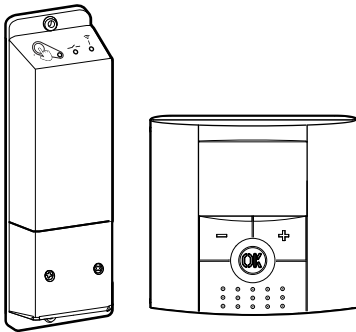




Installation manual

Room thermostat



EKRTRB
EKRTETS

Installation manual
Room thermostat

English

Table of contents

1	About the documentation	2
1.1	About this document.....	2
2	Specific installer safety instructions	2
3	About the room thermostat	2
4	About the box	2
4.1	To unpack the room thermostat	2
5	Preparation	3
5.1	Installation site requirements.....	3
6	Installation	3
6.1	To install the room thermostat.....	3
6.2	To install the receiver	4
6.3	To install the external temperature sensor as floor temperature sensor	4
7	Configuration	5
7.1	User menu.....	5
7.1.1	To enter the user menu.....	5
7.1.2	User parameters	5
7.2	Installer menu.....	5
7.2.1	To enter the installer menu	5
7.2.2	Installer parameters	5
7.3	Receiver-thermostat radio configuration	6
7.4	Temperature sensor calibration.....	6
7.4.1	To calibrate the temperature sensor	6
7.5	Dew prevention	7
8	Technical specifications	7

1 About the documentation

1.1 About this document

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

- **Installation manual:**
 - Installation instructions
 - Format: Paper (supplied in the kit)
- **Operation manual:**
 - Installation instructions
 - Format: Paper (supplied in the kit)

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original documentation is written in English. All other languages are translations.

2 Specific installer safety instructions

Always observe the following safety instructions and regulations.



CAUTION

Do NOT pinch the wiring.



WARNING

A main switch or other means for disconnection, having a contact separation in all poles, MUST be incorporated in the fixed wiring in accordance with applicable legislation.



WARNING

All field wiring and components MUST be installed by a licensed electrician and MUST comply with the applicable legislation.



WARNING

Before obtaining access to terminals, all power circuits MUST be interrupted.

3 About the room thermostat

The room thermostat can be used to control Daikin systems. This includes radiator heating and floor heating/cooling applications. The room thermostat is typically connected to Daikin units. See the "Application guidelines" chapter in the installer reference guide of your unit for examples.

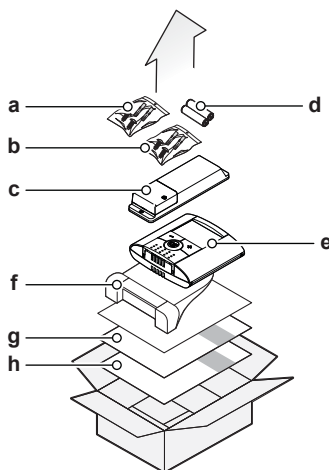
- In case of floor heating-only applications, the room thermostat can be connected to the individual motorised valve of the floor heating loop.
- If a floor heating-only application is used in combination with fan coil units, each fan coil unit should have its dedicated fan coil thermostat.

Optionally, the external temperature sensor EKRTETS can be connected to the thermostat and used as:

- external ambient temperature sensor to control the room temperature (instead of the internal temperature sensor of the room thermostat). In this case, install the temperature sensor where you want to control the ambient temperature.
- floor temperature sensor (only for floor heating/cooling applications) to prevent dew on the floor in case of floor cooling. In this case, install the temperature sensor in the floor. See "6.3 To install the external temperature sensor as floor temperature sensor" [▶ 4] for more information.

