theben

EN Digital
clock thermostat

RAMSES 850 top3 OT
8509200

1. General information

- Digital clock thermostat for wall mounting or mounting on flush-mounted box
- The clock thermostat conforms with EN 60730-2-9 if correctly installed
- Communication with heating and power supply via Open-Therm bus
- OpenTherm heating control
- External input to connect an external temperature sensor, floor sensor etc.
- The RAMSES top3 app (for Android, iOS) allows settings via mobile devices
- Direct Bluetooth Low Energy (BLE) connection between app and RAMSES top3 devices
- Optional accessories: Floor sensor (9070321), contact temperature sensor (9070371), temperature sensor (9070459), immersion sensor (9070379)

2. Safety

Assembly and installation should only be carried out by a qualified electrician, somebody who has completed appropriate professional training and has the knowledge and experience necessary to be able to recognise and avoid the potential dangers posed by electricity.

Disconnect the supply voltage before installation/removal.

Prior to commissioning and using the product, read and observe all the operating instructions.

3. Proper Use

- Digital clock thermostat for time-dependent monitoring and control of the room temperature (heating control) in single-family houses, offices, etc.
- Only operate the devices in dry indoor rooms (no bathrooms, etc.)
- Suitable for modulating gas condensing boiler systems and modulating heating systems with OpenTherm interface

4. Installation

You can mount the clock thermostat either on the wall or on a flush-mounted box.

Mounting the clock thermostat

⚠ Protect the clock thermostat from moisture, dust, direct sunlight, thermal radiation and draughts.

➤ Position the clock thermostat on an interior wall, at about eye level (approx. 1.50-1.60 m).
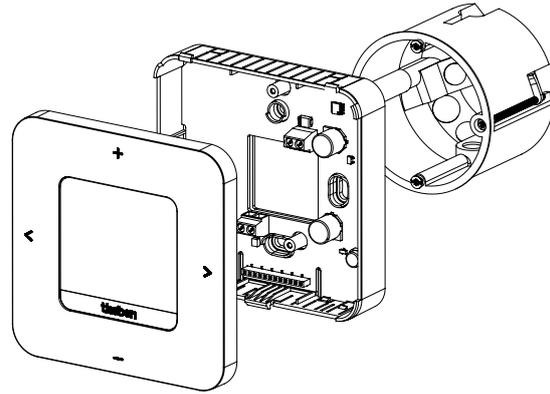
➤ Fix the mounting plate directly to the wall or to a flush-mounted box using the holes.
➤ Assign and wire the conductors.
➤ Tighten the screws.
➤ Put on the clock thermostat.

Dismounting the clock thermostat

⚠ When dismounting, open the device according to the illustration, as it could be destroyed if not done so.

➤ Insert the screwdriver into the opening and push up slightly to open the device.
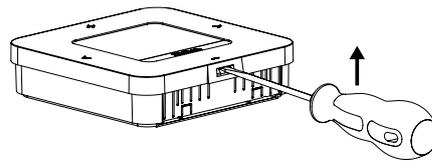
5. Connection

- The power supply of the clock thermostat to the boiler is provided via OpenTherm.
- The two-wire connection (OpenTherm) is not polarised, i.e. the wires can be connected to the boiler as required.

⚠ Do not feed the thermostat cable through the same cable duct as the 230 V mains cable.

⚠ Do not lay the thermostat cable parallel to the power cable.

⚠ The external input is active, therefore do not use external voltage. The connected contact or Theben sensors must be floating.

⚠ Disconnect the boiler from the mains supply before connecting the clock thermostat.

⚠ Without interference, the bus line can be extended up to 50 m.

⚠ Faulty connections will damage the device.

ⓘ External sensors such as a floor sensor (9070321), a temperature sensor (9070459) or floating contacts (e.g. from presence detectors etc.) can be connected to the external input (ext. input).

OpenTherm 🖉

Ext. input

OpenTherm
Bus

6. Settings at the clock thermostat

Symbols on the display

❶ — Operating modes main menu
❷ — Settings submenu
❸ — Settings submenu et sqq.
❹ — Week days 1−7 (Monday − Sunday)
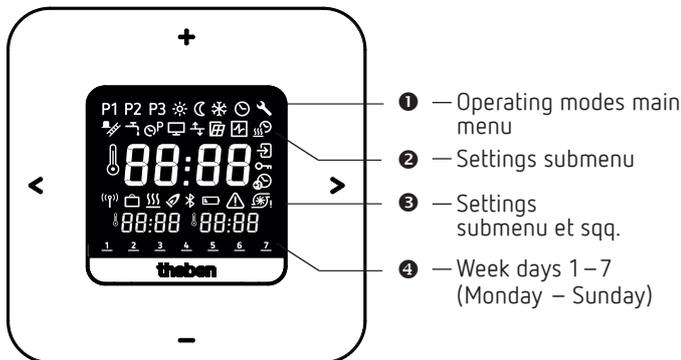
< > · Browsing the display
· Confirm selection (>) or go back one step (<)

