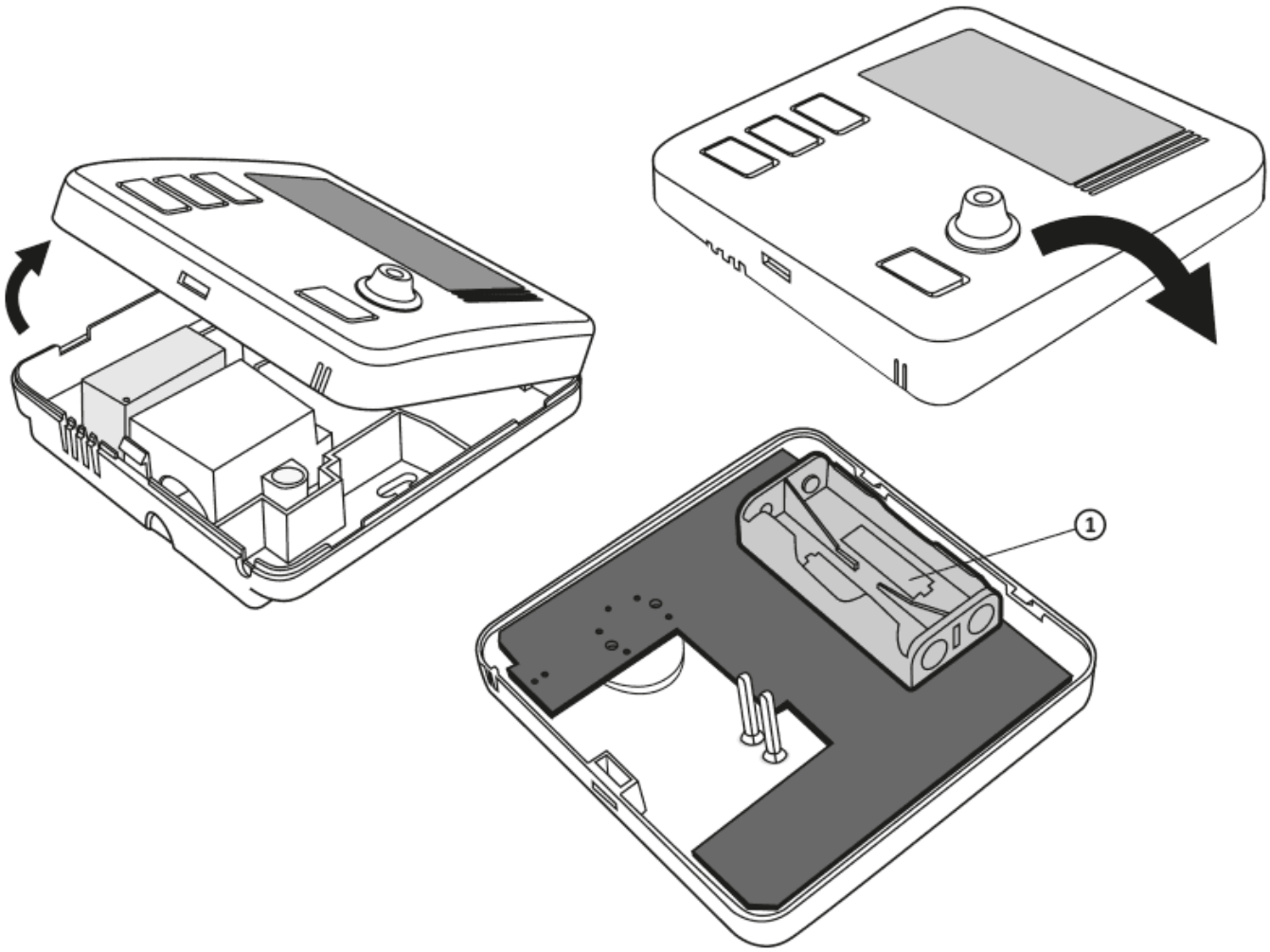
Battery replacement

The battery compartment is located inside AURATON Libra in the front of the casing. To install the batteries, remove the casing of AURATON Libra as shown in the figure below:





IMPORTANT:
We recommend using alkaline batteries to power AURATON regulators. Do not use “rechargeable batteries” because their rated voltage is too low.



1. – AAA 1.5 V battery socket

Insert two 1.5V AAA batteries into the battery compartment, paying attention to the correct polarity of the batteries.

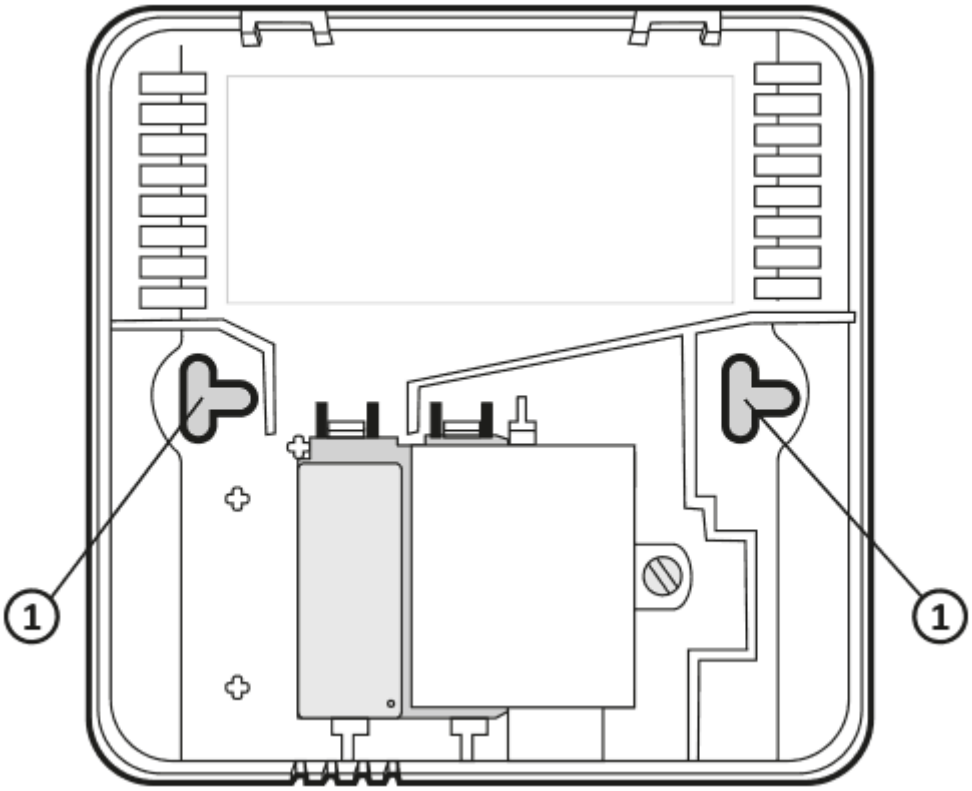
IMPORTANT:
After replacing the battery and assembling the cover, we recommend pressing the OK button twice to stabilise the relay operation.

Mounting AURATON Libra – the weekly, wired temperature regulator

In order to mount AURATON Libra on the wall:

1. Remove the casing *(as shown in the "Battery Replacement" section)*
2. Drill two holes with a diameter of 6 mm in the wall *(mark the spacing between the holes using the rear part of the AURATON Libra casing).*
3. Put wall plugs in the drilled holes.
4. Fix the rear part of the casing of AURATON Libra to the wall using the screws included in the kit.
5. Put the casing on.

