

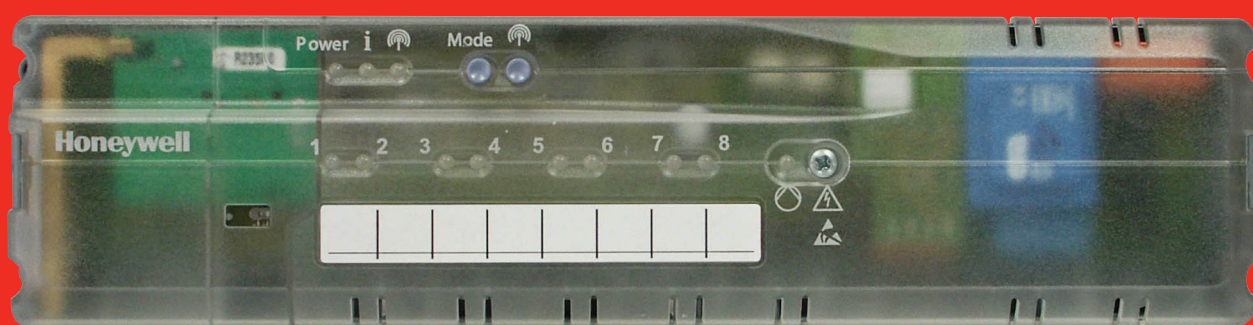
HCE80(R) / HCC80(R)