4 About the box

4.1 To unpack the room thermostat



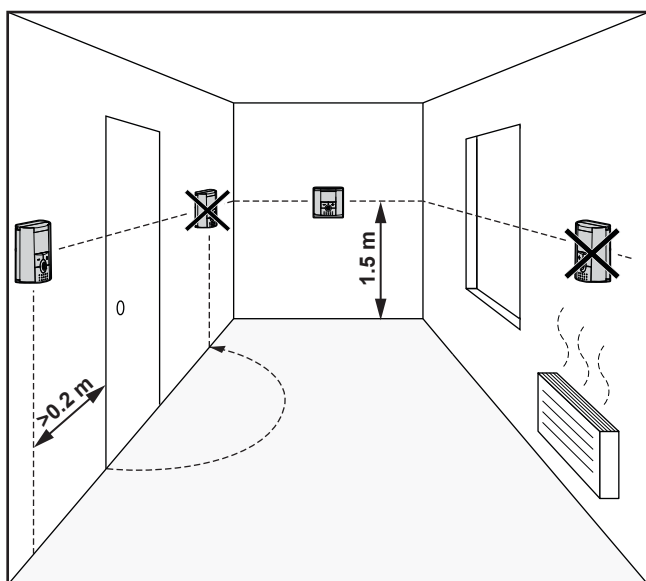
a Plugs and screws (for the room thermostat)

- b Plugs and screws (for the receiver)
- c Receiver
- d Batteries (for the room thermostat)
- e Room thermostat
- f Room thermostat holder
- g Installation manual
- h Operation manual

5 Preparation

5.1 Installation site requirements

- Do NOT install the room thermostat within 50 cm of any appliances or devices that emit electronic or wireless signals.
- Do NOT install the room thermostat near or above radiators or heat emitters.
- Mount the room thermostat at least 1.5 m from the ground.
- Mind the following spacing installation guidelines:



When selecting the installation location of the receiver, also take into account the following recommendations for optimum signal reception:

- The receiver is designed to be installed indoors, typically close the indoor unit.
- The receiver is designed to be installed in a vertical orientation only.
- Do NOT install the receiver in metal boxes or near vertical metal pipes and electronic circuits.
- Mount the receiver at least 1.5 m from the ground.

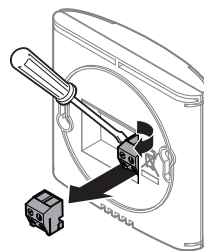
6 Installation

6.1 To install the room thermostat

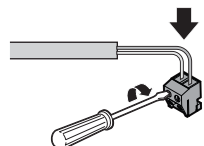
Wall-mounted installation

In case the optional external temperature sensor has been installed as a floor temperature sensor, mounting the room thermostat to the wall is required.

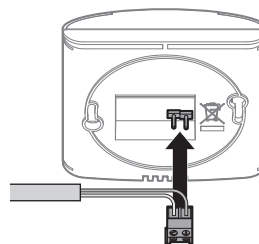
- 1 Only in case of external temperature sensor: use a flathead screwdriver to remove the connector from the back of the room thermostat.



- 2 Insert the sensor wiring in the terminal slots and tighten the screws with a flathead screwdriver.



- 3 Slide terminal block back onto the exposed pins on the back of the room thermostat.



CAUTION

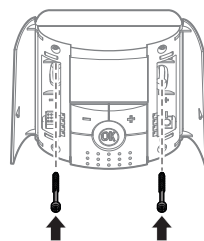
Do NOT pinch the wiring.

- 4 Open the battery compartments and remove the battery insulators.

Result: The screw holes become visible.

- 5 Drill holes in the wall taking the dimensions of the thermostat into account and insert the supplied plugs in the holes.

- 6 Fasten the room thermostat to the wall with the supplied screws.



- 7 Cover up the cutout holes with electrical tape (field supply).

- 8 Insert the included batteries in the battery compartments.

- 9 Close the battery compartments.

Result: The room thermostat is ready for use.

Tabletop installation

You can only use the thermostat as a tabletop solution when the external temperature sensor is NOT installed. In this case, the room thermostat functions as a completely wireless unit and can be put in its holder anywhere in the house.

- 10 Open the battery compartments and remove the battery insulators.

- 11 Insert the included batteries in the battery compartments.

- 12 Put the room thermostat into its holder.

Result: The room thermostat is ready for use.