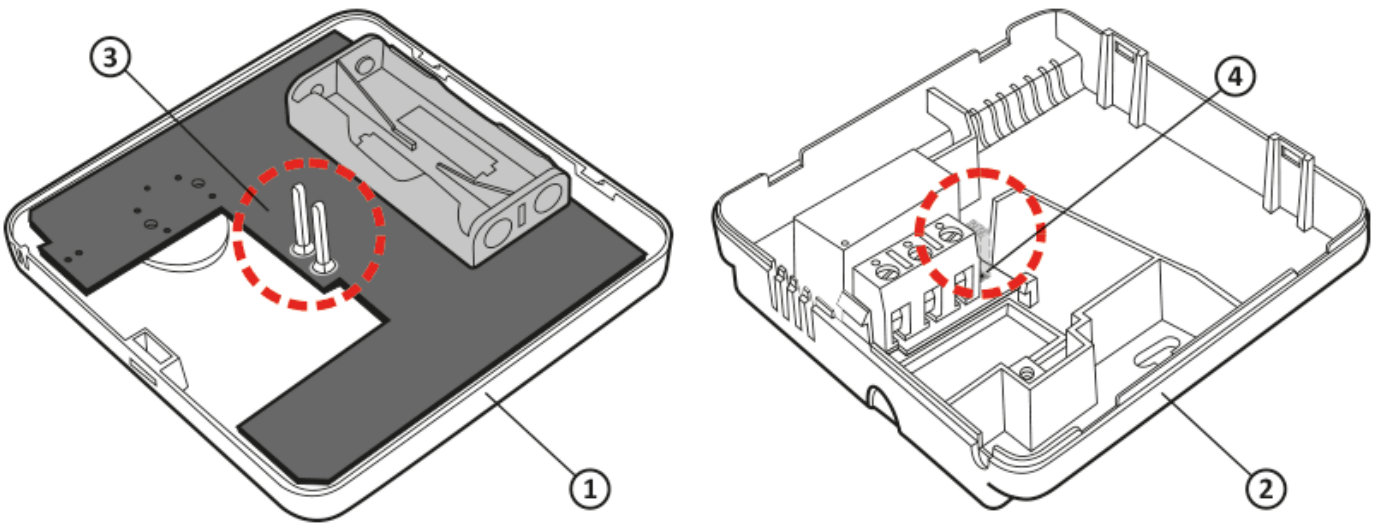
IMPORTANT:
In the case of a wooden wall, there is no need to use wall plugs. It is enough to drill holes with a diameter of 2.7 mm (instead of 6 mm) and screw the screws directly into the wood.



1. hole for fastening screw

Putting the casing back on: IMPORTANT

Pay attention to the pins that transmit control to the relay when putting the front part of the casing to the rear part.

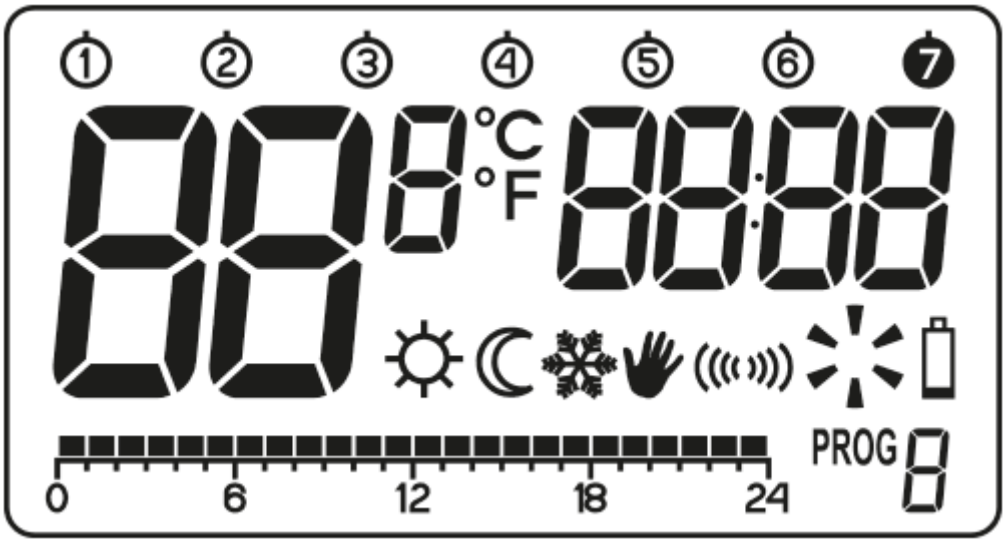


1. Front casing
2. Rear casing
3. Pins
4. The socket of the pin connector or the place where the pins contact the board

IMPORTANT:
Make sure that the “pins” are not bent and that they are placed in the correct spots on the relay board when assembling the casing. This is crucial for the proper operation of AURATON Libra.

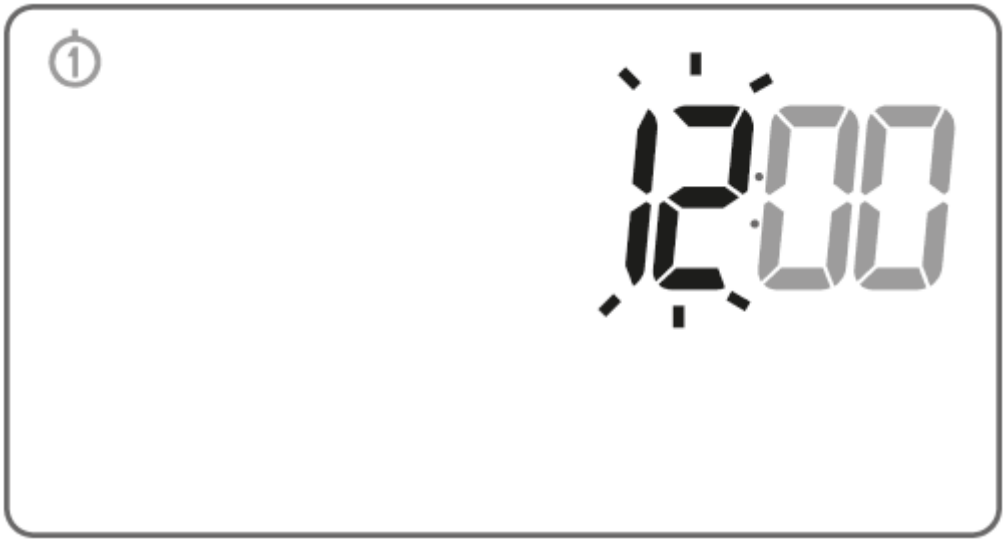
Turning AURATON Libra on for the first time

After inserting the batteries correctly into the battery compartment, the LCD screen will display all the segments for a second and then the software version number.



After a while, AURATON Libra will automatically switch to the time setting mode. A flashing item on the

screen means that the device is currently in the edit mode. Turn the knob to the left or right to set the required hour and confirm using the OK button.



Turn the knob to the left or right to set the correct value on the minute segment and confirm using the OK button.

A flashing symbol of the day of the week appears in the upper left corner. Turn the knob to the left or right to set the day and confirm the selection using the OK button.

