



## 1. Information about this manual

Please read this manual completely and carefully before starting to use the device. The manual contains important information about the intended use of the device. Especially observe the safety notes. Keep the manual for later consultation. If you hand over the device to other persons for use, please hand over this manual as well.

### Symbols used:

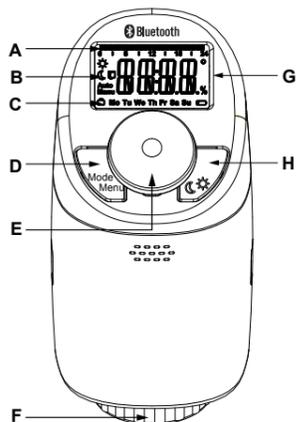
Attention! This indicates a hazard.

Note. This section contains important additional information.

## 2. Package contents

- 1x radiator thermostat
- 1x adapter Danfoss RA
- 1x adapter Danfoss RAV
- 1x spigot extension Danfoss RAV
- 1x adapter Danfoss RAVL
- 1x support ring
- 1x nut M4
- 1x cylinder head screw M4 x 12 mm
- 2x 1.5 V mignon/LR6/AA
- 2x operating manual (English and German)

## 3. Device overview



- A** Bar chart of programmed heating phases
- B** Eco/comfort temperature () , open-window function () , manual mode (**Manu**) , automatic mode (**Auto**)
- C** Holiday function () , week day, empty battery symbol ()
- D** Mode/Menu button: Switch between auto mode, manu mode and holiday function (press button briefly); open setup menu (press button for at least 3 seconds)
- E** Control wheel: Change settings, e.g. temperature (turn the control wheel), activate the boost function and confirm/save settings in the menu (press control wheel briefly)
- F** Union nut for fitting on the heating valve
- G** Display of temperature, time and date, menu options, functions
- H** button: Switch between eco and comfort temperature

## 4. Function

The electric BLUETOOTH® Smart Radiator Thermostat offers individual control of the room temperature from a user-friendly and intuitive app. The app "calor BT" is available for free for iOS and Android smartphones. The radiator thermostat enables the regulation of single radiators or the room temperature.

Thanks to pre-programmed or individually tailored heating and cooling phases, the desired temperature can be comfortably adjusted. The radiator thermostat fits to all common radiator valves and is easy to mount - without having to drain any water or intervene in the heating system. The additional boost function enables quick, short-term radiator heating by opening the valve for 5 minutes. This immediately brings a comfortable warming to the room. Thanks to the automatic "open window detection", additional energy can be saved during ventilation.

## 5. Intended use

The radiator thermostat is used to control a conventional radiator valve. Only operate the device in inside rooms and avoid the influence of moisture, dust and sunlight or external heat radiation. Using the device for any purpose other than that described in this operating manual does not fall within the scope of intended use and shall invalidate any warranty or liability. This also applies to any conversion or modification work.

The device is intended for private use only.

eQ-3 AG hereby declares that this device complies with the essential requirements and other relevant regulations of Directive 1999/5/EC. You can find the full declaration of conformity at [www.eQ-3.de](http://www.eQ-3.de).

## 6. Safety instructions

- The device is not a toy; do not allow children to play with it.
- Do not leave packaging material lying around. It can be dangerous in the hands of a child.
- Do not open the device: it does not contain any components that need to be serviced by the user. In the event of failure, please have the device checked by an expert.

## 7. Disposal instructions

**Do not dispose of the device with regular domestic waste!**

Electronic equipment must be disposed of at local collection points for waste electronic equipment in compliance with the Waste Electrical and Electronic Equipment Directive.

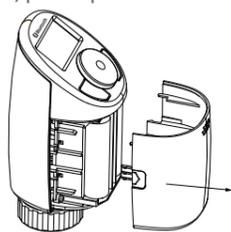
The CE sign is a free trading sign addressed exclusively to the authorities and does not include any warranty of any properties.