6 Installation

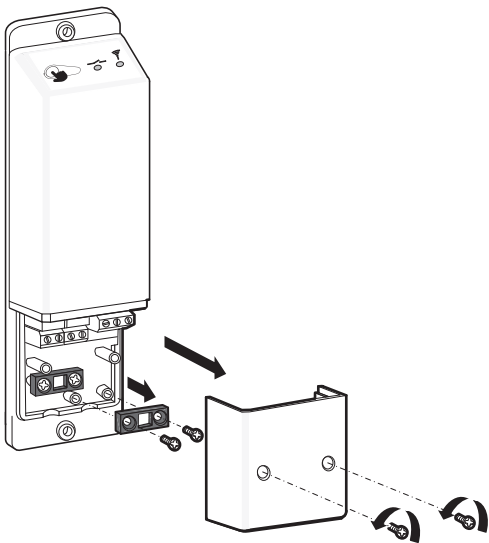
6.2 To install the receiver

WARNING

Before obtaining access to terminals, all power circuits MUST be interrupted.

Prerequisite: You have considered the installation site requirements for the receiver when selecting the installation location. See "5.1 Installation site requirements" [▶ 3] for more information.

- 1 Drill holes in the wall, taking into account the dimensions of the receiver.
- 2 Insert the supplied plugs in the holes.
- 3 Fasten the receiver to the wall with the supplied screws.
- 4 Unscrew the front cover screws of the receiver and remove the front cover.
- 5 Unscrew both screws of the lower right cable bracket and remove the bracket.



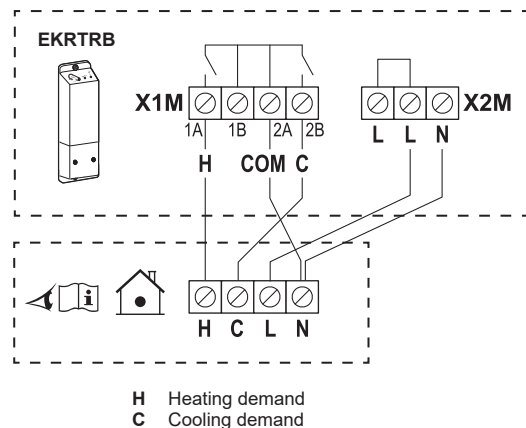
- 6 According to your application, perform the wiring:

WARNING

All field wiring and components MUST be installed by a licensed electrician and MUST comply with the applicable legislation.

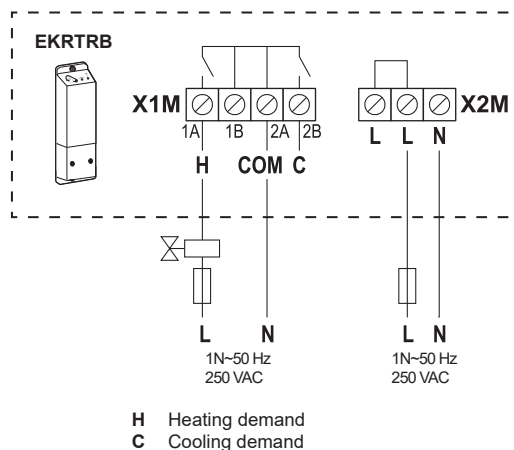
Unit

Refer to the wiring diagram or the addendum book for optional equipment of the unit. Use a wire size between 0.75 mm² and 1.50 mm². Example unit:



Motorised valve

Wire the motorised valve and the receiver as shown below (heating only applications). Use a wire size between 0.75 mm² and 1.50 mm².



The output relays (H and C are voltage-free contacts) can handle a maximum load of 5 A — 230 V. For heating only application, wire connection C is not to be installed.

WARNING

A main switch or other means for disconnection, having a contact separation in all poles, MUST be incorporated in the fixed wiring in accordance with applicable legislation.

NOTICE

To connect 2A (X1M), use a wire size of 0.75 mm².

- 7 Put the cable bracket back in place and tighten the screws.
- 8 Put the receiver cover back in place and tighten the screws.