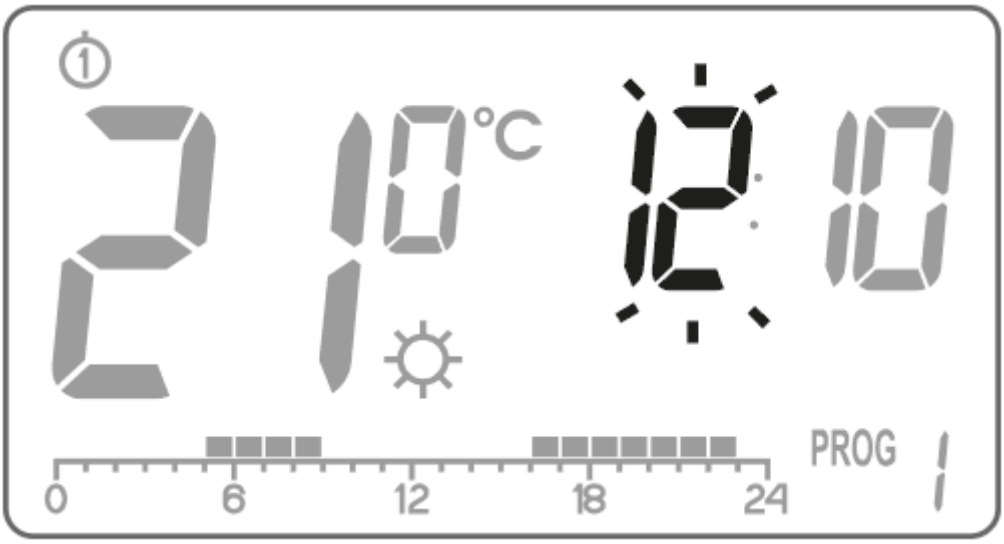
IMPORTANT:
If no button is pressed for 60 seconds in the initial edit mode, 12:00 o’clock and Monday, as the day of the week, will be set automatically.

IMPORTANT:
When programming any other functions, not pressing any button for 10 seconds is equivalent to using the OK button.

Setting the clock and day of the week

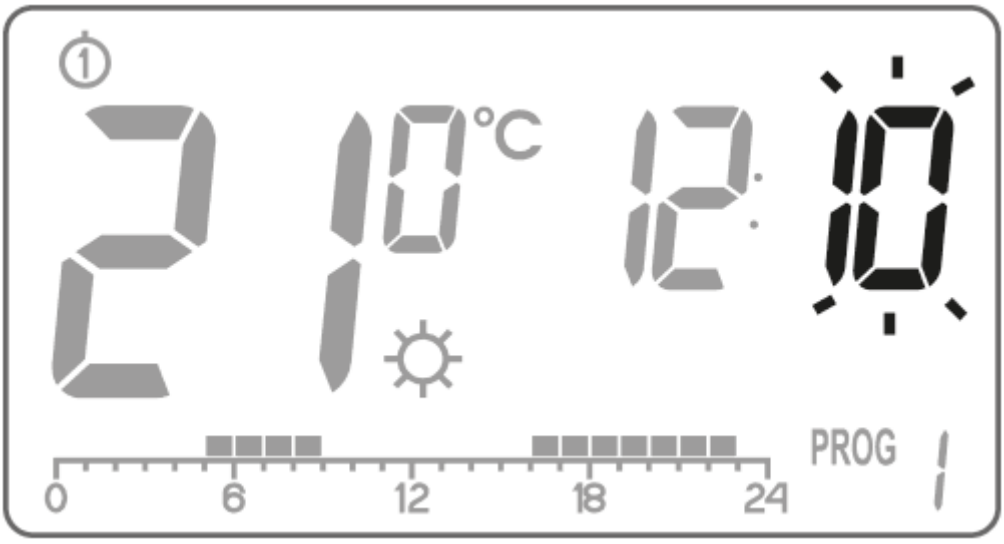
To set the clock:

Press the button. The hour segment on the display will start flashing.

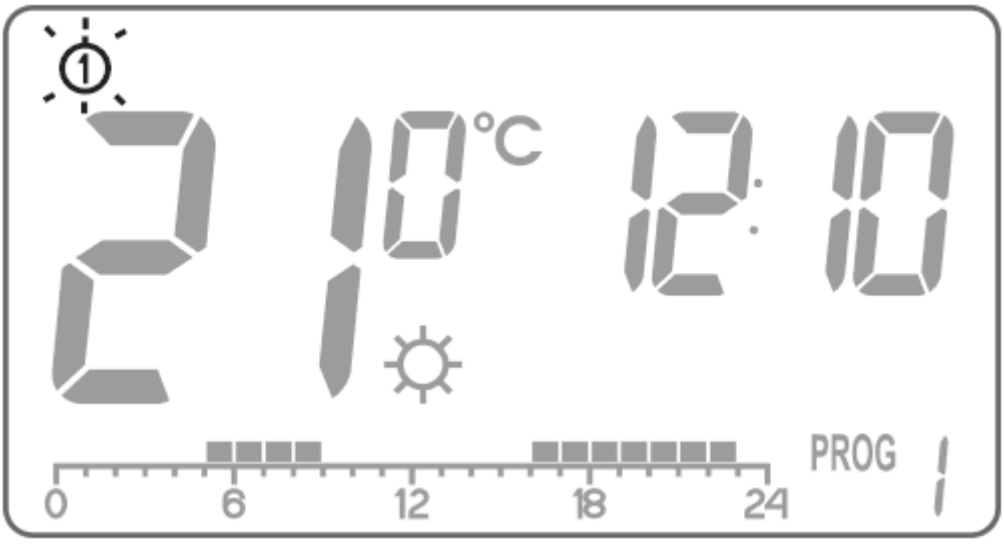


2. Turn the knob to the left or right to set the required hour and confirm with using the OK button.

   Turn the knob to the left or right to set the correct value on the minute segment and confirm using the OK button.



A flashing symbol of the day of the week appears in the upper left corner. Turn the knob to the left or right to set the day and confirm the selection using the OK button.



IMPORTANT:

You can also switch by pressing the  button.

Default program setting

- **Monday – Friday:**
  The heating device maintains the day temperature (☼) from **05:00 to 8:00 A.M.** and from **3:00 to 11:00 P.M.**
- **Saturday – Sunday:**
  The heating device maintains the day temperature (☼) from **06:00 A.M. to 11:00 P.M.**
- **default temperature settings:**
  ☼ day temperature – 21,0°C
  ☾ night temperature – 19,0°C
  ❄ anti-freeze temperature – 7,0°C

Programming day and night temperatures

AURATON Libra allows you to program 2 types of temperature:

- Day temperature (☼) – from 5 to 30°C
- Night temperature (☾) – from 5 to 30°C

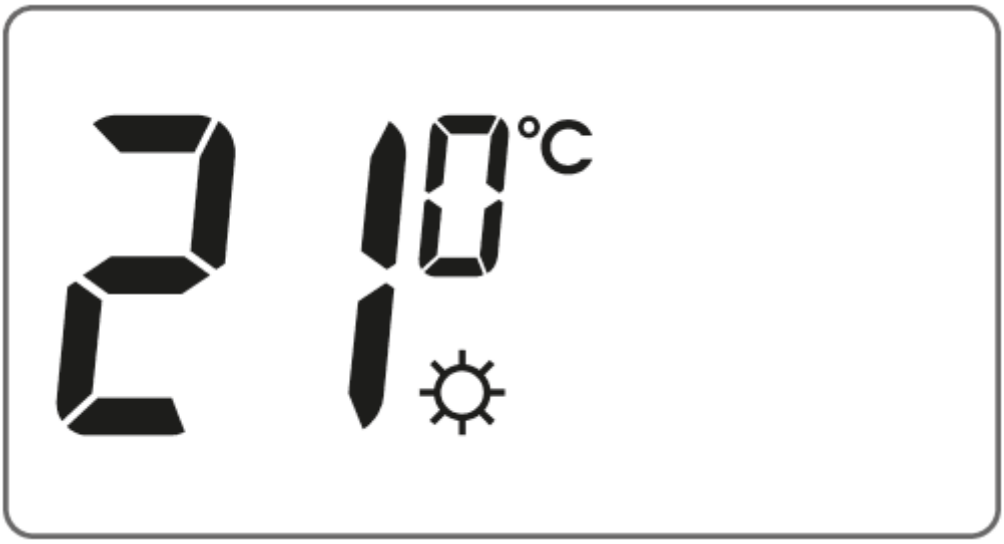
To set one of the temperatures above:

1. Press the  button.

The display will show the currently set temperature with one of the two symbols:

☼ **– day temperature;**

☾ **– night temperature.**



3. Turn the knob to the left or right to set the desired temperature value.
4. Pressing the button will switch the edit mode between the day and night temperatures (☼, ☾).
5. After setting the temperatures, confirm using the (OK) button.