Mounting and operation

EN

Montage en bedrijf

NL



English 1

Nederlands 29

Fig. 1

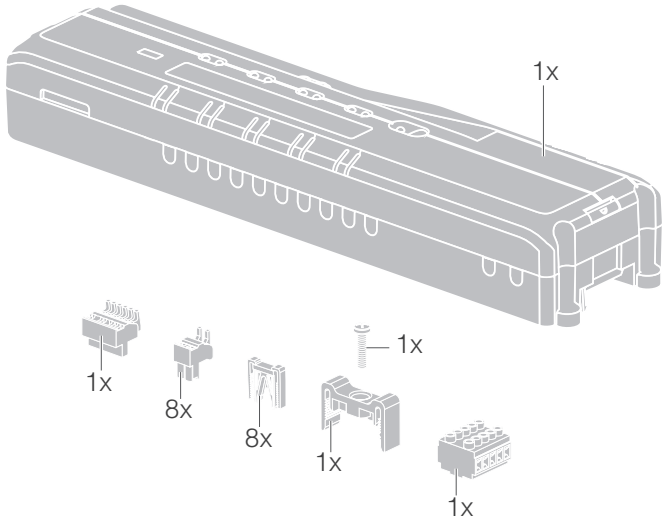


Fig. 2

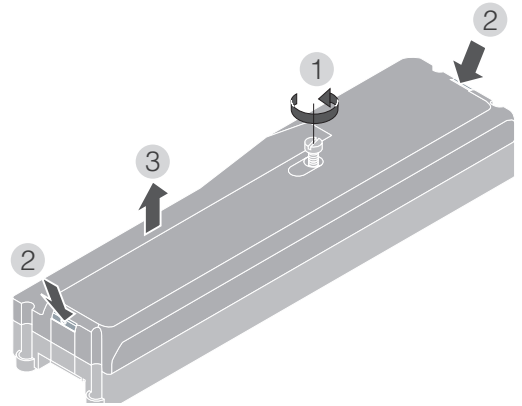


Fig. 3

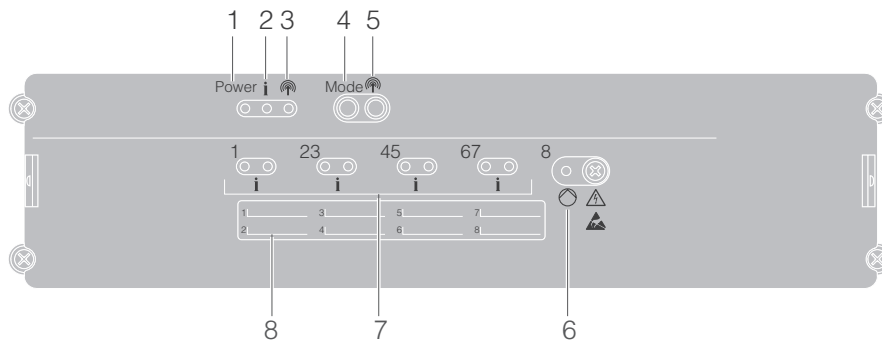


Fig. 4

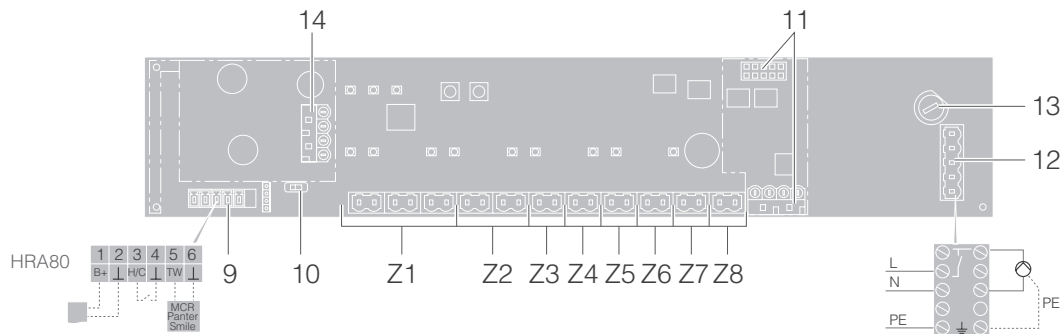


Fig. 5

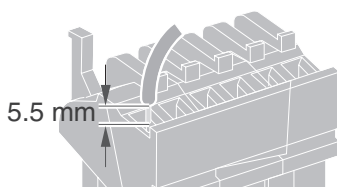


Fig. 6

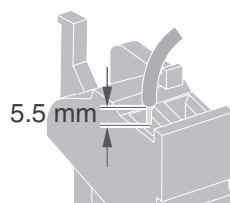
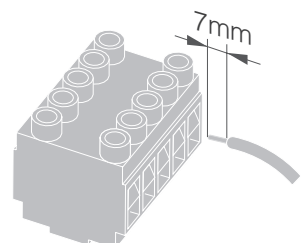


Fig. 7



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Introduction

These installation and operating instructions contain all the information required for installation, commissioning and configuring the underfloor heating controller HCE80(R) / HCC80(R).

All the operating elements and connections are shown on a fold-out page.

- ① Fold out the left-hand cover.
Leave the cover folded out while reading further.

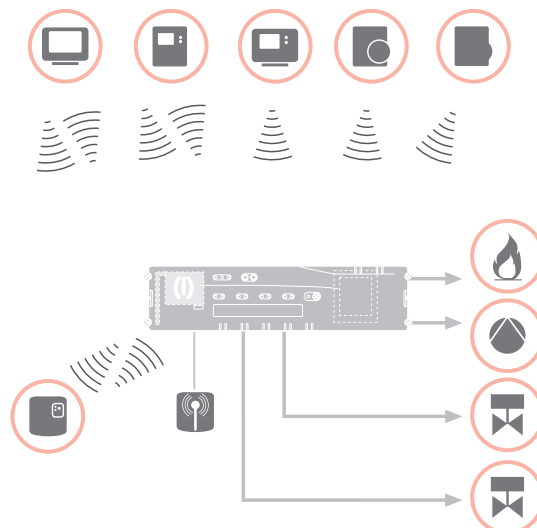
Legend for fold-out page

Fig. 1	Scope of delivery
Fig. 2	Opening the housing
Fig. 3	Display and operating elements
(1)	Power Power supply on/off
(2)	i Information display
(3)	 Installation display
(4)	Mode Operating mode button
(5)	 Installation button
(6)	 Pump off/off display
(7)	1...8 Zone LEDs
(8)	Labelling of Zones 1...8
Fig. 4	Connections
(9)	I/O connector
(10)	Switch for setting normally open/normally closed
(11)	Slot for expansion module HCS80
(12)	Connector for supply voltage, pump
(13)	Fuse
(14)	Slot for internal antenna
(Z1...Z8)	Connector for Zones 1...8
Fig. 5	I/O connector
Fig. 6	Connector for Zones 1...8
Fig. 7	Connector for supply voltage, pump

System overview

The underfloor heating control system is an intelligent system for individual room temperature control. The following overview shows the devices that can operate together with the underfloor heating controller.

- | | | | |
|--|---|--|--|
| | <p>evohome controller (ATC928G)
Central operating device (up to 12 zones)</p> | | <p>Underfloor heating controller (HCE80(R) or HCC80(R))
Controls the room temperature per room (zone)</p> |
| | <p>Central operating device (CM927)
Controls the room temperature via programmable time programs (1 zone)</p> | | <p>Boiler feedback
Analog output (only HCE80/HCC80) or relay output (only HCE80R/HCC80R)</p> |
| | <p>Room thermostat (DTS92)
Measures the room temperature, room setpoint temperature can be set, with digital display</p> | | <p>Integrated pump relay</p> |
| | <p>Room setpoint generator/sensor (HCW82)
Measures the room temperature, room setpoint temperature can be set using an adjustment dial</p> | | <p>Thermal actuators</p> |
| | <p>Room temperature sensor (HCF82)
Measures the room temperature</p> | | <p>External antenna (HRA80)</p> |
| | | | <p>Relay module (BDR91)</p> |



System overview – continued

An underfloor heating control system can in principle have 3 different configurations:

- with an **evohome** controller
- with a central operating device CM927
- without a central operating device

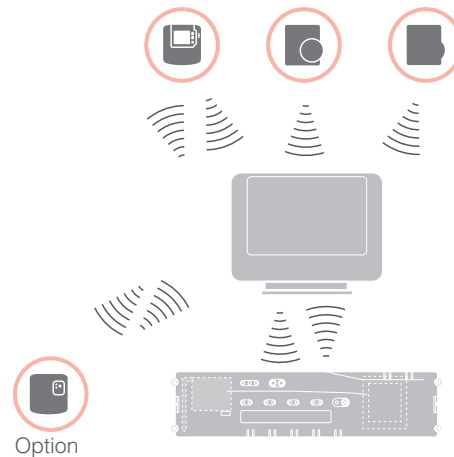
This configuration determines the further procedure for commissioning and binding.