+ / − · Set values
· Select using +

7. Menu

Operating modes main menu

P1 P2 P3 Weekly programs P1−P3
☀ Comfort temperature
☾ Setbacktemperature (Eco)
❄ Frost protection temperature
🕐 Set date and time
🔧 Service/Settings

Settings submenu

📊 Chimney sweeping function
🚰 Service water control
⊙P Change weekly programs P1−P3
🖥 Customise display
↨ Set wall compensation (offset)
🔲 Select window detection
🔲 Select controller
📶 Set the optimisation function
⤵ External input
🔑 Enter/change PIN
🔄 Set summer/winter time
🔄 Set pump protection
⚠ Fault
🔵 Bluetooth
〽 Heating active
🏠 Holiday program

How does my clock thermostat work?

Your clock thermostat regulates your room to the desired temperature at set times. You can set 3 weekly programs (P1 - P3). In addition, you can define and activate the temperatures of the operating modes (comfort, setback and frost protection function):

- Comfort temperature: is usually used for the day, i.e. when you are present.
- Setback temperature (Eco or energy saving temperature) for the night.
- Frost protection temperature: is used for periods of prolonged absence (e.g. holidays). The temperature is just high enough to protect the heating system from frost.

> **TIP**
> The easiest and quickest way to operate the clock thermostat is with the RAMSES top3 app!

8. Initial operation

ⓘ The summer/winter time rule for Central Europe is preset.

After the RAMSES 850 top3 OT has been mounted and connected, the date/time and - if desired - a different summer/winter time must be entered.

Enter date and time

ⓘ The date and time setting can be skipped when connecting to the app. The clock thermostat then adopts the time and date of the mobile device.

➤ Use +/- to enter the desired hour.
➤ Confirm with >.
➤ Use +/- to enter the desired minute.
➤ Confirm with >. The year appears.
➤ Confirm the year with >. The two digits for the month on the right flash.
➤ Enter the month with +/-.
➤ Confirm with >.
➤ Enter the day with +/-.
➤ Confirm with >.

The device is now ready for operation. The display shows the weekly program P1, the actual temperature, the set temperature at the bottom left and the current time at the bottom right.

ⓘ Date and time can also be changed in the 🕐 main menu.

Enter a different summer/winter time

You can change the summer/winter time under Settings 🔧 → 🕐 (see Page 6).

Change set temperature briefly

ⓘ The changed set temperature is not saved in the program and will be replaced by the next programmed switching time. This also applies when the programs P1 - P3 are active.

If the comfort, setback or frost protection temperature is active, the changed set temperature applies permanently.

➤ Press > to access the main menu.
➤ Press + here. The set temperature flashes.
➤ Use +/- to enter the desired set temperature.
➤ Confirm with >.

1. Main menu: Set/change operating modes

P1 P2 P3 ☀ ☾ ❄ 🕐 🔧

➤ Scroll through the main menu with > (or back with <).
➤ Use + to select the desired function.
➤ Change the value with + or −.
➤ Confirm with >.

Programs P1 − P3
There are 3 preset weekly programs available:

P1		1	2	3	4	5	6	7
06:00 (21 °C)		←──────────→						
22:00 (17 °C)		←──────────→						
07:00 (21 °C)							←───→	
23:00 (17 °C)							←───→	

P2		1	2	3	4	5	6	7
06:00 (21 °C)		←──────────→						
08:00 (17 °C)		←──────────→						
16:00 (21 °C)		←──────────→						
22:00 (17 °C)		←──────────→						
07:00 (21 °C)							←───→	
23:00 (17 °C)							←───→	

P3		1	2	3	4	5	6	7
12:00 (21 °C)		←──────────→						
20:00 (17 °C)		←──────────→						
07:00 (21 °C)							←───→	
22:00 (17 °C)							←───→	

➤ Select the desired programme with >.
➤ Confirm with +.
➤ If you want to change the program (switching times), you can do this under Settings 🔧 → 🕐ᴾ.

Comfort, setback and frost protection temperature
You can select these 3 operating modes and change them if necessary.