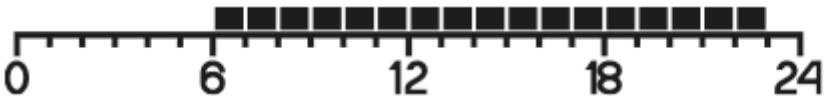
IMPORTANT:
The night temperature setting can be equal to or lower than the day temperature. It is impossible for the night temperature to be higher than the day temperature.

Introduction to programming

Timeline

The timeline on the LCD display is divided into 24 sections. Each of them symbolizes 1 hour of the day. Black rectangles above the timeline mean that the day temperature has been programmed for specific hours, and that there is no night temperature.

Example:



The figure above shows that from 6.00 A.M. to 11.00 P.M. Auraton Libra will control the heating device in such a way that the room temperature will be day temperature (☼). AURATON Libra will switch to night temperature from 11.00 P.M. to 6.00 A.M. (☾).

Factory programs

In order for AURATON Libra to know when to turn on the day and night temperatures, you should be set to an appropriate program for each day of the week. For this purpose, you can use one of the three factory programs (from 0 to 2):

Program no. 0 – anti-freezing ❄

Unmodifiable factory program. Designed for all-day anti-freezing temperature setting.

Program no. 1 – weekly

Unmodifiable factory program. Sets day temperature from 5:00 to 8:00 A.M. and from 3:00 to 11:00 P.M.

Program no. 2 – weekend
Unmodifiable factory program. Sets day temperature from 6:00 A.M. to 11:00 P.M.

Programs no. 3, 4,…., 8 – user-defined programs
Programs from 3 to 8 are user-defined programs. They can be freely modified and adapted to specific requirements.

Programming

Weekly programming

To program AURATON Libra, set the day temperature intervals for individual days of the week. At other time, night temperature will be set.

Sample AURATON Libra setting from Monday to Sunday. Outside the intervals programmed, the night temperature will be set.

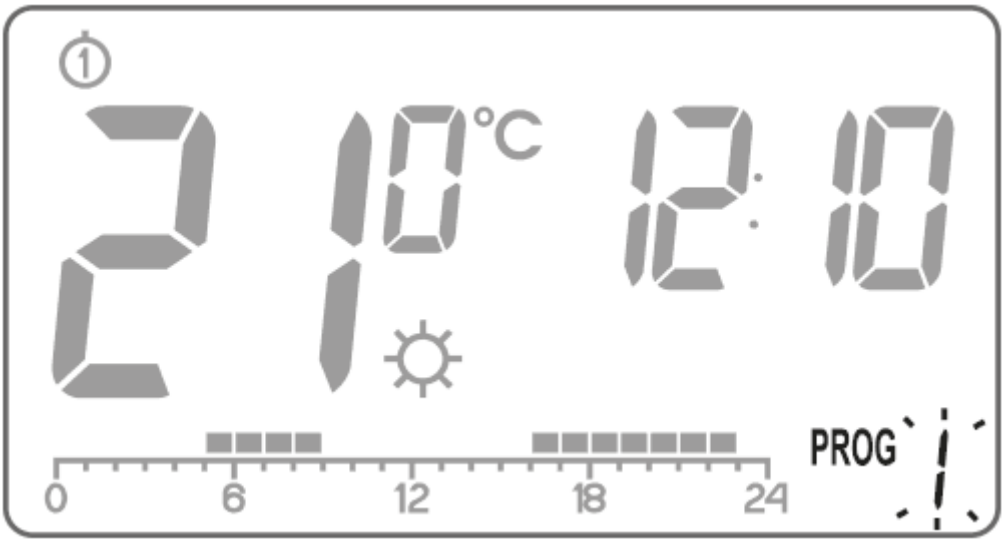
Day	Day temperature	
Monday	5:00 – 8:00 A.M.; 3:00 – 11:00 P.M.	
Tuesday	5:00 – 8:00 A.M.; 3:00 – 11:00 P.M.	
Wednesday	5:00 – 8:00 A.M.; 3:00 – 11:00 P.M.	
Thursday	5:00 – 8:00 A.M.; 3:00 – 11:00 P.M.	

Friday	5:00 – 8:00 A.M.; 3:00 – 11:00 P.M.	
Saturday	8:00 A.M. – 11:00 P.M.	
Sunday	8:00 A.M. – 11:00 P.M.	

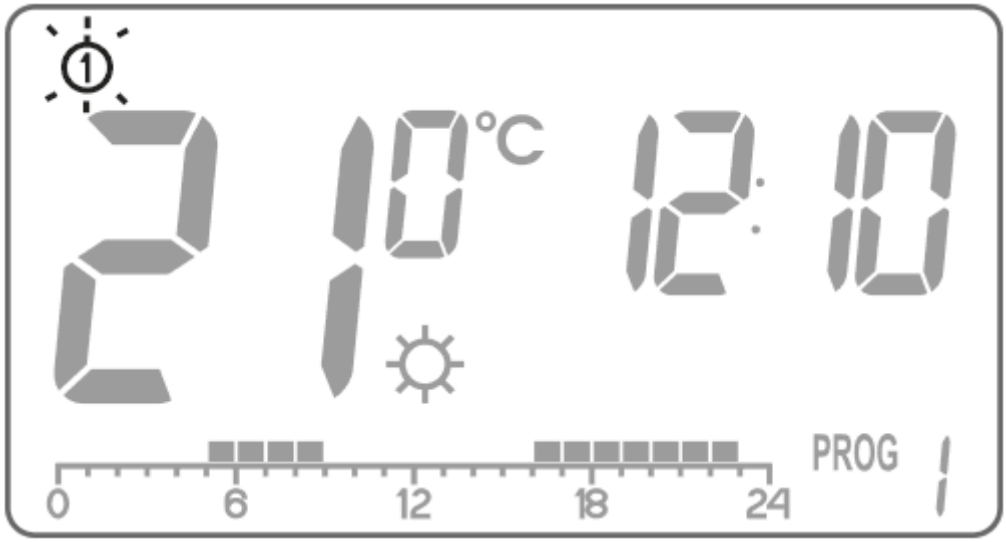
Program selection

To set the program:

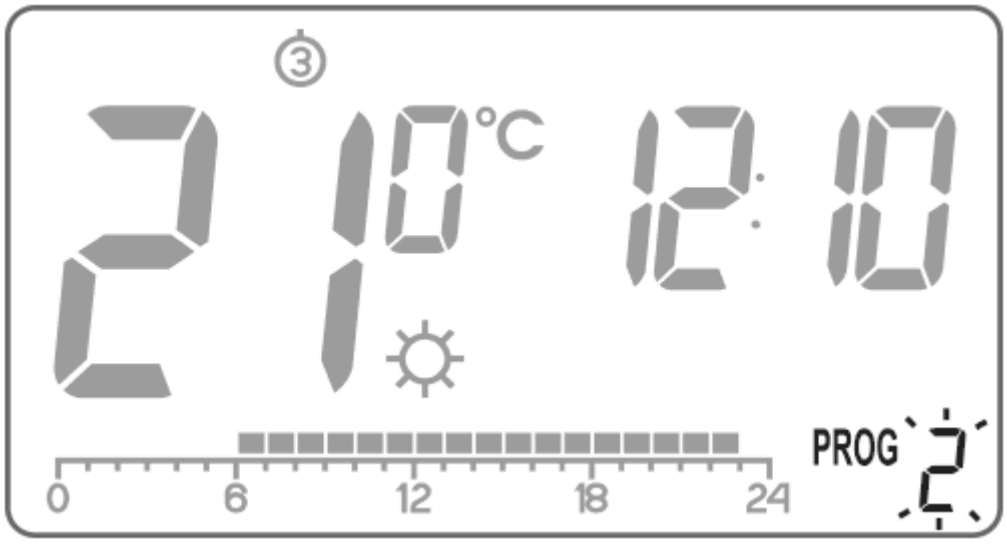
Press the PROG key. Program number segment will start blinking.