Underfloor heating control system with an **evohome** controller

With the **evohome** controller each zone can be controlled separately with an individual time program.

The room setpoint generators/sensors DTS92, HCW82 or HCF82 as well as the boiler relay BDR91 communicate directly with the **evohome** controller.

The **evohome** controller is connected with the underfloor heating controller, see "Binding the underfloor heating controller with the **evohome** controller" on Page 15.

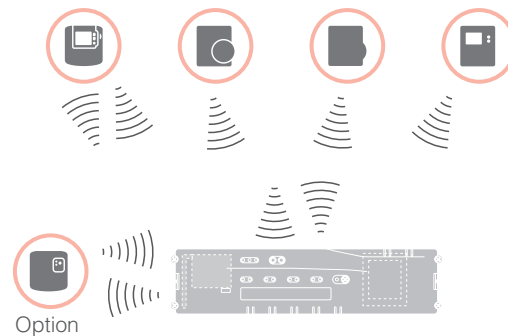


Underfloor heating control system with a central operating device **CM927**

The central operating device CM927 communicates directly with the underfloor heating controller HCE80(R)/HCC80(R).

The room setpoint generators/sensors DTS92, HCW82 or HCF82 as well as the boiler relay BDR91 also communicate directly with the underfloor heating controller HCE80(R)/HCC80(R).

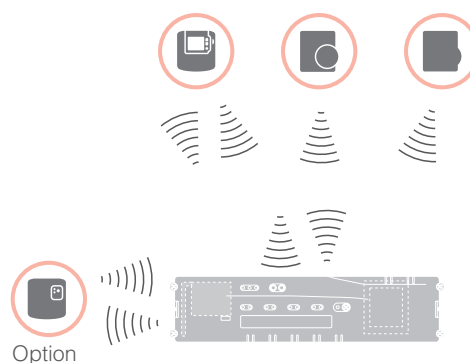
The operating device CM927 is connected with the underfloor heating controller, see "Binding the room device CM927 with the underfloor heating controller" on Page 16.



Underfloor heating control system without a central operating device

The room setpoint generators/sensors DTS92, HCW82 or HCF82 as well as the boiler relay BDR91 communicate directly with the underfloor heating controller HCE80(R)/HCC80(R).

Binding with the room device has to be carried out at the underfloor heating controller HCE80(R)/HCC80(R), see "Binding the underfloor heating controller without time program" on Page 17.



Function overview

The underfloor heating controller offers the following functions:

- 5 controllable temperature zones, extendable to 8
- Up to 3 thermal actuators can be connected per zone
- Normally open or normally closed thermal actuators can be used
- Integrated pump relay
- Boiler feedback
 - Analog (only HCE80/HCC80)
 - Integrated relay with floating contact 42 V AC/VDC (only at HCE80R, HCC80R)
 - Wireless via relay BDR91
- Underfloor heating controller can be switched between heating and cooling
- 1 antenna (internal or external) can be used for 3 controllers
- Rapid installation through screwless terminals of the thermal actuators
- Intelligent controlling via fuzzy logic
- Simple diagnoses of the wireless transmission
- Operating state display via LEDs

	HCE80	HCE80R	HCC80	HCC80R
Antenna	External	External	Internal	Internal
Pump relay	230 V AC internal	230 V AC internal	230 V AC internal	230 V AC internal
Analog output	Available	Not available	Available	Not available
Boiler feedback radio	External with BDR91	External with BDR91	External with BDR91	External with BDR91
Boiler feedback relay	Not available	42 V AC/VDC	Not available	42 V AC/VDC



The pump relay 230 V AC is not floating.

Mounting and installation

Creating a zoning plan

Within a building rooms (zones) can be controlled with different room setpoint temperatures. The thermal actuators of the allocated zone (room) are controlled depending on the room setpoint temperature.



A maximum of 5 temperature zones can be set up for each underfloor heating controller.

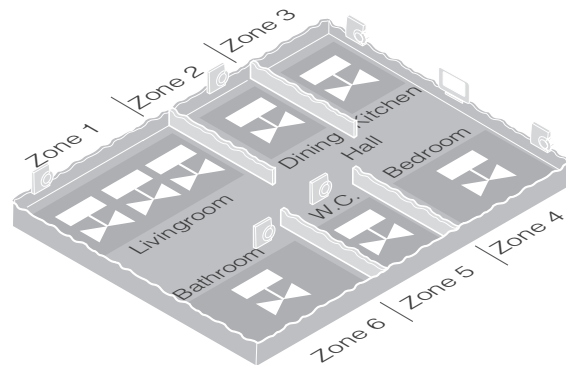
This number can be increased to 8 by using the expansion module HCS80.

A maximum of 3 thermal actuators can be connected in each zone.

Temperature zones (maximum)	Thermal actuators (maximum)	Number of underfloor heating controllers
8	24	1
16	48	2
24	72	3

Specifying temperature zones

- 1 Specify the number of zones and the corresponding rooms.
- 2 Allocate the corresponding room device, for example HCW82 and the required thermal actuators to each zone.
- 3 Label the room devices and thermal actuators for the respective zone (see fold-out page Fig. 4, Z1...Z8).



Explanation of the example

- The living area is covered by six temperature zones. **The additional module HCS80 is required for this partitioning.**
- The underfloor heating controller controls 8 thermal actuators.