➤ Select the desired preset program with >.
➤ Confirm with +.
➤ Use + or − to set the desired value.
➤ Confirm with >.

2. Submenu: Settings

🖊 🔧 🕐ᴾ 🖥 ➕ 📅 📆 ⚙ 🔄 🔑 🔒 🔧 ⚠ 🔋 🔵 ♨ 🏠

In the submenu **Settings** 🔧, programs, display, wall compensation, PIN, controller, pump protection, etc. can be set.

➤ Press > 2 x and go to Settings 🔧 with >.
➤ Confirm with +. The flashing Bluetooth symbol appears.

Bluetooth

When the Bluetooth symbol ✴ flashes, the clock thermostat can connect to the **RAMSES top3** app on your smartphone or tablet (see Page 7).

ⓘ If the Bluetooth symbol appears permanently in the display, the device is connected to the app.

ⓘ If the button − is pressed for 8 s, all connection data will be deleted.

Or skip Bluetooth and

➤ press >. You can now enter the 4-digit **PIN** ⚏ (default: 0000) using + or −.
➤ Confirm each digit with >. You will then be in the Settings submenu.

ⓘ If you forgot the correct PIN, press + for 30 s (reset). The PIN is now set to 0000 for 5 min and you can enter your password. If you do not enter the password during this period, the old password becomes active again.

Only now you can change the following functions in the Settings submenu ✎ :

1. Change/check/delete weekly programs P1 - P3 (P4)

The preset programs can be changed and deleted.

ⓘ 42 switching times can be changed.

ⓘ If the domestic water control function is activated, program P4 appears.

If you want to change the program or switching times, you can do this under Settings ✎ → ⊙P.

➤ Use > to go to Settings. The menu ⊙P flashes.
➤ Use + to select the program P1, P2 or P3.
➤ Confirm with >. The display shows, for example, P1 .

Check/change switching times of P1

➤ By pressing > you can check the switching times that have been entered.
➤ Use + or − to change the values and confirm with >.
➤ Press + or − 2 x and select the switching time, then enter the desired value with + or − and confirm with >.
➤ Use < > to change the time, the day of the week or the temperature.
➤ Carry out the steps as described above for programs P2, P3.
➤ Use < to exit the menu P1.

Delete switching times

➤ Select the switching time to be deleted and go to --:-- with + or - (between 23 : xx and 00: xx o'clock).
➤ Confirm with >. The switching time is deleted.
➤ To delete further switching times, carry out the above steps.

2. Chimney sweeping function

This function (under Settings ✎ → 🧹) is used to carry out the legally required emission measurements. For transmission to the OpenTherm bus, there are two activation levels that can be switched by commands (full load 100%, partial load 50%, off) (default off).

➤ Use +/− to switch the function on/off for max. 30 min (On, Off).

→ After 30 min, it switches off automatically.
➤ Confirm with >.

3. Domestic water control (process water control)

You can enable domestic water control under Settings ✎ → ⬛. (default: off)

➤ Use +/- to switch the function on or off (On, Off).
➤ Confirm with >.
→ If you selected **On**, P4 appears under Weekly programs.

4. Customise display

You can customise your display (in operating mode) under Settings ✎ → 🖥 .

➤ Rotate using + or − actual temperature, set temperature and time to obtain the desired display.

ⓘ You can also adjust the display brightness with + or − (from - to ----) and set the backlight duration (e.g. 0:30 min:sec).

5. Set wall compensation

If the installation location is unfavourable, this may lead to variations in temperature between the detected and actual room temperature (e.g. at an outer wall that is too cold or an inner wall that is too warm). This difference can be corrected by using the wall compensation.

➤ Under Settings ✎ → 🌡 use + or − to adjust the measured temperature by − 3 °C to + 3 °C.
➤ Confirm with >.

6. Select window detection

If this function is active, the clock thermostat detects the temperature drop if the window is opened at a cold outside temperature. The heating process is stopped for 15 min to save energy (it will be regulated to frost protection temperature).

➤ Under Settings ✎ → 🪟 use + or − to switch the function on or off (On, Off).
➤ Confirm with >.

7. Select controller

This function allows you to select 2 different thermostats (depending on the set heating):

1 → Room thermostat (PI controller) (with room-guided control)
2 → Outside temperature controller (with weather-guided control)

➤ Under Settings ✎ → 🎛 use + or − to select thermostat type 1 or 2 (default: PI controller).