Press the key as many times as
required to set the day of the week for the program.



Press the PROG key several times and
select the program number requested. Programs **0-2** are factory-set, programs **3-8** can be edited.

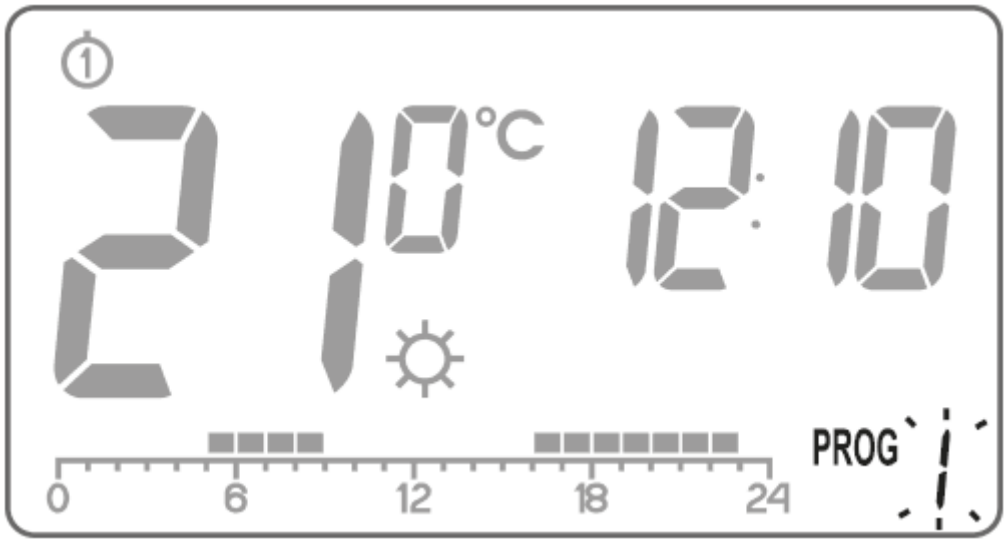


4. Confirm selection pressing the OK key.
5. Repeat the procedure for the following days of the week.

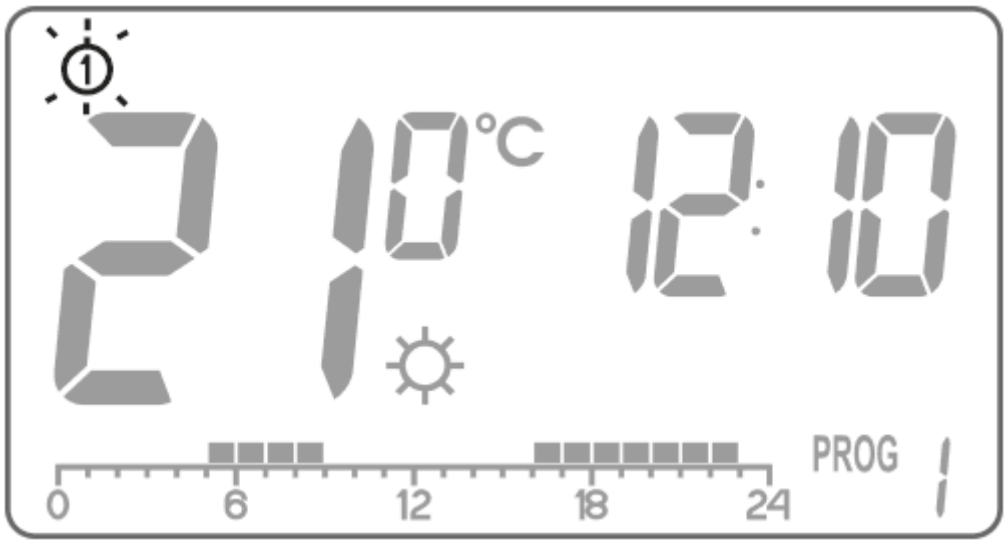
Modyfying user-defined programs

To set the program:

Press the PROG key. Program
number segment will start blinking.



Press the key as many times as required to set the day of the week for the program.



Press the PROG key several times to select the program number required. Programs **0-2** are factoryset,
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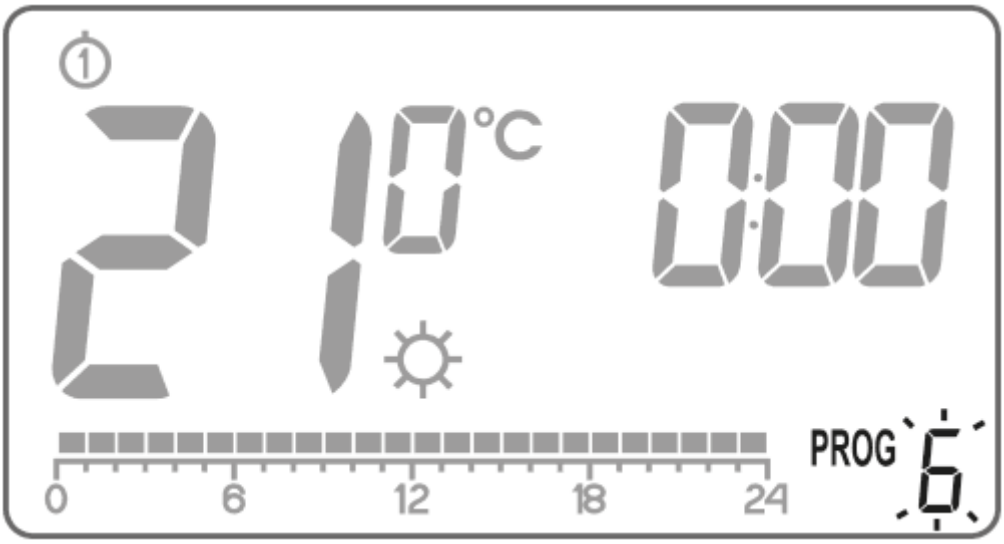
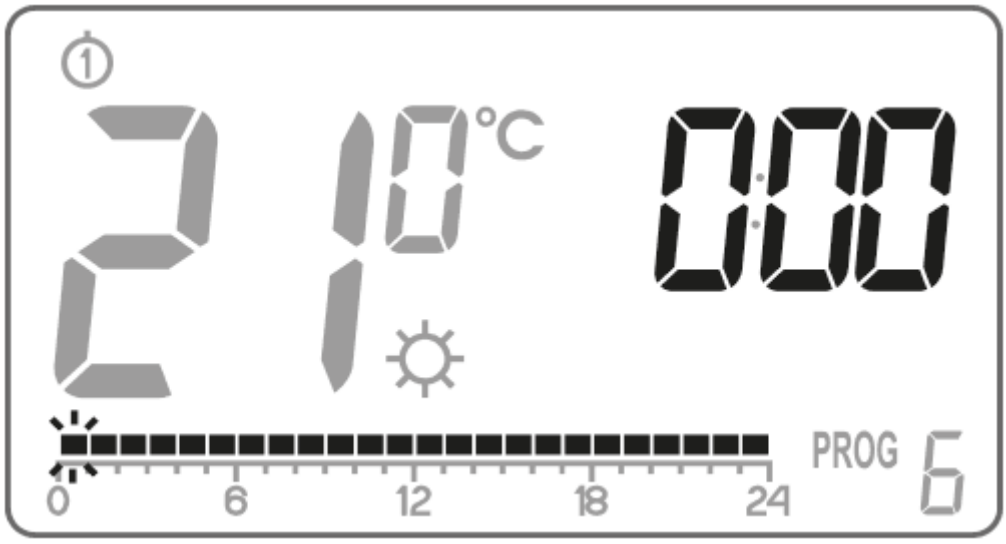
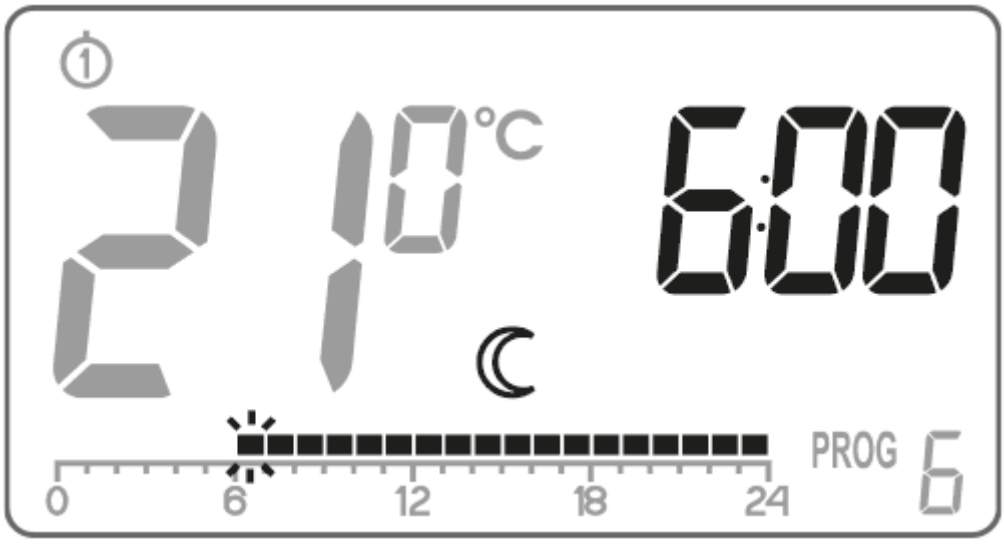