Zoning plan (sample)

Zone	Thermal actuator (type, location)	Room setpoint generator (location)	Room name	Operating modes
1	_____ _____			Heating Cooling*
2	_____ _____			Heating Cooling*
3	_____ _____			Heating Cooling*
4	_____ _____			Heating Cooling*
5	_____ _____			Heating Cooling*
6	_____ _____			Heating Cooling*
7	_____ _____			Heating Cooling*
8	_____ _____			Heating Cooling*

* Optional

Safety instructions

DANGER**Danger to life through electric shock!**

Contacts that are open are live.

- ▶ Unplug the power plug before opening the housing.
- ▶ Have all the work carried out by authorised specialist personnel.
- ▶ Observe the valid VDE regulations during the installation.

CAUTION**Insufficient data transfer**

Interference of the radio receiver in the device through metallic objects and further radio devices.

- ▶ When mounting the device ensure that the distance to radio devices such as radio headphones, cordless phones etc. according to the DECT standard amounts to at least 1 m.
- ▶ Ensure that there is sufficient distance to metallic objects.
- ▶ In case of interference of the radio receiver in the device through metallic objects and further radio devices which cannot be eliminated, select another installation site.

WARNING**Damage to the underfloor heating controller**

Short-circuiting through humidity and moisture.

- ▶ Install the device at a site that is protected against humidity and moisture.

CAUTION**Damage to exposed components!**

Destruction of the electronic components through electrostatic discharges.

- ▶ Do not touch the components.

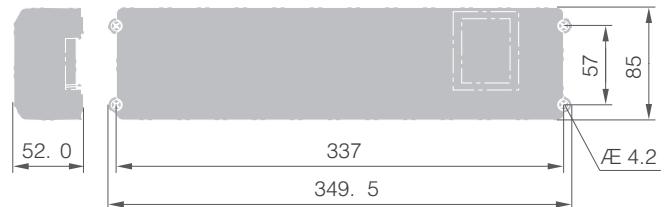
Installing the underfloor heating controller

The underfloor heating controller can be installed within or outside the distributor box.

4 4.2-mm holes for installation are located on the underfloor heating controller.

Wall installation

- 1 Mark, drill and insert plugs into fastening holes.
- 2 Screw on the underfloor heating controller.

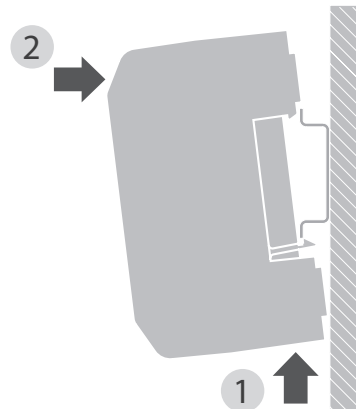


Take the 52 mm installation height of the underfloor heating controller into account!

If the underfloor heating controller is installed upright on edge, the transformer must be on top to ensure ventilation.

DIN rail installation

- 1 Place the housing on the DIN rail from below (1).
- 2 Press the housing upwards until it snaps into place (2).



Settings at the underfloor heating controller

DANGER!

Danger to life through electric shock!



Contacts that are open are live.

- ▶ Ensure that the cable is deenergized.

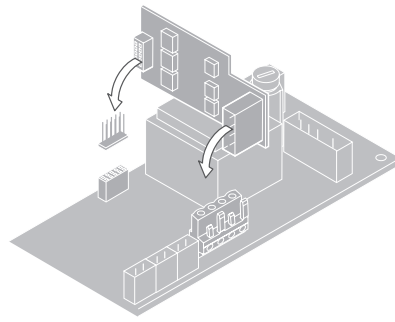
Opening the housing

- 1 Open the housing (see fold-out page, Fig. 2).

Plugging in the expansion module (optional)



The expansion module HCS80 expands the number of possible temperature zones of the underfloor heating controller from 5 to 8.

- 1 Insert the expansion module with the adapter connector into the provided slot (see fold-out page, Fig. 4 (11)).



Setting the thermal actuator type

- 1 Check which thermal actuator type is used.
- 2 Set the switch in accordance with the following table (see fold-out page, Fig. 4, (10)):

Switch position	Thermal actuator type	Property
	Normally closed	Opens the heating circuit when voltage is applied to the zone output. The thermal actuator only requires power during heating operation
	Normally open	Opens the heating circuit when no voltage is applied to the zone output.



Only one type of thermal actuator can be connected per underfloor heating controller.

If normally open and normally closed thermal actuators are to be operated, you require two underfloor heating controllers.



The thermal actuators are protected by a ceramic fuse, see Section "Navigation and function overview" on Page 27.

