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 another person for use, please hand over the operating manual as well.

Symbols used:

⚠️ Attention!
This indicates a hazard.

ℹ️ 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. Operation and display
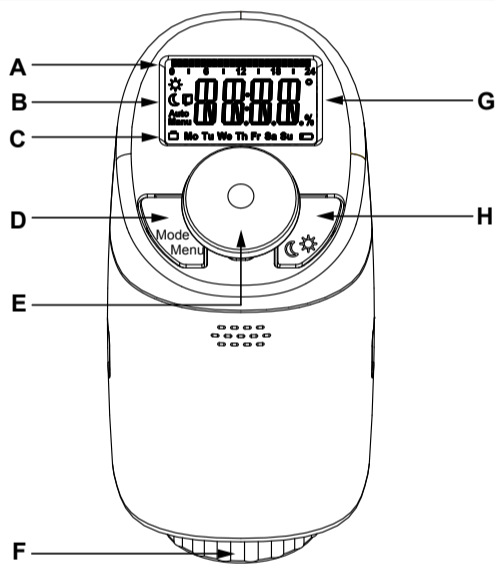
A Bar chart of programmed heating phases
B (☾☀) Eco/comfort temperature, (▢) open-window function, (**Manu**) manual mode, (**Auto**) auto mode
C (🏠) Holiday function, week day, (▬) empty battery symbol
D Mode/Menu button: Switch between auto mode, manu mode and holiday function (press button briefly); open setup menu (press button for at least 3 seconds)
E Control wheel: Change settings, e.g. temperature / Menu choices (after pressing (**E**) (turn the control wheel)), activate the boost function and confirm/save settings in the menu (by pressing 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

With the Radiator Thermostat Model M you can conveniently regulate the room temperature. Thanks to pre-programmed or individually tailored heating and non-heating phases the desired temperature can be comfortably adjusted. The device moves a valve to control the flow of heat to the radiator. The radiator thermostat fits to all common radiator valves and is easy to install 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 warmth to the room.

5. Safety instructions

⚠️ The device is not a toy; do not allow children to play with it.

⚠️ Do not leave packaging material lying around, as it can be dangerous in the hands of a child.

⚠️ Do not open the device: it does not contain any components that can be serviced by the user. In the event of failure, please return the device to our service department.

6. Disposal instructions

Do not dispose of the device with regular domestic waste.

🗑️ Electronic devices must be disposed of in accordance with the Waste Electrical and Electronic Equipment Directive via local disposal points for electronic waste.

CE 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.

7. Inserting (replacing) batteries

ℹ️ 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 device body.
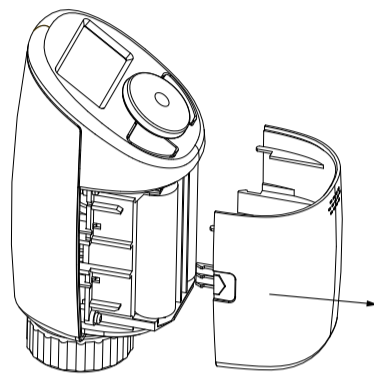
• Insert 2 new LR6 (mignon/AA) batteries in the battery compartment, making sure they are the right way round.
• Reattach the battery compartment cover and latch it into place.

ℹ️ The service life of new alkaline batteries is approximately 3 years. A battery symbol (▬) on the display indicates that the batteries need to be replaced. After removing the empty batteries, wait approximately 1 minute before inserting the new ones. This device does not support operation with rechargeable batteries.

⚠️ 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.

8. 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**).

ℹ️ You can also 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 is still reversing. 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 "11. Setting week program".
• After the programming has been completed, "INS" is shown again in the display and installation can take place.

9. 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.

9.1 Removing the old dial

• Rotate your existing thermostat dial to the maximum value (anti-clockwise). The thermostat dial then no longer presses against the valve spindle, making it easier to remove.
• Now remove the thermostat dial.
• If required, fix one of the supplied adapters. Afterwards, the adaption run can be initiated (see chapter „10. Adaption run").

9.2 Adapters for Danfoss valves

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.

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

ℹ️ 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.