All (24) black rectangles will appear on the timeline. Each of them
symbolises 1 hour. A visible rectangle indicates day temperature set for the given time. If no rectangle is displayed, night temperature is set.

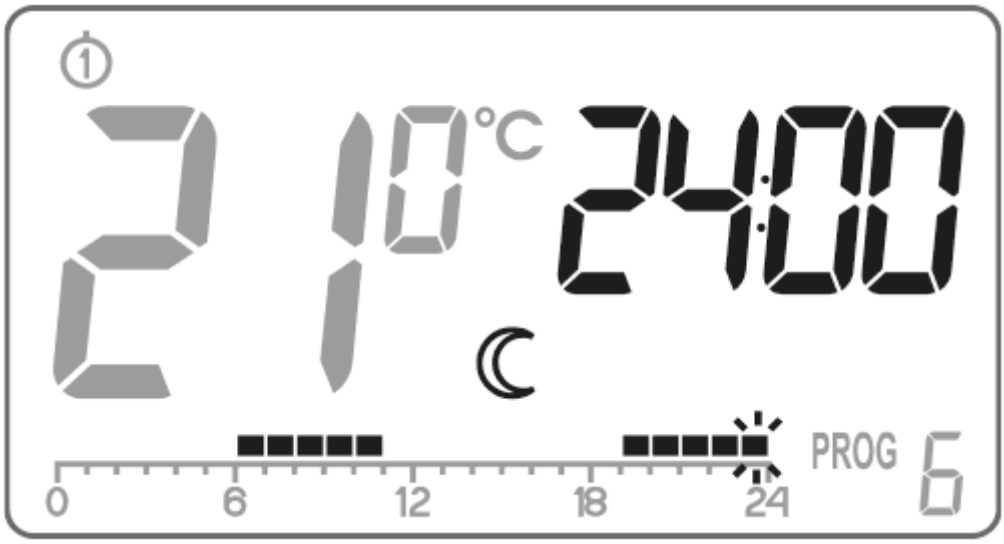
Blinking rectangle indicates the point of the timeline which is modified.



Press the ☼☾ key to select day (rectangle on) or night temperature (no rectangle). Then, select the time interval for the temperature selected with the knob.



By pressing the ☼☾ key and selecting time interval the entire program is modified.



7. Confirm selection with the OK key.

NOTE:

Any modified program for a specific day can also be selected and implemented during another day of the week.

Manual control

Option 1:
If, for some reason, you want to stop the current program at a given moment and extend the day or night temperature, you can do it manually, but for not longer than 24 hours. To do this you should:

Hold the ☼☾ button for 3 seconds. Then, using the knob, select the number of hours of manual operation (24 hours at the most) and confirm the setting using the OK button.

AURATON Libra will wait until you choose one of the two temperatures which it should maintain (day or night). The change is made by using the ☼☾ button or the knob. Confirm the selection using the OK button.

Option 2:
If you want to suspend the execution of a given program, e.g. due to a party lasting longer than expected, but AURATON Libra has already started lowering the temperature for the night (the ☾ symbol has appeared on the display), you should:

Press the ☼☾ button, the display will show the symbols of a ✋ and the ☼. The day temperature will then be maintained until the next temperature change carried out by the program.

To withdraw the above-mentioned action press the OK button. The ☼☾ symbol will disappear from the display.

Similarly, if the program is using the day temperature but you want it to implement the night temperature immediately, you should:

Press the ☼☾ button. The display will show the symbols of a ✋ and the ☾. The night temperature will then be maintained until the next temperature change carried out by the program. To withdraw the above-mentioned action press the OK button. The ☼☾ symbol will disappear from the display.

Anti-freezing temperature

❄

In the event of being away for a long time, it is possible to turn on the anti-freezing temperature mode. It allows you to avoid the unpleasant consequences of water freezing in the heating system by automatically setting the temperature to 7°C. To set the anti-freezing program, simply select **program 0** for the desired day of the week.

Resetting AURATON Libra

To perform a **reset**, remove the battery and wait until the data on the display disappears.

Master reset of AURATON Libra

MASTER RESET is performed by pressing and holding the OK button and at the same time installing the batteries. This causes AURATON Libra to return to its factory settings.

IMPORTANT:

All user-defined programs will be removed!

Configuration settings

Configuration settings are set one after another:

heating mode/
air-conditioning mode

Changes

in hysteresis

Changes
in the delay

Offset
change

Clock
calibration

To enter the edit mode of the configuration settings, hold the PROG and OK buttons simultaneously for 3 seconds until the settings menu is displayed.

Heating mode/air-conditioning mode

AURATON Libra can work in two modes:

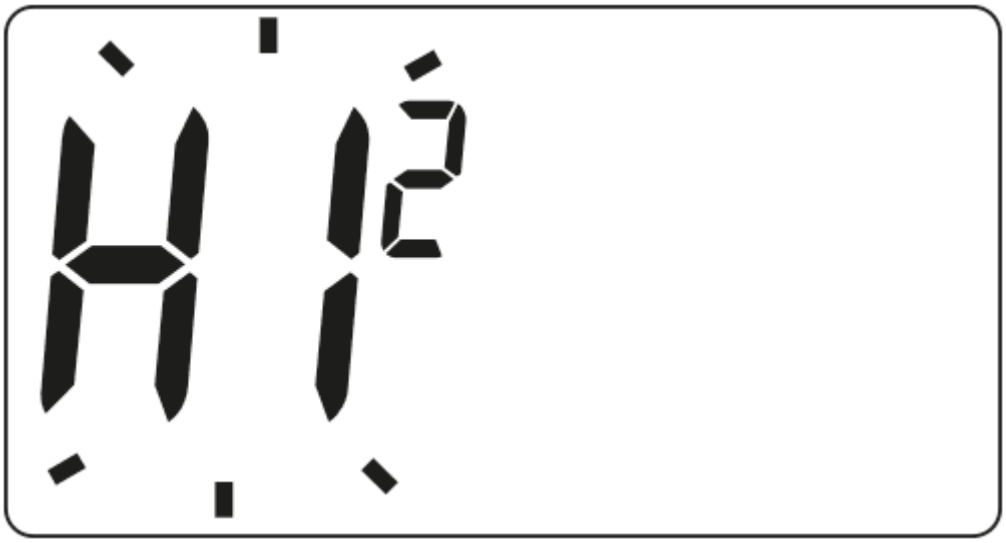
Heating mode (preset) – set it if you want AURATON Libra to cooperate with heating devices.