Cabling

Permissible cable types and lengths

Thermal actuators

Outer cable diameter	min. 3.5 mm / max. 5.3 mm
Cable length	max. 400 m
Cable cross-section	max. 1.0 mm ²
Stripping length	4 mm
Terminal range of the connectors	0.07 - 1.33 mm ² ; flexible wire

Power and pump connection 230 V AC

Outer cable diameter	min. 8.0 mm / max. 11 mm
Cable length	max. 100 m
Cable cross-section	max. 1.5 mm ²
Stripping length	7 mm
Terminal range of the connectors	0.50 - 2.50 mm ² ; flexible/fixed connection 0.50 - 1.50 mm ² ; flexible, with wire end ferrule

Antenna connection

Cable length	Max. 30 m
Cable cross-section	JE-LiYCY 2 x 2 x 0.5 mm ² ; JE-Y(St)Y Ø 2 x 2 x 0.8 mm; 2 x 0.5 mm ²
Stripping length	5.5 mm
Terminal range of the connectors	0.07 - 1.54 mm ²

Heating/cooling, boiler feedback

Cable length	Max. 100 m
Cable cross-section	JE-LiYCY 2 x 2 x 0.5 mm ² ; JE-Y(St)Y Ø 2 x 2 x 0.8 mm; 2 x 0.5 mm ²
Stripping length	5.5 mm
Terminal range of the connectors	0.07 - 1.54 mm ²

Connecting the power cable

DANGER! Danger to life through electric shock!

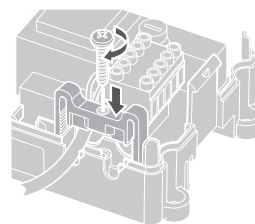


Contacts that are open are live.

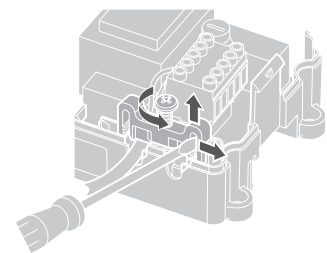
► Ensure that the cable is deenergized.

- 1 Select a suitable cable for the power supply from the permissible cable types.
- 2 Strip the connections 7 mm (see fold-out page, Fig. 7).
- 3 Connect the cable to the connector (see fold-out page, Fig. 4 (12)).
- 4 Plug the connector into the socket (12) (see fold-out page, Fig. 4).
- 5 Secure the cable with the cable clamp.

Installation



Disassembling



Cabling – continued

Connecting the thermal actuators



Damage to the underfloor heating controller.

Take the technical data into account at thermal actuators:

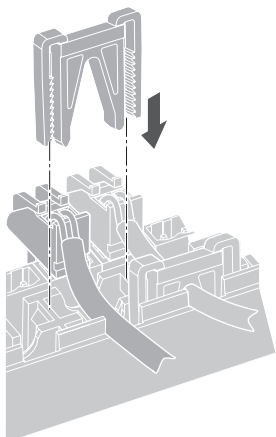
Total of 3 A maximum current, 250 mA continuous current per zone.

Each zone can control up to 3 thermal actuators. 3 thermal actuators can be connected directly for Zone 1, 2 for Zone 2 and 1 thermal actuator each for Zones 3 through 5. One connection for the expansion module is available for each of the zones 6 through 8.

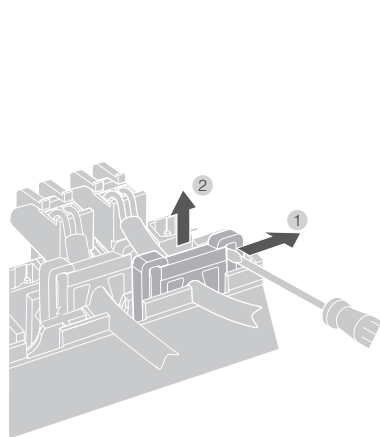
If more than 11 thermal actuators are to be connected to the underfloor heating controller, the cables of the thermal actuators must be connected in a distribution box.

- 1 If applicable, install the cables of the thermal actuators to the distribution box.
- 2 Wire the wires of the thermal actuators.
- 3 Break out the openings for the cables on the housing using a diagonal cutter.
- 4 Strip the connections 5.5 mm (see fold-out page, Fig. 6).
- 5 Insert the connecting cables of the thermal actuators into the cable openings of the connectors.
- 6 Close the terminals.
- 7 Plug the connectors into the sockets of the corresponding zones (see fold-out page, Fig. 4 (Z1...Z8)).
- 8 Clamp the cables into the stress relief clamp.
- 9 Secure the cable with the cable clamp.

Installation



Disassembling



Connecting a pump (230 V AC)

As soon as a zone is active, the pump is activated with a time delay. The pump switches off as soon as all the valves are closed.

The LED  (see fold-out page, Fig. 3 (6)) lights up green when the pump is running.

The pump contact is not floating. The pump can be connected directly, see circuit diagram.

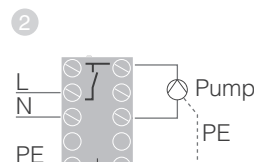


Damage to the underfloor heating controller.

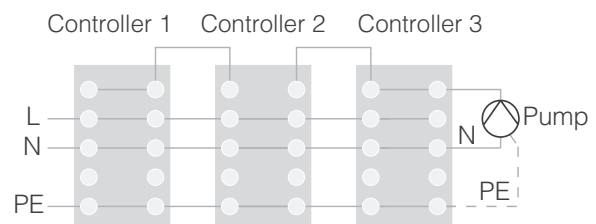
Short-circuit at incorrect installation.

Connect all the controllers to the same phase.

- 1 Strip the connections 7 mm (see fold-out page, Fig. 7).
- 2 Connect the pump (see fold-out page, Fig. 4 (12)).