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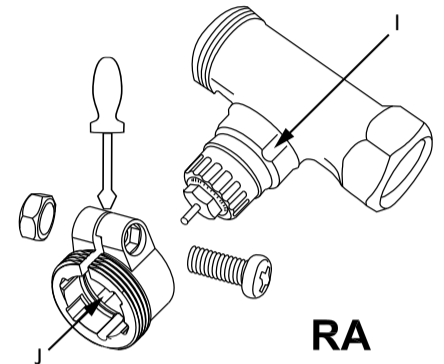
The spigot extension (**K**) must be fitted to the valve pin of RAV valves prior to installation.

RAV
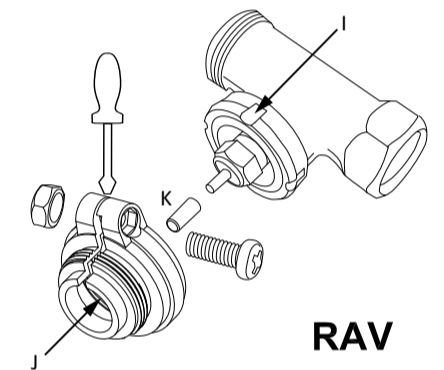
The adapter RAVL does not have to be screwed.

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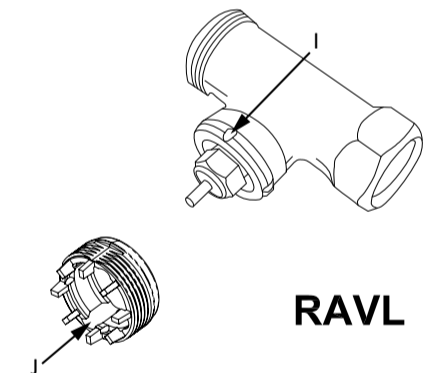
Support ring
The valves from different manufacturers may have tolerance fluctuations that make the radiator thermostat more loosely seated on the valve. In this case, the provided support ring (**L**) should be placed into the flange before installing the radiator thermostat.
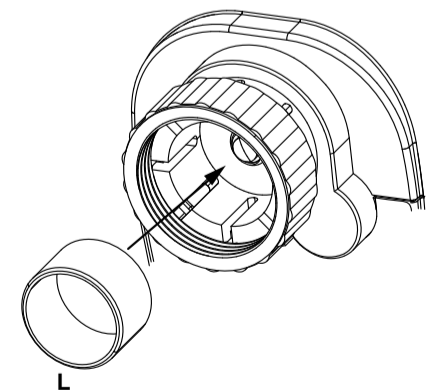
10. Adaption run

After the batteries have been inserted the motor reverses. Meanwhile, "INS" and the activity symbol (⟳) are displayed. As soon as "INS" is displayed without the activity symbol (⟳), the radiator thermostat can be installed. This is followed by an adapting run ("AdA") to adapt the thermostat to the valve.

• Attach the radiator thermostat to the valve.
• Tighten the union nut.
• Press the control wheel briefly when "INS" is displayed.

It is now that the radiator thermostat performs the adaption run. "AdA" and the activity symbol (⟳) are displayed. During this time, no other operation is possible.

11. Setting the program for the week

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 the instructions below:

- Press the Mode/Menu button for at least 3 seconds. „PRO" appears in the display. Confirm by pressing the control wheel briefly.
- „DAY" appears in the display. Rotate the control wheel to select either 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 (0:00), this can not be changed.
- Confirm by pressing the control wheel briefly.
- Now set the temperature which is desired from 0:00hrs.
- Confirm by pressing the control wheel briefly.
- The next switching time point is displayed. You can adjust this by rotating the control wheel.
- Now set the temperature which should prevail from the selected time.
- 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.
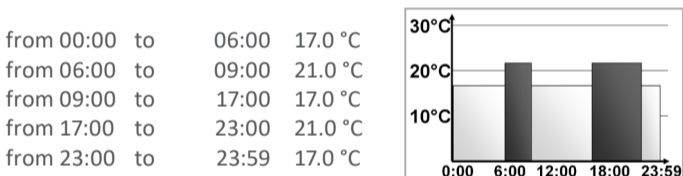
Bars for switching time periods for every second time interval are shown in the display.