Used batteries should not be disposed of with regular domestic waste! Instead, take them to your local battery disposal point.

## 8. Inserting (replacing) batteries

Upon delivery, the batteries are already inserted with an insulation strip. For the device to function, please remove this strip.

To replace the batteries, please proceed as follows:



- Press the battery compartment cover on both sides with your fingers and pull it away from the device body.
- Insert 2 new LR6/mignon/AA (1.5 V) batteries in the battery compartment, making sure they are the right way round.
- Reattach the battery compartment cover and latch it into place.

The service life of new alkaline batteries is approximately 2 years. A battery symbol () on the display indicates that the batteries need to be replaced. After removing the empty batteries, wait approx. 1 minute before inserting the new ones. Operation with rechargeable batteries is not possible.

Never recharge standard batteries. Doing so will present a risk of explosion. Do not throw the batteries into a fire. Do not short-circuit batteries.

## 9. Set date and time

After inserting batteries, the date and time is automatically requested after a brief display of the firmware version number and short motor run ("InS").

- Set the year, month, day, hour and minute with the control wheel and confirm by pressing the control wheel briefly (E).

You can adjust the time and date in the menu under "dAt".

The motor moves the control pin backwards during the setting of date and time.

- If "InS" and the rotating activity symbol () are displayed, the motor still reverses. When only "InS" is shown in the display, the radiator thermostat can be installed on the valve.

The week program and other settings can be adjusted before installation. Press the Mode/Menu button for this, while "InS" is shown in the display. You will find further information in chapter "13. Operation and configuration".

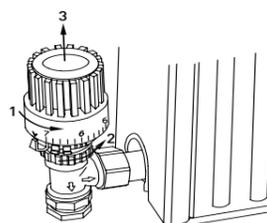
- After the programming has been completed, "InS" is shown again in the display and installation can take place.

## 10. Installation on the radiator

The radiator thermostat is easy to install where thermostatic valves have previously been fitted, and can be done without draining heating water or intervening in the heating system. No special tools are required, and the heating does not have to be switched off.

It is recommended to install the device while radiators / pipes are not hot.

The union nut attached to the radiator thermostat can be used universally and without accessories for valves of the most popular manufacturers with a thread size of M30 x 1.5 mm.



- Rotate the thermostat dial to the maximum value (anti-clockwise). The thermostat dial then no longer presses against the valve spindle, making it easier to remove.
- Remove the mechanical thermostat head. If required, place the supplied support ring or adapter first.
- Attach the radiator thermostat to the valve.

## 10.1 Adapters for Danfoss

By means of the adapters included in the package, the device can be installed on radiator valves of types Danfoss RA, RAV and RAVL.

The assignment of the suitable adapter ring to the relevant valve can be found in the following illustrations.

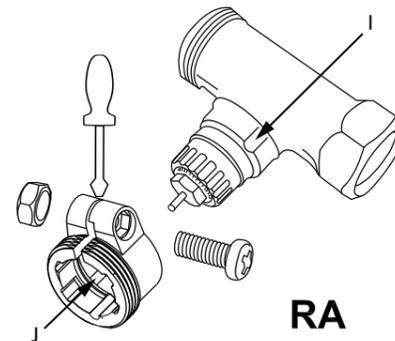
The Danfoss valve bodies have elongated notches (I) around their circumference (see arrow), which also ensure that the adapter is properly seated when it snaps on.

If required, place the provided support ring (L) into the flange before installing the radiator thermostat.

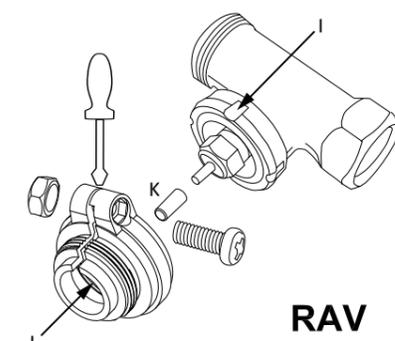
During installation, please ensure that the pins inside the adapter (J) are lined up with the notches (I) on the valve. Ensure that the adapter is properly clipped on.