Room thermostat

The heat demand is calculated from the difference between the room set temperature and the actual room temperature. It is composed of a P and an I share. The room thermostat controls directly to the set room temperature, i.e. in relation to the room temperature.
- P-band: Range for the set/actual temperature; difference in which the CSP (control setpoint) is calculated proportionally.
- I-share: Time in minutes with which the requested flow temperature is increased or decreased by 1 °C within the modulation range.

Example (P-band 1.6 K)

Room temperature
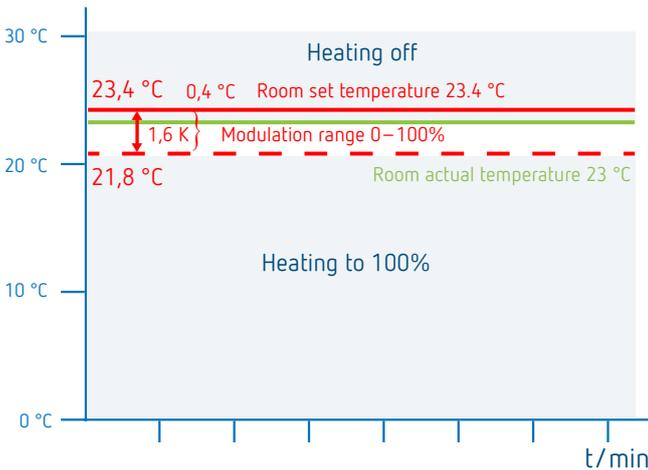
Setting ranges:

P-band (0.5 K-2.5 K) control range (default: 1.6 K)
I-share (1-10) Integral share in minutes (default: 10):
  − Integral share small → fast regulation of the control deviation
  - Integral share large → slow regulation of the control deviation

Outside temperature controller

The setting of the base and end point always refers to a room set temperature of 21 °C. With the shift, a corresponding offset is calculated to the CSP for a different room set temperature.

Setting ranges:

Base point: 10−40 °C
End point: 25−90 °C
Shift: 2−20 K/°C
Heating off at 10−25 °C
Room influence: 0−20 K/°C

With the outside temperature controller, the temperature is determined by a preset heating curve. The base and end points of this curve can be set.

At the **setback temperature** level, the curve is shifted in parallel by an also adjustable value.

Outside temperature
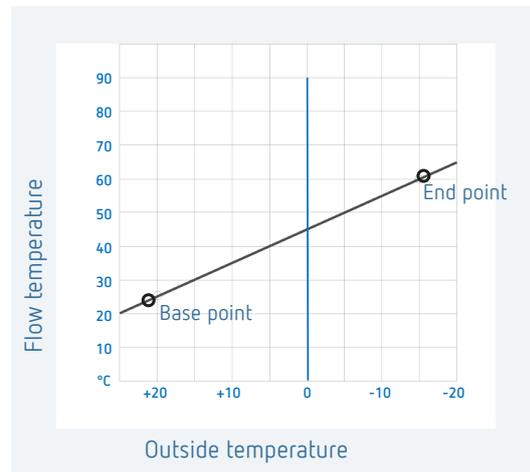
Set the heating curve

With outside temperature guided control, the base point and end point of the curve are set. For a temporary temperature change, the values at the base and end point can be adjusted (see illustration).

	Setting range	Factory settings
Base point	10−40 ˚C	+ 25 ˚C
End point	25-90 ˚C	+ 60 ˚C
P-reduction offset	5−35 K	25 K
Frost limit		+ 3 °C

Set parameters for the heating system

Heating type		Flow/return temperature
Radiator heating	High temperature	90/70
Radiator heating	Medium temperature	70/50
Underfloor heating	Lowest temperature	40/30

Heating type	Heating curve base point	Heating curve end point	P –adjustment/ reduction	Frost line
90/70 system	30 ˚C	85 ˚C	15 ˚C	3 ˚C
70/50 system	25 ˚C	75 ˚C	15 ˚C	3 ˚C
40/30 system	25 ˚C	45 ˚C	15 ˚C	3 ˚C

Change/offset the heating curve temporarily

In case of an offset of the desired room set temperature, a corresponding offset for the flow set temperature will be calculated. The set offset determines the value by which the flow set temperature will be shifted per degree of difference from the room set temperature of 21 °C.

Example

At an outside temperature of − 5 °C, a flow set temperature of e.g. 50 °C will be calculated for the settings of base point and end point, in order to reach the room set temperature (reference temperature) of 21 °C. However, if the desired room set temperature is at 19 °C, at a set offset of 10 K/°C, a flow set temperature of

flow set temperature = 50 °C − (21 °C−19 °C) x 10 K/°C = 50 °C − 20 K = 30 °C
will be calculated.