Pump connection



Installing an external antenna

Up to three underfloor heating controllers can be connected to an antenna.

- 1 Only install the external antenna outside metal housings (e.g. control cabinets).
- 2 Install the antenna at a suitable location near the underfloor heating controller (3).
- 3 Strip the connections 5.5 mm (see fold-out page, Fig. 5).
- 4 Connect the antenna (see fold-out page, Fig. 4 (9)): Shield to Terminal 2, second conductor to Terminal 1
- 5 Close the terminals.

Operation with several underfloor heating controllers

If several underfloor heating controllers are operated simultaneously, an antenna (internal or external) may only be connected to one controller.

Closing the housing

- 1 Place the housing cover back on (see fold-out page).
- 2 Snap the left and right snap lock back into place.
- 3 Tighten the screws on the top.

Commissioning

During commissioning, room setpoint generators/sensors and, if applicable, the time programs of the central operating devices are assigned to the temperature zones of the underfloor heating controller.

- 1 Connect the underfloor heating controller to the supply voltage.
The mains voltage LED (POWER) lights up.

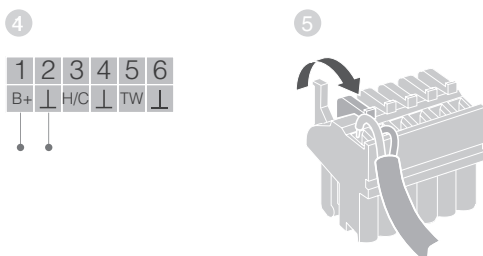
LED displays at the underfloor heating controller

The LEDs on the underfloor heating controller (see fold-out page, Fig. 3 (1, 2, 3)) indicate the operating modes of the underfloor heating controller and the installed temperature zones.

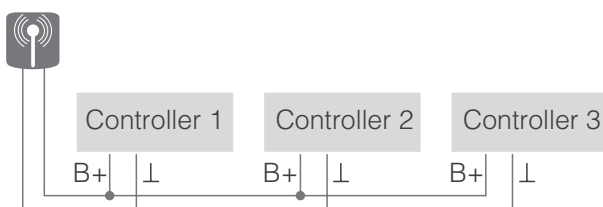
LED	Display	Meaning
POWER (green)	Lights up	Normal mode
i (red)	Lights up	Group alarm
	Flashing	Antenna fault display
Ⓜ (yellow)	Rapid flashing	No device installed

In normal mode the LEDs 1..8 show the position of the thermal actuators (see fold-out page, Fig. 3 (7)).

LEDs 1..8	Meaning
Green	Thermal drive opened
Off	Thermal drive closed

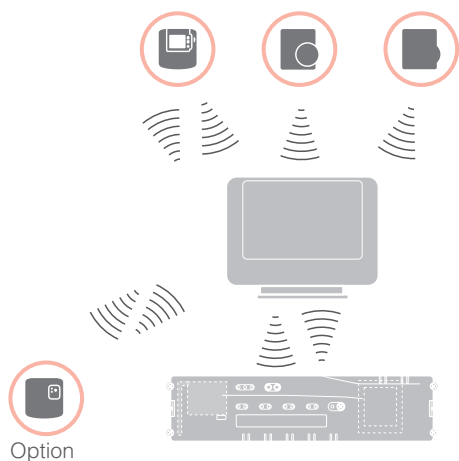


Antenna connection



Connecting devices (binding)

Binding room setpoint generators/sensors with the **evohome** controller




With the **evohome** controller each zone can be controlled separately with an individual time program.

For information on installing the device please read the **evohome** installation instructions.



evohome controller

If you do not follow the GUIDED CONFIGURATION, observe the steps on your **evohome** controller:

1. Press "SET" ⚙️ on the **evohome** controller and keep it pressed for 3 seconds.
2. Press the green check mark .
3. Press ADD ROOM.
4. Select the room that you want to add and then select UNDERFLOOR HEATING.
5. A room setpoint generator/sensor HCW82/HCF82/DTS92 has to be connected with the **evohome** controller for each room that is controlled with the underfloor heating controller.

Repeat this procedure for each room (zone) with an underfloor heating.



Ensure that the room that you add to the **evohome** controller corresponds to the correct underfloor heating room.

Commissioning and binding the **evohome** controller

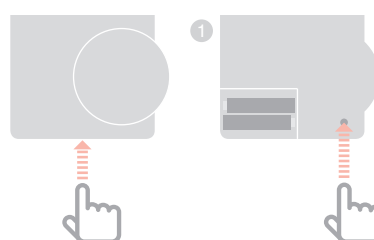


If you want to control the room temperature with the **evohome** controller (that has to be located in this room), press YES. Otherwise press NO and connect a sensor – either a room thermostat (DTS92) or a room setpoint generator/sensor (HCW82/HCF82).

Binding a room setpoint generator/sensor (HCW82 or HCF82)











- 1 Briefly press the bind button in the bottom right-hand corner. The red LED flashes.
- 2 You should receive a SUCCESS message at the **evohome** controller (if not, go back and bind again).