INFORMATION

To fully complete the installation of the receiver, configure the radio connection between the receiver and the room thermostat. See "7.3 Receiver-thermostat radio configuration" [▶ 6] for more information.

NOTICE

To ensure access, keep the front of the receiver clear at all times.

6.3 To install the external temperature sensor as floor temperature sensor

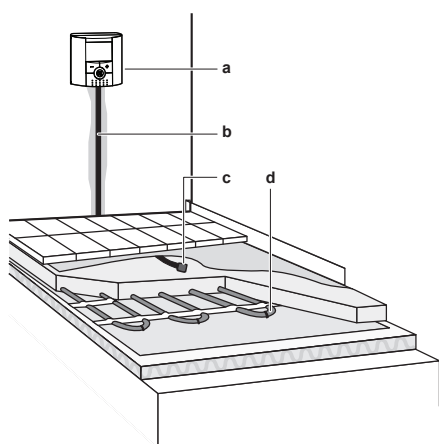
As it should be integrated into the floor, the installation of EKRTETS should be planned and performed in advance. When EKRTETS is installed as a floor temperature sensor, the room thermostat must be mounted to the wall. See "6.1 To install the room thermostat" [▶ 3] for more information.

INFORMATION

The following procedure only serves as an example. Your actual situation may differ from what is represented here.

Prerequisite: You have considered the site requirements for the room thermostat when selecting the installation location. See "5.1 Installation site requirements" [▶ 3] for more information.

- 1 Integrate the temperature sensor in an electrical conduit (Ø16 mm maximum) in the floor construction.



- a Room thermostat
 b External temperature sensor conduit
 c External temperature sensor (EKRTETS)
 d Water pipes

- Pass the temperature sensor cable through the conduit until it reaches the seal.
- Connect the temperature sensor wiring to the room thermostat as described in "6.1 To install the room thermostat" [▶ 3].
- On the room thermostat, set the value for parameter 20 (rEGU) to FLR in the installer menu. For more information about the installer menu, see "7.2 Installer menu" [▶ 5].

**NOTICE**

Properly seal the temperature sensor electrical conduit in order to protect the room thermostat from hot air currents and to allow for possible future replacement of the temperature sensor.

7 Configuration


7.1 User menu

The user menu allows you to set basic room thermostat parameters.

7.1.1 To enter the user menu



- Press and hold  for 5 seconds.

Result: The first parameter (rF INI) of the user menu appears on the display.

To exit the user menu, use the navigation buttons to select the "End" parameter and press .

7.1.2 User parameters

Parameter #	Name	Description	Possible values ^(a)
00	rF INI	Radio configuration mode	
01	dEG	Temperature unit used on display	<ul style="list-style-type: none"> °C °F
02	__:_	Time format used on display	<ul style="list-style-type: none"> 24H (24 hour display) 12H (12 hour display)
03	dst	Daylight summer time change	<ul style="list-style-type: none"> yes (enabled) no (disabled)

Parameter #	Name	Description	Possible values ^(a)
04	AirC	Internal temperature sensor calibration.	See "7.4 Temperature sensor calibration" [▶ 6] for more information.
05	AMbC	External temperature sensor calibration	
06	HG	Anti-freeze temperature in holiday mode	<ul style="list-style-type: none"> 10°C Range: 0.5°C~10°C
07	ITCS	Intelligent Temperature Control System ^(b)	<ul style="list-style-type: none"> yes (enabled) no (disabled)
08	Clr ALL	Clear user settings: press and hold  for 5 seconds to reset all setpoints and user parameters to their default settings.	
09	CHAn	–	
10	VErS	Software version	
11	End	Exit the user menu. Press  to exit.	

^(a) The default values are listed in **bold**.

^(b) If enabled, this function will activate the installation in advance (up to a maximum of 2 hours) to ensure that the desired setpoint is reached at the appropriate time according to the set program. With every program change, the room thermostat measures the time taken by the installation to reach the setpoint to compensate for any temperature differences that may be present at different times. This allows you to make program changes without needing to adjust the temperature in advance, because the room thermostat does this automatically.