Take care during installation that you do not trap your fingers between the two halves of the adapter!

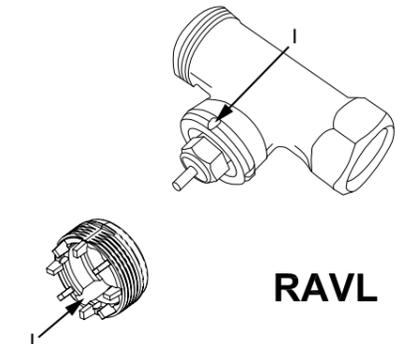
The RA and RAV adapters have been manufactured with pre-tension in order to provide a better seat. Use a screwdriver during installation if necessary, and bend it open slightly in the vicinity of the screw. After clipping onto the valve body, please attach the adapter using the provided screw and nut.



The spigot extension (K) must be fitted to the valve pin of RAV valves prior to installation.

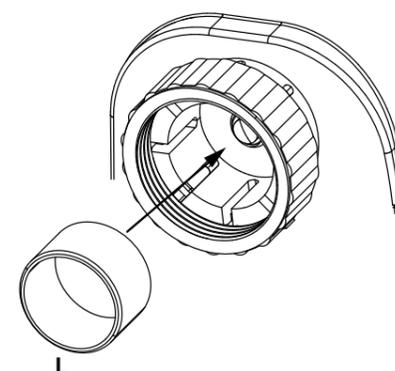


The adapter RAVL does not have to be screwed.



## 10.2 Support ring

The valves from different manufacturers may have tolerance fluctuations that make the radiator thermostat more loosely seated on the valve. In this case, the provided support ring (L) should be placed into the flange before installing the radiator thermostat.



## 11. Adaption run

After inserting batteries and mounting on the valve an adapting run ("AdA") is performed to adapt to the valve.

- As soon as the radiator thermostat has been mounted to the valve, press the control wheel when "InS" is displayed.

"AdA" and the activity symbol () are displayed. During this time, no operation is possible.

If the adaption run has been initiated prior to installing or if an error message (F1, F2, F3) is displayed, press the Boost button; the motor reverses to the "InS" position.

## 12. Display content in normal mode

Switching time periods, operating mode, set-point temperature and weekday are displayed in normal mode. The bars for switching time periods of the week program are displayed for every second time interval.



## 13. Operation and configuration

After the radiator thermostat has been mounted and set up, the device can be individually operated and configured. Operation and configuration can be performed either via BLUETOOTH® with the app "calor BT" or directly on the device.

### 13.1 Operation and configuration via app

To control the device via app, please proceed as follows:

- Download the app "calor BT" from the iOS or Android store and install the app on your smartphone.
- Follow the instructions in the app.

Afterwards, you can control and configure the radiator thermostat via the app.

### 13.2 Operation and configuration on the device

Operation and configuration can be performed directly on the device. Therefore, please proceed as described in the following sections.

#### 13.2.1 Setting the program for the week (Pro)

For each day, up to 3 heating phases (7 change settings) can be set separately. The programming is carried out for the selected days, whereby temperature settings have to be set for the entire period between 00:00 and 23:59.