Switch off the heating (heating off at ...)

With outside temperature guided control, you can program the controller so that the heating is switched off at a set outdoor temperature.

Set the room influence

The flow temperature can be adjusted if there is a large deviation between the room temperature and the set temperature.

```
Offset flow temperature       = Δ T_v
set room influence = PI
Set point value of room temperature   = T_R set
Actual value of room temperature      = T_R act
Δ Tv        = PI (T_R set − T_R act)
E.g.:       T_R set = 20 °C   T_R act = 18 °C   PI = 3
Δ Tv        = 3 x ( 20 °C − 18 °C) = 6 K
```

→ The flow temperature is increased by 6 K.

ⓘ The higher the selected room influence, the greater the influence of the room temperature on the flow temperature.

8. Set the optimisation function

The optimisation function allows you to achieve a certain room temperature at a desired switching point. It is indicated how many minutes earlier the heating starts. This time applies per K of temperature difference between actual temperature and desired set temperature.

Example

At 06.00 a.m. in the morning, a change in the bathroom is programmed from reduction (17 °C) to comfort temperature (23 °C).
Without optimisation function, the room thermostat enables the heating request for the bathroom at 06.00 a.m. Depending on the size of the room and the installed heating system, the bathroom reaches the desired 23 °C at 6.30 a.m., for example.
With a set optimisation of 5 min/K, the thermostat sends the heating request earlier, as follows:

```
Set temperature at 06.00 a.m. → 23 °C
Actual temperature → 17 °C
i.e. Delta T = 6 K
6 K * 5 min/K = 30 min
```

The controller sends the heating start 30 min. earlier and reaches the setpoint temperature at 06.00 a.m.

ⓘ The optimisation value depends on the spatial and heating conditions.

➤ Under Settings ◩ → 🌡 use + or − to select the optimisation function.
➤ Use + or − to set the time from 1 min to 60 min or Off and confirm with >.

9. External input

The external input 🔌 can be configured for various external sensors.

⚠ The external input is active, therefore do not use external voltage. The connected contact must be floating.

➤ Under Settings ◩ → 🔌 use + or − to select the external input.
➤ Use + or − to set one of the 6 options and confirm with >.

The following options are available with the individual sensors/contacts:

0 → inactive
1 → floor
2 → external temperature sensor
3 → presence detector
4 → window contact
5 → telephone contact

Floor	Temperature limit	Floor temperature restriction, floor temperature selection adjustable between 20 °C and 50 °C; floor sensor (9070321) ⓘ No safety temperature limiter, but device type 1 B in accordance with EN 60730-1.
External temperature sensor	no options	The internal temperature sensor will be switched off; external temperature sensor (IP 65) (9070459).
Presence detector	Temperature selection	This temperature is used for control if the HVAC output of the presence detector is switched. If no presence is detected, the set program is used for control.
Window contact	no options	As long as the window contact is open, the thermostat controls to frost protection temperature.
Telephone contact	Temperature selection	Select temperature for the controller if the telephone contact is switched.

10. PIN

This function can be used to assign a new PIN.

ⓘ The factory setting for the PIN is 0000.

➤ Under Settings ◩ → 🔒 use + or − to select the PIN.
➤ Enter the 4-digit PIN with + or −.
➤ Confirm each digit with >.

11. Change summer/winter time

Here you can set a different summer/winter time.

ⓘ The summer/winter time rule for Central Europe is preset.

➤ Under Settings ◩ → 🕐 use + or − to select the summer/winter time from 0 − 3.

You can choose between

0 → **Inactive** (no summer-winter time changeover)
1 → **Central Europe** (default):
   Changeover from winter time to summer time on the last Sunday in March at 2 o'clock (at 2 o'clock the clock is set forward by one hour to 3 o'clock)

Changeover from summer time to winter time on the last Sunday in October at 3 o'clock (at 3 o'clock the clock is set back one hour to 2 a.m.)

2 → **Western Europe**:
Changeover from winter time to summer time on the last Sunday in March at 1 o'clock (at 1 o'clock the clock is set forward by one hour to 2 o'clock)
Changeover from summer time to winter time on the last Sunday in October at 2 o'clock (at 2 o'clock the clock is set back one hour to 1 a.m.)