Air-conditioning mode – set it if you want AURATON Libra to cooperate with air-conditioning devices.

Turn the knob to the left or right to set the required mode. Confirm your choice by pressing the OK button. AURATON Libra will proceed to change the next parameter.

Changes in hysteresis

Hysteresis is supposed to prevent too frequent activation of the actuator due to small temperature fluctuations.
*For example, in the case of **HI 2** hysteresis, when the temperature is set to 20°C, the boiler will be switched on at 19.8°C, and switched off at 20.2°C. In the case of **HI 4** hysteresis, when the temperature is set to 20°C, the boiler will be switched on at 19.6°C, and switched off at 20.4°C.*



The hysteresis change mode is signaled by a flashing HI. Turn the knob to the left or right to set the desired hysteresis.
HI 2 – ±0,2 °C (preset),
HI 4 – ±0,4 °C,
HI P – PWM operating mode (see chapter “PWM operating mode”).

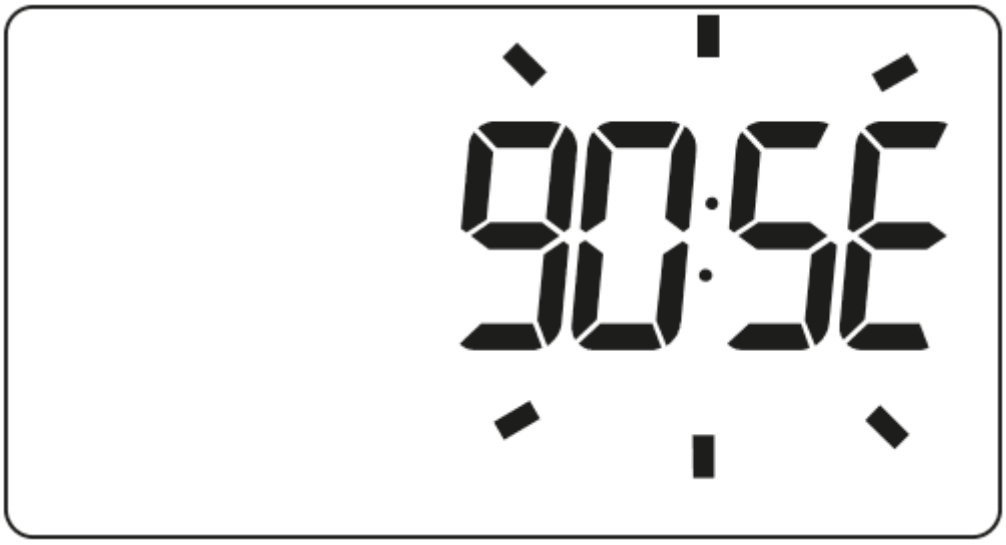
Confirm your choice by pressing the OK button. AURATON Libra will proceed to change the next parameter.

Changes in the delay

The delay prevents too frequent activation of the actuator, e.g. due to temporary drafts (caused by opening the window, etc.).

The delay change mode is signaled by a flashing **90:SE**. By turning the knob left or right, we set the delay.
90:SE – delay of 90 s (preset),
0:SE – no delay

Confirm your choice by pressing the OK button. AURATON Libra will proceed to change the next parameter.

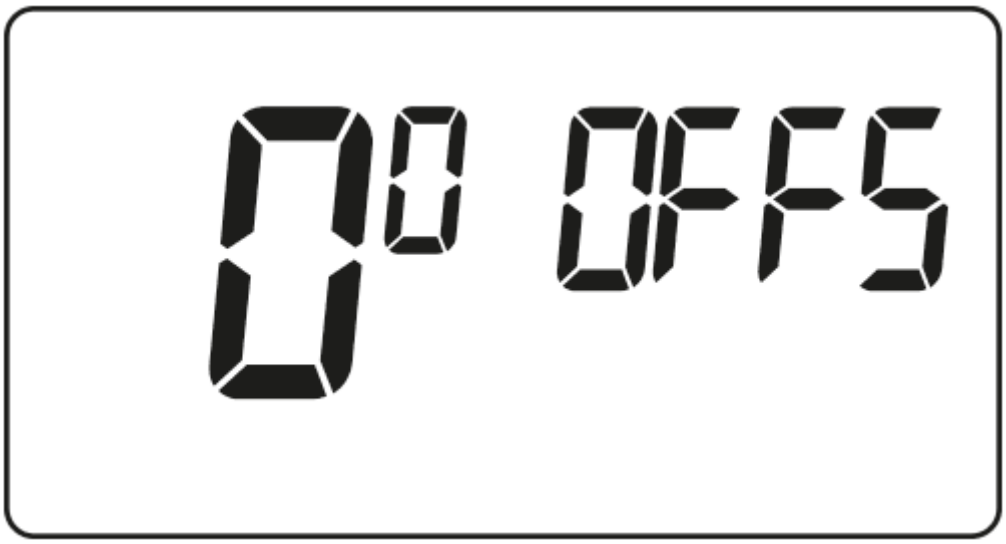


Offset change

Offset allows you to calibrate temperature indications with a tolerance of ± 3 °C. AURATON Libra may for example show that the temperature in the room is 23 °C, while a regular room thermometer next to it may show 24 °C. Changing the offset by +1 degree, will make AURATON Libra show the same temperature as the room thermometer.

The offset change mode is signaled by a flashing OFFS. By turning the knob to the left or right, you can set the desired value in the range from -3.0 to 3.0 (preset – 0.0). Confirm your choice by pressing the

OK button. AURATON Libra will return to the normal operating mode.



IMPORTANT:

If no button is pressed for 10 seconds while changing the configuration settings, AURATON Libra will return to the normal operating mode.

IMPORTANT:

Pressing any function button for the first time always turns on the backlight, and then the function of a specific button.

Clock calibration

This function is used to correct the clock indications in case of any deviations. If the clock is working incorrectly within a week, the extent of incorrect clock indications should be determined. This value should be entered in AURATON Libra in the form of seconds.

Example 1:
After a week of operation, AURATON Libra shows time accelerated by 1 minute and 20 seconds (60 + 20 = 80). In this case you should slow down the clock by setting C -80.

Example 2:
After a week of operation, the clock in AURATON Libra is 2 minutes slow (2 x 60 = 120). In this case you should speed up the clock by setting C 120.

IMPORTANT:

The number of seconds should be determined after one week of operation of AURATON Libra for the clock calibration function to work correctly (7 days = the number of seconds to be added or subtracted, maximum 294 seconds).

IMPORTANT:

If no button is pressed for 10 seconds while changing the configuration settings, AURATON Libra will return to the normal operating mode.