The device is pre-programmed with a schedule for the week (see section 11.1). To set your own schedule, please follow these instructions:

- Press the Mode/Menu button for at least 3 seconds. The display will show "Pro". Confirm by pressing the control wheel briefly.
- "dAy" appears on the display. You can use the control wheel to select a single day of the week, all weekdays, the weekend, or the entire week.
- Confirm by pressing the control wheel briefly.
- The first switching time point is displayed (00:00). This cannot be changed. The heating times are displayed as bars.
- Confirm by pressing the control wheel briefly.
- Set the temperature which is desired from 0:00.
- Confirm by pressing the control wheel briefly.
- The next switching time point is displayed. You can adjust this by rotating the control wheel.
- Finally set the temperature which should prevail from the selected time.
- You can repeat this procedure until all the other desired temperatures for the time period from 0:00 to 23:59 have been stored.
- If all 7 switching time points have been allocated, 23:59 is displayed as the final switching point to be confirmed.

**i** In auto mode, the temperature can be changed at any time using the control wheel. The modified temperature will then remain the same until the next point at which the program changes.

#### 13.2.2 Setting date and time (dAt)

Date and time can be adjusted via the menu at any time.

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "dAT" with the control wheel.
- Set the year, month, day, hour and minute with the control wheel and confirm by pressing the control wheel briefly.

#### 13.2.3 Switching between summer and winter time (dSt)

The automatic switching between summer and winter (and vice versa) on the agreed European date occurs in the early hours of the Sunday. The automatic switching is activated in the factory settings. It can be manually deactivated as below:

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "dSt" with the control wheel.
- Confirm by pressing the control wheel briefly.
- The display will show "OFF" to deactivate the function or "On" to activate the function.
- Confirm by pressing the control wheel briefly.

#### 13.2.4 Open-window function (AEr)

With a rapidly reducing temperature, the radiator thermostat automatically detects that a room is being ventilated. In order to save heating costs, the temperature is then reduced for a certain period of time (15 minutes, set at the factory). Whilst this function is active, the "window open" symbol () appears on the display.

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "AEr" with the control wheel and confirm by pressing the control wheel briefly.
- The temperature and time can be set with the control wheel. The function can be deactivated by selecting "0" for the time.

#### 13.2.5 Setting offset temperature (tOF)

As the temperature is measured on the radiator, the temperature distribution can vary throughout a room. To adjust this, a temperature offset of up to ±3.5 °C can be set. If a nominal temperature of e.g. 20 °C is set but the room presents with only 18 °C, an offset of -2.0 °C needs to be set.

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "tOF" with the control wheel and confirm by pressing the control wheel briefly.
- Turn the control wheel for as long as necessary until the desired temperature appears.
- Confirm by pressing the control wheel briefly.

#### 13.2.6 Activate/deactivate BLUETOOTH® (bLE)

The BLUETOOTH® function of the radiator thermostat can be activated or deactivated manually.

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "bLE" with the control wheel and confirm by pressing the control wheel briefly.
- The display will show "OFF" to deactivate the function or "On" to activate the function.
- Confirm by pressing the control wheel briefly.

#### 13.2.7 Restore factory settings (rES)

The factory settings of the radiator thermostat can be restored manually. If you do this, you will lose all your settings.

- Press the Mode/Menu button for at least 3 seconds.
- Select the menu item "rES" with the control wheel and confirm by pressing the control wheel briefly.
- "COnF" then appears in the display.
- Confirm by pressing the control wheel briefly.

#### 13.2.8 Boost function

If, for example, you arrive home earlier than usual, the boost function will help you to heat the room up quickly. When activating the boost function, the heating valve is immediately opened to 80 % for 5 minutes. The heating of a room takes longer than 5 minutes, but the heat given off by the radiator can be felt immediately.

- Press the control wheel briefly to activate the boost button.
- The remaining time for the function will be counted down in seconds ("b300" to "b000").
- After these 5 minutes have elapsed, the actuator changes to the mode which was previously active (auto/manu) with the previously set temperature.
- The function can be deactivated prematurely at any time by pressing the control wheel again.

**i** The boost function will not have an immediate effect if the radiator is covered or concealed (e.g. by a sofa). The open-window function is deactivated while the boost function is active.

#### 13.2.9 Setting the holiday function

If you want to maintain a fixed temperature for a certain period, e.g. during your holidays or a party, the holiday function can be used.