3 → **Eastern Europe**:
Changeover from winter time to summer time on the last Sunday in March at 3 o'clock (at 3 o'clock the clock is set forward by one hour to 4 o'clock)
Changeover from summer time to winter time on the last Sunday in October at 4 o'clock (at 4 o'clock the clock is set back one hour to 3 a.m.)

12. Set pump protection

The pump protection is a function that switches 1 x per week to protect the pump from seizing up.

ⓘ If pump protection is activated, the heating circuit pump is switched on for one minute every Wednesday at 11:30 a.m.

➤ Under Settings ◪ → ▦ use + or − to select On or Off (default).

13. Holiday program

The holiday program can only be set via the RAMSES top3 app. If the holiday program is set, the display of the clock thermostat shows the symbol ▣ .

Fault

In the event of a fault or error, the error code flashes on the display. The warning triangle ⚠ also flashes. All other display symbols are cleared.

Errors 0 to 255 are boiler-specific error messages from the boiler via the OT bus. Other errors are:

Error code	Explanation
301	Boiler reports general sensor breakage via OT bus
302	Boiler reports sensor breakage of the external temperature sensor via OT bus
303	Boiler reports "Low water pressure" via OT bus
304	Boiler reports "Gas / flame fault" via OT bus
305	Boiler reports "Air pressure fault" via OT bus
306	Boiler reports "Water over temperature" via OT bus
307	Boiler reports "Lockout" via OT bus
308	Boiler reports bus error via OT bus
401	Error external temperature sensor, sensor breakage
402	Error external temperature sensor, sensor short circuit
403	Error room temperature sensor, sensor breakage
404	Error room temperature sensor, sensor short circuit
405	Error internal temperature sensor, sensor breakage
406	Error internal temperature sensor, sensor short circuit

➤ To clear the error, press the > button. The main menu appears and the error will be cleared.
➤ Or press the +/- buttons and the error will also be cleared.
ⓘ If the error is not fixed, it appears again in the auto-menu.

Display symbol "Heating active"

The symbol ♨ appears when RAMSES top3 sends heating information to the heat generator.

Display symbol "Flame"

This symbol 🔥 appears when the burner bit is set (heating is to take place).

Reset

➤ Press + for 30 s. The clock thermostat takes over the last inputs of P1-P3, comfort, setback and frost protection temperature as well as the device name.

9. Settings via the RAMSES top3 app

Connect the clock thermostat with the mobile end device and the RAMSES top3 app

The clock thermostat can be controlled via Bluetooth using the app. The smartphone or tablet will be connected to the clock thermostat via the integrated Bluetooth module.

➤ Download the **RAMSES top3** app from the App Store or Google Play Store.

➤ Use > to go to the submenu **Settings** ◪ on the clock thermostat. The flashing Bluetooth symbol ⓑ appears.
➤ Open the **RAMSES top3** app.
The app searches for the available devices; the list of available devices appears.
➤ Select the desired device and confirm with OK.

RAMSES top3 app

Settings, device management
App info, operating instructions

Quick selection

Device list

Set temperature, adjustable in increments of 0.2 °C (2 °C − 30 °C)

Info: device type, external input, serial number, etc.
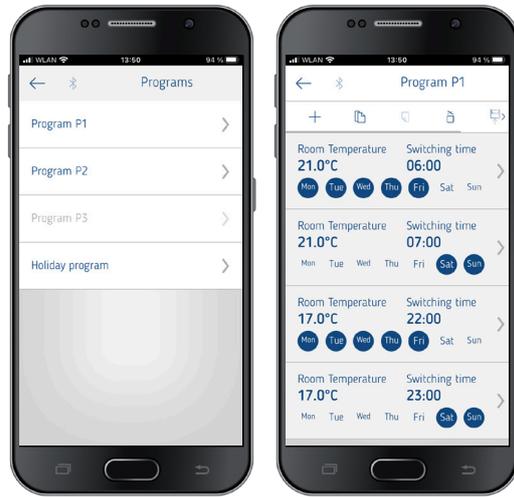
Quick selection

In the quick selection you can choose between comfort temperature and setback temperature (Eco).