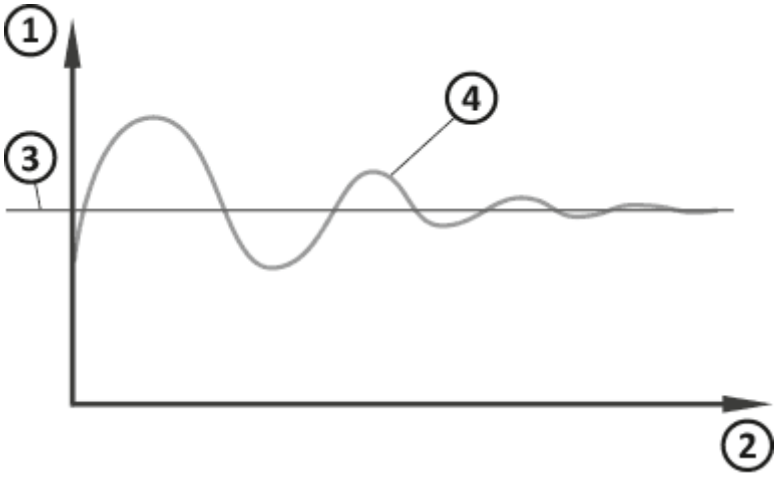
PWM operating mode

(Pulse-Width Modulation)

By changing the hysteresis settings (chapter “Configuration settings”), you can turn on the PWM operating mode. In this mode, AURATON Libra cyclically turns on the heating device in order to minimize temperature fluctuations. AURATON Libra checks temperature rise times and temperature drop times.

Knowing these values makes AURATON Libra turn on and off the heating device in appropriate cycles

to maintain the temperature to the set value as close as possible.



1. Temperature
2. Time
3. Set temperature
4. Room temperature

IMPORTANT:

AURATON Libra can turn on the heating device despite the fact that the temperature in the room is higher than the set temperature in the PWM mode. This is caused by the PWM algorithm aiming at maintaining the set temperature and anticipating the behavior of the thermal system.

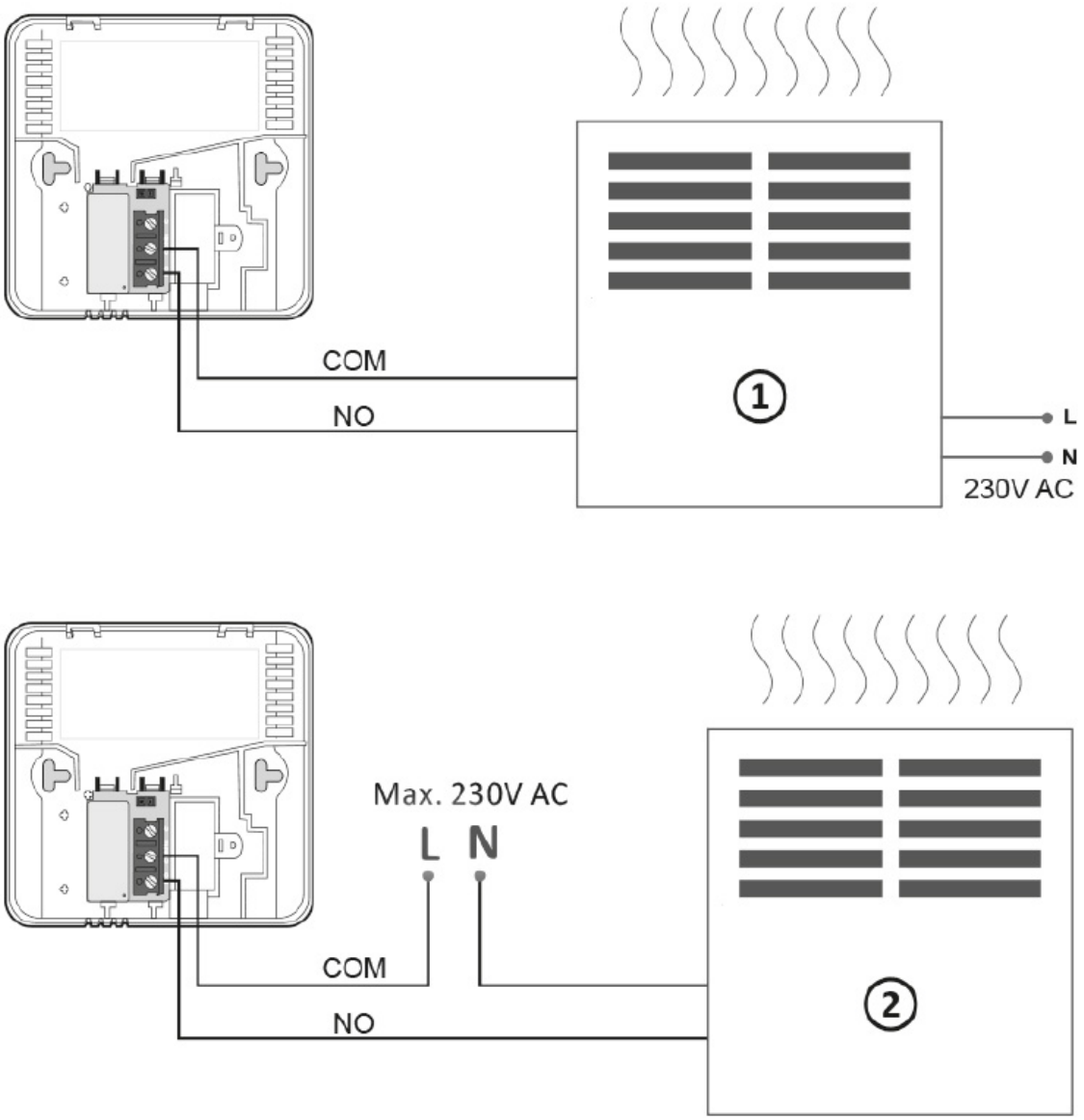
Additional remarks

- At least 30 seconds must elapse between switching the relay off and on again.
- AURATON Libra enables you to turn on or off the control functions at any time (e.g. after a

heating season) by briefly holding down (for about 5 seconds) the OK button (AURATON Libra will only show the current time and room temperature – no “timeline”).

- Pressing any function button for the first time always turns on the backlight, and then the function of a specific button. When using the knob, each step keeps the backlight on.
- When programming any function, not pressing any button for 10 seconds is equivalent to pressing the OK button.

The AURATON Libra connection schematics



1. Heating device *e.g. a gas furnace*
2. lectric heating device (MAX 230 V AC, 16 A)

Cleaning and maintenance

- The outside part the device should be cleaned with a dry cloth. Do not use solvents (such as

benzene, thinner or alcohol).
- Do not touch the device when your hands are wet. It may cause electric shock or serious damage to the device.
- Do not expose the device to excessive smoke or dust.
- Do not touch the screen with a sharp object.
- Keep the device away from liquids or moisture.

Technical specifications

Power supply:	2 x AAA (2 x 1.5 V), alkaline
Working temperature range:	0 – 45 °C
Signalling the working status:	LCD display
Number of temperature levels:	2
Anti-freeze temperature:	7 °C
Temperature measurement range:	5 – 30 °C
Hysteresis:	±0,2 °C / ±0,4 °C / PWM
Relay load capacity:	Max. 250 V AC, max. 16 A
Working cycles:	Weekly programmable
Level of security:	IP20
Dimensions [mm]:	90 x 90 x 36

Disposing of the devices

The devices are marked with the crossed-out wheeled bin. According to European Directive 2012/19/EU and the Waste Electrical and Electronic Equipment Act, this kind of marking indicates that the equipment, after its operational life must not be disposed of together with other waste from households.
The user shall return it to a collection point for electrical and electronic waste.

Hereby, LARS Andrzej Szymanski declares that the radio equipment type AURATON Libra is in compliance with Directive 2014/53/EU and 2011/65/EU. The full text of the EU declaration of conformity is available below in the download area.

Contact and address of the manufacturer:
LARS, ul. Świerkowa 14
64-320 Niepruszewo
www.auraton.pl

Download

- User manual
- Declaration of conformity