Binding a room thermostat (DTS92)




- 1 Keep the  button pressed 2 seconds long to set the room thermostat to standby.
- 2 Keep the  and  button pressed simultaneously for 3 seconds. **INst** should be displayed.
- 3 Press the  button. **COnt** should be displayed.
- 4 Press the  button three times. **CLr** should be displayed.
- 5 Press the  button once to delete existing connecting data.
- 6 Press the  button. **COnt** should be displayed.
- 7 Press the  button once to send the connecting signal to the **evohome** controller.
- 8 You should receive a SUCCESS message at the **evohome** controller (if not, go back and bind again).

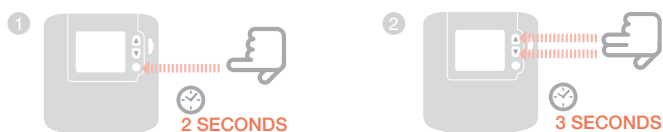
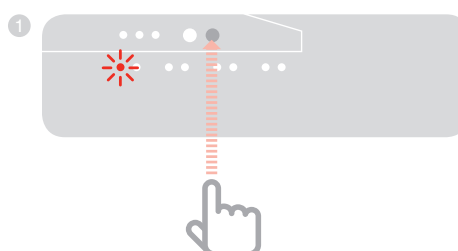
Binding the underfloor heating controller with the **evohome** controller



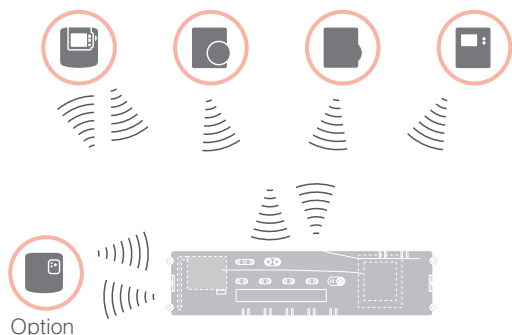
- 1 Press and hold the installation button  on the underfloor heating controller for 2 seconds. The LED lights up. The LED of zone 1 flashes green.
- 2 Press the green connection button  at the **evohome** controller. If binding was successful, the yellow LED of the underfloor heating controller lights up. Binding of the zone (room) is completed.

Repeat the process to bind further zones:

- Press the bind button  at the underfloor heating controller twice (skip red flashing LED). The green LED of the first zone flashes green.



Binding the room device CM927 with the underfloor heating controller



Each zone can be controlled with the same time program with the CM927 operating device.

For information on installing the device please read the CM927 installation instructions.

Activating the integrated room temperature sensor at the CM927

The CM927 operating device has an integrated room temperature sensor. The function of the temperature sensor is specified by Parameter 8:Su in the installation mode:



- 1 Set the slide switch to the "OFF" position.
- 2 Press the **i** and **<**, **>** buttons simultaneously.
1:CL of the first parameter level is displayed.
- 3 Press the **>** button to change to the second parameter level.
1:Ot of the second parameter level is displayed.
- 4 Press the **+** button until **8:Su** is displayed.
- 5 If applicable, use the **▲** and **▼** buttons to select the setting "2" and confirm with the "OK" button.

The integrated room temperature sensor is now used to measure and control the room temperature.



Setting the CM927 to the binding mode




- 1 Set the slide switch to the "OFF" position.
- 2 Keep the **▲** and **▼** and **<** buttons pressed simultaneously until **InSt CO** is displayed.

Binding the room setpoint temperature



- 1 Press and hold the installation button  on the underfloor heating controller for 2 seconds.
The  LED lights up. The LED of zone 1 flashes green.
The underfloor heating controller is in installation mode and waits for the CM927 signal.




In order to assign the CM927 to a different zone, press the installation button  until the LED of the desired zone flashes green.

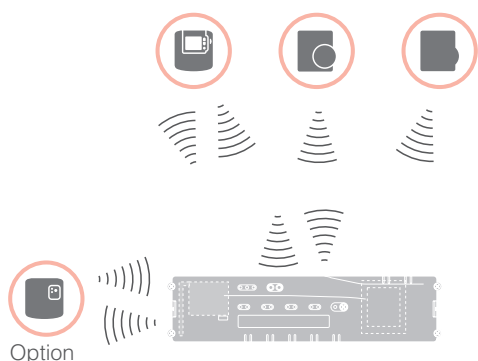


- 2 Send the binding signal by pressing the **OK** button.
The LED of the selected zone at the underfloor heating controller lights continuously yellow.



- 3 Press the installation button  at the underfloor heating controller again.
The red LED at the underfloor heating controller flashes. It is possible to connect a separate room setpoint generator/sensor.
Repeat the process to bind further zones.

Binding the underfloor heating controller without time program




The following section describes how you can assign (bind) the various components of a temperature zone.



Only one room setpoint generator/sensor can be assigned to a temperature zone.

If a room temperature sensor HCF82 is combined with a room setpoint generator HCW82 or DTS92, i.e. assigned to the same zone, first assign the room setpoint generator and then the room temperature sensor.

If the installation button  at the underfloor heating controller is not pressed for longer than 4 minutes, the underfloor heating controller returns automatically to normal mode.

















Without a time program the underfloor heating controller operates with a basic value of 20°C (heating mode) or 26°C (cooling mode). Please refer to Page 21 for information about checking the configuration.

Setting the parameter SU at the room thermostat DTS92



The parameter SU:2 has to be set so that the room thermostat DTS92 can be assigned directly to the underfloor heating controller.