Programming of switching times

Operating modes:
− Programs P1 − P3
− Comfort, setback, frost protection temperature

Quick selection
Comfort mode* − eco mode*
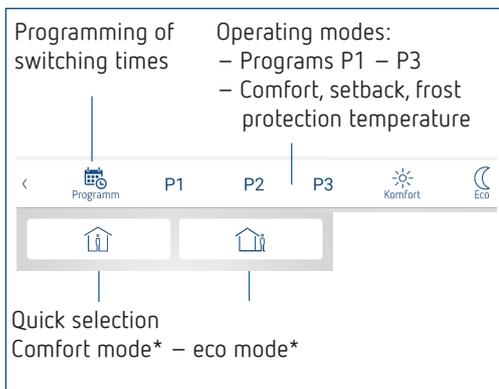
*until the next switching time

Check, change, delete programs P1−P3 (P4)
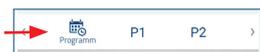
Under **Program** you can
- check, change or delete the pre-programmed weekly programs P1 − P3 and P4 (domestic hot water).
- You can create a new program or
- save a program as a favourite, import it or
- additionally create a holiday program.

ⓘ A maximum of 24 switching times can be set per program, a total of 42.

ⓘ During programming, selected days are shown like ⬤, and unselected days like ▢.

The created programs are automatically sent to the clock thermostat.

Create a holiday program

In order to create a holiday program and activate it,
➤ slide the controller to "Activate".
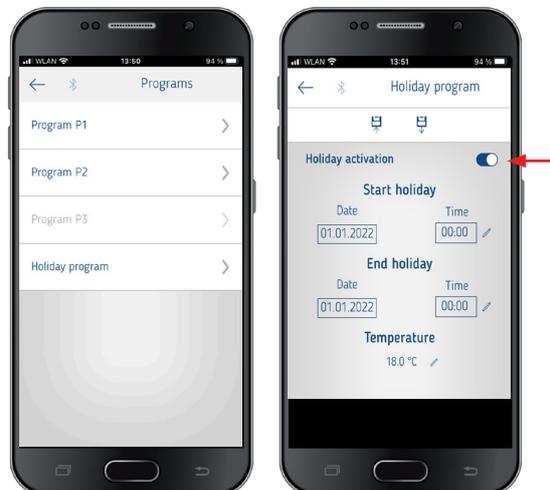
After a holiday program has been created via the app, the clock thermostat receives the following information:
- active / not active
- Start date and end date with time
- Room set temperature during holiday time

ⓘ Weekly programs can be stored in the RAMSES top3 app and recalled.

Domestic hot water program P4

Under Progam, you can also find and change the **Domestic hot water program**. You can choose between
– Domestic hot water set (temperature)
– Switching time and
– Domestic hot water deactivated, activated and
– Select the days of the week
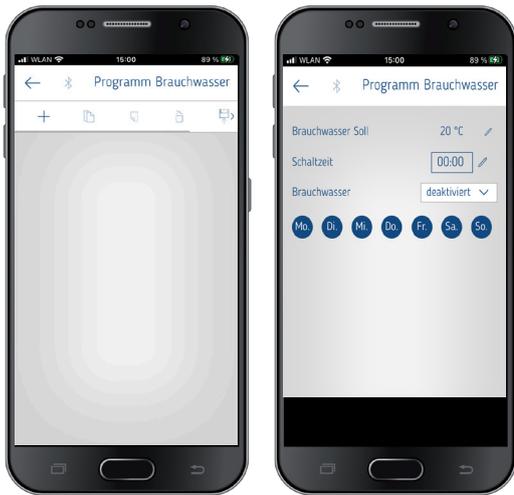
Settings

➤ Press **Settings**.
→ The window will open.

ⓘ The functions in this submenu have to be set by the quali-fied electrician.

In the settings, language, temperature (comfort, eco (setback), frost protection), wall compensation, optimisation, etc. can be set.

1. Set wall compensation

See Page 4 above.

2. Domestic hot water (service water)

You can switch the domestic water control on or off (default: Off).

ⓘ If you have selected **On**, the weekly program for domestic hot water appears as P4 in the menu ⊙ᴾ.

3. Set controller

There are 2 controller types to choose from (when connecting a modulating heater):

1 – Room thermostat (PI controller), see Page 4
2 – Outside temperature controller, see Page 4

4. External input

The external input can be configured for various external sensors, see Page 6.
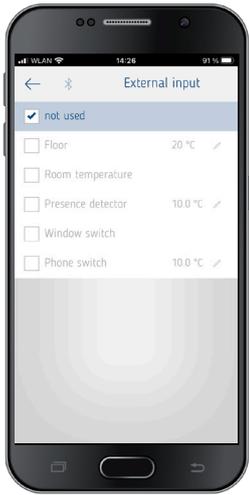
Error indicator on RAMSES top3

ⓘ If the external input is set to "floor" or "room temperature", an appropriate temperature sensor has to be connected. If this sensor is missing, an error indicator flashes in the device. The same error also appears in the Start menu in the app.