7.2 Installer menu

The installer menu is used to modify advanced parameters that are not available in the user menu.

7.2.1 To enter the installer menu

- Press and hold  for 5 seconds.

Result: The first parameter (rEGU) of the installer menu appears on the display.

To exit the installer menu, use  and  to select the End parameter and press .

7.2.2 Installer parameters

Parameter #	Name	Description	Possible values ^(a)
20	rEGU	Sensor type	<ul style="list-style-type: none"> AIR: internal temperature sensor of the room thermostat amb: EKRTETS installed as external temperature sensor FLR: EKRTETS installed as floor sensor FL.L: –
21	MMode	Operation mode	<ul style="list-style-type: none"> Hot: heating mode Cld: cooling mode rEv: reversible mode Aut: automatic mode

7 Configuration

Parameter #	Name	Description	Possible values ^(a)
21	Cld	Enable cooling mode submenu (select Cld and press OK to enter the submenu)	<ul style="list-style-type: none"> yes (enabled) no (disabled)
22	AirS	View measured values of the internal temperature sensor (displayed in °C/°F)	
23	AmbS	View measured values of the external ambient temperature sensor (displayed in °C/°F)	
24	RecS	View measured values of the floor temperature sensor (displayed in °C/°F)	
25	FL.Lo	–	
26	FL.Hi	–	
27	reg	Regulation type	<ul style="list-style-type: none"> bp: proportional band (PWM 2°C/10 min) hys: hysteresis (0.5°C)
28	UF1	Concrete type (use when 27=bp) ^(b)	<ul style="list-style-type: none"> uf1: liquid concrete with low thickness (<6 cm) uf2: traditional concrete with thickness >6 cm
29	Bp1	–	
30	Wir	–	
31	min	Minimum settable temperature value ^(c)	<ul style="list-style-type: none"> 5°C Range: 5°C~15°C
32	MAX	Maximum settable temperature value ^(c)	<ul style="list-style-type: none"> 37°C Range: 20°C~37°C
33	Win	Open window detection function	<ul style="list-style-type: none"> yes (enabled) no (disabled)
34	rH	Humidity threshold value	<ul style="list-style-type: none"> 55% Range: 0%~100%
35	dEv	Dew prevention function ^(b)	<ul style="list-style-type: none"> yes (enabled) no (disabled)
36	Clr EEp	Clears the room thermostat memory and reset all parameters to their default values. Press and hold OK for a few seconds to reset the room thermostat to its factory settings.	
37	End	Exit the installer menu. Press OK to exit.	

^(a) The default values are listed in **bold**.

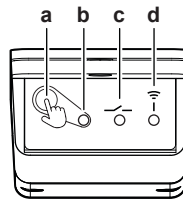
^(b) Only in case EKRTETS is installed as floor temperature sensor.

^(c) Applies to heating and cooling operation.

Result: The room thermostat display displays the main screen and the RF LED on the receiver turns OFF to indicate that pairing is successful.

- Verify that the radio signals are correctly received by the receiver.

Receiver LED overview



- a Push button
- b Push button LED
- c Contact LED
- d RF LED

Push button LED	Contact LED	RF LED	Meaning
–	Red	–	Heating demand (thermostat mode)
–	Blue	–	Cooling demand (thermostat mode)
Green	–	–	Forced heating (manual mode)
Green, 50%	–	–	Forced cooling (manual mode)
Green, 10%	–	–	Forced OFF (manual mode)
–	–	Orange, blinking slowly	Radio configuration mode
–	–	Orange, blinking quickly	RF signal lost
–	–	Orange, quick short blink	RF reception indicator
Red/Green, blinking	–	–	Thermostat sensor error
Orange	Blue/Red	Orange	Receiver reset ^(a)

^(a) To reset the receiver, press and hold the push button for 30 seconds.



INFORMATION

Pressing the push button will turn OFF the receiver. When the receiver is turned off, the integrated frost protection (4°C) remains active.