- Briefly press the Mode/Menu button repeatedly, until the suitcase symbol () appears in the display.
- Change the time until which the temperature shall remain with the control wheel and confirm by pressing the control wheel briefly.
- Then set the date and confirm by pressing the control wheel briefly.
- Set the temperature and confirm by pressing the control wheel briefly.

The set temperature will remain until the set end time. Afterwards, the radiator thermostat will switch back to auto mode.

#### 13.2.10 Comfort and eco temperature

Via the comfort and eco temperature button () you can change between these two temperatures. The factory setting for the comfort temperature is 21.0 °C and the eco temperature 17.0 °C.

- Press and hold the comfort/eco temperature button () for at least 3 seconds.
- The sun symbol () and the currently stored comfort temperature appear in the display.
- Change the temperature with the control wheel and confirm by pressing the control wheel briefly.
- The moon symbol () and the currently stored eco temperature appear in the display.
- Change the temperature with the control wheel and confirm by pressing the control wheel briefly.

Even in auto mode, the temperature can be changed at any time using the button. It will then remain the same until the next point at which the program changes.

#### 13.2.11 Activate heating pause (battery saving)

Battery life can be prolonged by switching the heating off in summer. To achieve this, the valve is opened fully. The calcification protection continues to run.

**i** In order to save on battery life, you can also deactivate the BLUETOOTH® function (see section "13.2.6 Activate/deactivate Bluetooth® (bLE)").

To activate the heating pause, proceed as follows:

- Turn the control wheel in manu mode (**Manu**) to the right until "On" appears in the display.
- To end it, exit the manu mode (**Manu**) or turn the selector dial to the left.

#### 13.2.12 Set frost protection mode

If a room is not to be heated, the valve can be closed. The valve is only opened if there is a risk of frost. The calcification protection continues to run.

- Turn the control wheel in manu mode (**Manu**) to the left until "OFF" appears in the display.
- To end it, exit the manu mode (**Manu**) or turn the control wheel to the right.

#### 13.2.13 Child safeguard/operating lock

The operation of the device can be locked.

- To activate/deactivate the operating lock, press the Mode/Menu and  button at the same time.
- After it has been successfully activated, "LOC" appears in the display.
- To deactivate the operating lock, press both buttons again.

## 14. Troubleshooting and maintenance

| Error code on the display  | Problem                    | Solution   |
|--|----------------------------|--|
| Battery symbol (  ) | Battery output too low     | Replace batteries                                |
| F1   | Valve drive sluggish       | Check installation, check the heating valve      |
| F2   | Actuating range too wide   | Please check mounting of the radiator thermostat |
| F3   | Adjustment range too small | Check the heating valve                          |

**i** The radiator thermostat performs a routine descaling run once a week on Saturday at 12:00 to protect against calcification of the valve. During this, "CAL" appears in the display.

## 15. Technical data

|                           |                         |
|---------------------------|-------------------------|
| Device short description: | CC-RT-M-BLE-EQ          |
| Supply voltage:           | 2x 1.5 V LR6/mignon/AA  |
| Current consumption:      | 100 mA max.             |
| Battery life:             | 2 years (typ.)          |
| Degree of protection:     | IP20                    |
| Degree of pollution:      | 2                       |
| Ambient temperature:      | 5 to 35 °C              |
| Surface temperature:      | 90 °C (at the radiator) |
| Display:                  | LCD                     |
| Connection:               | M30 x 1.5 mm            |
| Method of operation:      | Type 1                  |
| Linear travel:            | 4.3 mm                  |
| Dimensions (W x H x D):   | 58 x 63 x 122 mm        |
| Weight:                   | 176 g (incl. batteries) |
| Radio frequency:          | 2.402 GHz - 2.480 GHz   |
| Open area RF range:       | 10 m (typ.)             |

Subject to technical changes.

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