5. Set optimisation

The optimisation function allows you to achieve a certain room temperature at a desired switching point, see Page 6.

6. Chimney sweeping function

This function serves to carry out the prescribed emission measurements. For the transmission to the OpenTherm bus you can choose between full load
100%, partial load 50%, or off) (default off).

7. Set summer/winter time

ⓘ The summer/winter time rule for Central Europe is preset (see also page Page 7).

You can choose between

0 → Off (no summer-winter time changeover)
1 → Central Europe (default)
2 → Western Europe
3 → Eastern Europe

8. Set window detection

Here you can choose between On and Off, for more information see Page 4.

9. Set pump protection

You can switch the pump protection on or off, see Page 7.

10. Set TSP (Transparent Slave Parameters)

Depending on the OpenTherm heating system connected, various TSP parameters can be set (see the corresponding instructions for the OpenTherm heating system).

11. PIN

This function allows you to assign or change a new four-digit PIN.

12. Factory settings

Here you can reset all functions to the factory settings.

13. Set display

You can adjust the appearance of your display, see also Page 4.
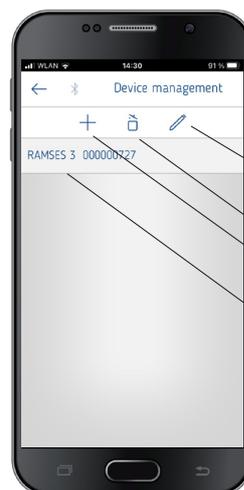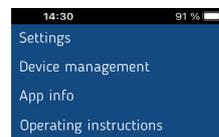
Device management

- Edit name
- Delete
- Search for new devices ...
- Device list

In the menu **Device management**, the name can be changed, deleted, etc.
Use + to search for other RAMSES top3 devices.

Info ⓘ

In the **Info** menu you will find all the information about your RAMSES top3 device (device type, serial number, etc.).

10. Troubleshooting

Fault	Rectification
Four-digit PIN (password) forgotten	You can force a reset of the device (press + for approx. 30 s). Afterwards, the device PIN is set to 0000 for 5 minutes. During this time you can change the password. After the 5 minutes, the old password or the newly set password is active.
No Bluetooth connection to the device	Make sure that the device is in pairing mode ▧ (only when connecting for the first time, see Page 7), is within range and that your terminal device has Bluetooth enabled. If the problem persists, switch Bluetooth off and on again on your terminal device. If you have problems again, restart your terminal device.
Heating does not occur at the desired time.	Check your active program (P1, P2 or P3) (time and date of the device, switch-on and switch-off times entered correctly, see Page 8). Check the setting of your controller (room thermostat, outside temperature controller, see Page 9). Or check the optimisation function (see Page 6).
Log recording does not work. If you use an iPad, the log recording can no longer be displayed when swiping from the left.	Deactivate the "Stage Manager" function in the settings. The log recording is displayed again by swiping.

11. Technical data

Supply voltage	OT bus (approx. 18 V)
Standby power	approx. 50 mW
Controller type	modulating controller, works with OpenTherm protocol (OpenTherm V4.0 with SmartPower)
Power reserve	4 hours
Mode of operation	Type 1 in accordance with EN 60730-1
Operating temperature	+ 0 °C ... + 50 °C
Temperature setting range	+ 2 °C ... + 30 °C in increments of 0.2 °C

Memory locations	42
Protection rating	IP 40 in accordance with EN 60529
Protection class	III in accordance with EN 60730-1
Rated impulse voltage	0.8 kV
Pollution degree	2
Software class	A
Radio frequency/transmission power	BLE 2.4 ... 2.48 GHz; max. 2 dBm Range in free field: approx. 40 m

Theben AG herewith declares that this type of radio installation complies with Directive 2014/53/EU. The complete text of the EU Declaration of Conformity is available at the following Internet address: www.theben.de/red-konformitaet

Cleaning and service

➤ Only use a dry, soft cloth to clean the device surface.
➤ Do not use any cleaning agents or solvents.

Disposal

 Dispose of the device separately from domestic waste at an official collection point.

12. Dimensions diagrams
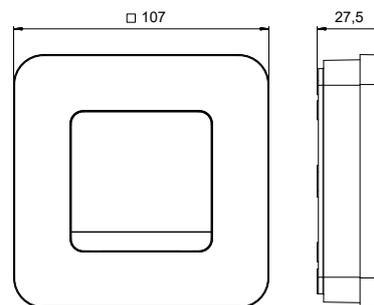
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