7.3 Receiver-thermostat radio configuration

In order to make communication between the room thermostat and the receiver possible, you need to configure the radio connection.

- Put the receiver in radio configuration mode by pressing the push button for 10 seconds.

Result: The RF LED slowly blinks orange.

- On the room thermostat, press and hold **OK** for 5 seconds.

Result: The room thermostat display shows the rF INI parameter. The thermostat will now send radio signals to the receiver. On the room thermostat display, **(rF)** blinks.

- Wait a few seconds for both the receiver and the thermostat to exit radio configuration mode.

7.4 Temperature sensor calibration

Both the internal temperature sensor of the room thermostat and the (optional) external temperature sensor can be calibrated. It is recommended to calibrate the sensor(s) after installation. The procedure is the same for both the internal temperature sensor and the optional external temperature sensor.

7.4.1 To calibrate the temperature sensor

- Using a thermometer, measure the temperature in the room at 1.5 m distance from the floor for at least 1 hour.
- Press and hold **OK** on the room thermostat for 5 seconds to enter the user menu.

- 3 Use to navigation keys to select AirC or AMbC parameter, depending on whether you want to calibrate the internal or (optional) external temperature sensor.
- 4 Press OK to modify the selected parameter. By default it is set to "no".
- 5 Use **←** and **→** to enter the measured value.
- 6 Press OK to confirm.

Result: The message "yes" is displayed and the value is stored in the internal memory of the room thermostat.

If needed, the stored calibration value can be erased by pressing **↵**. The message "no" will be displayed, confirming the value has been erased.

7.5 Dew prevention

For reversible systems, the room thermostat offers 2 ways of managing humidity in order to prevent condensation while cooling.

Humidity percentage threshold

You can set a threshold value for the humidity percentage. Whenever the room thermostat detects that the humidity percentage exceeds the set threshold, cooling demand is ceased to prevent condensation. Whenever this is the case, **♦** blinks on the room thermostat display. To change the threshold value (default 55%), set the value for parameter 34 ("rH") to the desired value in the installer menu.

Dew prevention function with floor temperature sensor

If the optional external temperature sensor EKRTETS is installed as floor temperature sensor, parameter 35 ("dEv") can be set to "yes" in the installer menu to enable the dew prevention function.

When enabled, this function will continuously compare the temperature measured by the floor temperature sensor against the dew point. The dew point is calculated based on the room temperature and humidity. When the floor temperature drops below or comes too close to the dew point, cooling demand is stopped temporarily to prevent any condensation on the floor. While the dew prevention function is active, **♦** blinks on the room thermostat display.

8 Technical specifications

Room thermostat (EKRTTB)

Temperature read out precision	Steps of 0.1°C
Operating temperature	0°C~40°C
Setpoint temperature range	5°C~37°C, in steps of 0.5°C
Holiday mode temperature range	0.5°C~10°C
Electrical protection	Class II – IP30 (indoor use, pollution degree 2)
Power supply	2 alkaline AAA LR03 1.5V batteries
Battery autonomy	~2 years, depending on usage conditions
Sensing element of internal temperature sensor	NTC 10kΩ at 25°C

Receiver (EKRTTB)

Operating temperature	0°C~40°C
Electrical protection	Class II – IP30
Power supply	1N~ 50 Hz 230 V
Radio frequency and receiving zone	868 MHz, <10 mW, range of approximately 100 m in open space, 30 m in residential environment
Output relays	Maximum load 5 A, 230 V

Maximum fuse amp	3 A
Power consumption	15 W (maximum)
Immunity against voltage surges	Category III (2.5 kV)
Type of automatic action of the thermostat	1C

External temperature sensor (EKRTETS)

Sensing element	NTC 10kΩ at 25°C
-----------------	------------------



4P677092-1 B 00000002

Copyright 2021 Daikin

DAIKIN EUROPE N.V.

Zandvoordestraat 300, B-8400 Oostende, Belgium

4P677092-1B 2022.04