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.

11.1 Week program: Example

For each day of the week up to 3 heating phases (7 change settings) with individual temperature settings can be saved with the radiator thermostat.

Two heating phases from 6:00 to 9:00 and from 17:00 to 23:00 for all weekdays alike are saved as factory settings:

from 00:00	to	06:00	17.0 °C
from 06:00	to	09:00	21.0 °C
from 09:00	to	17:00	17.0 °C
from 17:00	to	23:00	21.0 °C
from 23:00	to	23:59	17.0 °C

In this example, bars are displayed only for the intervals 06:00 to 09:00 h and 17:00 to 23:00 h.

12. Display content in normal mode

Switching time periods, operating mode, programmed temperature and week day are displayed in normal mode.

The bars for switching time periods of the week program will be displayed for every second time interval (please see "11.1 Week program: Example").

13. Boost function

The boost function makes use of human sensations of heat. When activating the boost function, the heating valve is immediately opened to 80 % for 5 minutes (factory setting). The heating of a room takes longer than 5 minutes, but the heat given off by the radiator can be felt immediately. If, for example, you arrive home earlier than usual or you need some extra heat in the morning in the bathroom, the boost function will help you to heat the room up quickly.

- Press the control wheel briefly to activate the boost button.
- The remaining time for the function will be counted down in seconds ("B299" to "B000").
- After these 5 minutes have elapsed, the device 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.

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.

14. 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 display will flash to confirm.

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

15. Comfort and eco temperature

The comfort and eco temperature button (☾✲) makes switching between comfort and eco temperature simple and user friendly. The factory setting for the comfort temperature is 21.0 °C and the eco temperature 17.0 °C. They can be adjusted as follows:

- Press and hold the comfort/eco 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.

16. Display of valve position

You can request the current position of the valve. To do this, proceed as follows:

- Press the Mode/Menu button for at least 3 seconds.
- Choose the menu item "POS" by rotating the control wheel.
- Confirm by pressing the control wheel briefly.
- The display will show the current position of the valve drive.

17. 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.

18. 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 de-calcification protection continues to run.

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.

19. Set frost protection mode

If a room is not to be heated, the valve can be closed.

- Turn the control wheel in manu mode (**manu**) to the left until "OFF" appears in the display.

The valve is only opened if there is a risk of frost. The de-calcification protection continues to run.

- To end it, exit the manu mode (**manu**) or turn the control wheel to the right.

20. Switch between summer and winter time

The automatic switching between summer and winter (and vice versa) on the agreed European date occures 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.
- Choose the menu item "DST" with the control wheel.
- Confirm by pressing the control wheel briefly.
- Set the option "OFF" to deactivate automatic switching or set the option "ON" to activate automatic switching with the control wheel.
- Confirm by pressing the control wheel briefly.

21. Open-window function

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 regulated down for a certain period of time (15 minutes, set at the factory). Whilst this function is active, the open-window symbol (�) appears on the display.

To configure the function, proceed as follows:

- 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.

22. Set offset temperature

As the temperature is measured at 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.

To set the offset temperature proceed as follows:

- 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 offset appears.
- Confirm by pressing the control wheel briefly.

23. Restoring the factory settings

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

To do this, proceed as follows:

- 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.
- "CFM" then appears in the display.
- Confirm by pressing the control wheel briefly.

24. Intended use

The programmable radiator thermostat is used to control a conventional thermostatic radiator valve. Only operate the device in inside rooms and avoid the influence of moisture, dust and sunlight or external heat radiation.

Using the radiator thermostat 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.

25. 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	Adjustment range too wide	Check the fastening of the radiator thermostat
F3	Adjustment range too small	Check the heating valve

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.

26. Technical characteristics

Device short description:	CC-RT-M-EQ
Supply voltage:	2x 1.5 V LR6/Mignon/AA
Current consumption:	100 mA (max.)
Battery life:	3 years (typ.)
Degree of protection:	IP20
Degree of pollution:	2
Ambient temperature:	0 to 50 °C
Surface temperature:	90 °C (at the radiator)
LCD:	85 segments
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)

Subject to technical changes.