- 1 Keep the  button at the DTS92 pressed until the  symbol is displayed in the bottom right-hand corner of the display.
- 2 Keep the  and  buttons pressed simultaneously until **INst** is displayed.
- 3 Press the  button.
Ot is displayed.
- 4 Press the  button until **Su** is displayed.
- 5 Press the  button.
The current setting of the parameter SU flashes.
- 6 If applicable, use the  and  buttons to select the setting "2" and confirm with the  button.
The parameter SU flashes.
- 7 Keep the  button pressed until flashing stops and the  symbol is displayed in the bottom right-hand corner of the display.
- 8 Keep the  button pressed until the  symbol disappears in the bottom right-hand corner of the display.
The DTS92 is back in normal mode.


Binding the underfloor heating controller without time program – *continued*

Binding the room thermostat DTS92 with the underfloor heating controller

Setting the underfloor heating controller to the binding mode




- 1 Keep the zoning plan at hand.
- 2 Press and hold the installation button  on the underfloor heating controller for 2 seconds.

The  LED lights up. The LED of zone 1 flashes green.


The underfloor heating controller waits for the room thermostat signal.



In order to assign the room thermostat to a different zone, press the installation button  repeatedly until the LED of the desired zone flashes green.

Binding



- 1 Press the installation button  at the underfloor heating controller twice (skip red flashing LED). The green LED of the next zone flashes green.





Establishing a binding to further zones



- 1 Press the installation button  at the underfloor heating controller until the LED of the desired zone flashes green.









Resetting the DTS92 to normal mode



- 1 Keep the  button pressed until the  symbol is displayed in the bottom right-hand corner of the display.
- 2 Again keep the  button pressed until the  symbol disappears in the bottom right-hand corner of the display.

Setting the DTS92 to the binding mode





- 1 Keep the  button pressed 2 seconds long to set the room thermostat to standby.
- 2 Keep the  and  buttons pressed simultaneously for 3 seconds. **INst** should be displayed.
- 3 Press the  button. **COnt** should be displayed.
- 4 Press the  button thrice. **CLr** should be displayed.
- 5 Press the  button once to delete existing connecting data.
- 6 Press the  button. **COnt** should be displayed.
- 7 Press the  button once to send the connecting signal. The room setpoint temperature and the measured room temperature are assigned to the selected zone. The LED of the selected zone at the underfloor heating controller lights continuously yellow.

Binding room setpoint generators/sensors HCW82/HCF82 with the underfloor heating controller

Setting the underfloor heating controller to the binding mode



- 1 Press and hold the installation button  on the underfloor heating controller for 2 seconds.
The  LED lights up. The LED of zone 1 flashes green.

Binding

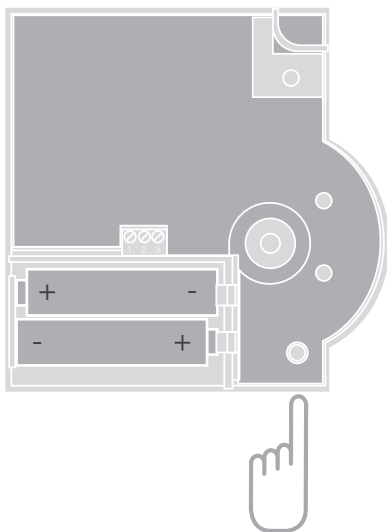


- 2 Press the installation button  at the underfloor heating controller again until the red LED of the desired zone flashes.
- 3 Press the bind button at the HCW82/HCF82.
The HCW82 transmits the room setpoint temperature (offset) and the measured room temperature. The HCF82 transmits only the room temperature to the underfloor heating controller.
The LED of the selected zone at the underfloor heating controller lights continuously red.



The course is the same at the HCW82 and HCF82, however only the room temperature is transferred at HCF82.




3



Cancelling the assignment of zones (rooms)




Cancelling the assignment of a room setpoint generator/sensor of a zone



- 1 Keep the installation button  pressed for at least 2 seconds in order to access the installation mode.
The  I LED lights up. The LED of zone 1 flashes green.
- 2 Press the installation button  repeatedly until the LED of the zone to be removed flashes red.
- 3 Keep the **Mode** button pressed for at least 4 seconds.
The LED of the selected zone extinguishes.
The assignment of the room setpoint generator/sensor has been cancelled.

Cancelling the assignment of the time program (room setpoint) of a zone



- 1 Keep the installation button  pressed for at least 2 seconds in order to access the installation mode.
The  LED lights up. The LED of zone 1 flashes green.
 - 2 Press the installation button  repeatedly until the LED of the zone to be removed flashes green.
 - 3 Keep the **Mode** button pressed for at least 4 seconds.
The LED of the selected zone extinguishes.
The assignment of the time program (room setpoint) has been cancelled.
-

Checking the installation

Checking the configuration




- 1 Press the installation button .
The  LED flashes yellow.
The colours of LEDs 1...8 indicate the configuration of the temperature zones.

LEDs 1...8	Meaning
Off	No device installed
Red	Room setpoint generator/ sensor is installed
Yellow	Time program, setpoint adjuster and room temperature sensor are installed
Green	Time program (room setpoint temperature), e.g. evohome controller

Only if cooling was enabled



- 2 Press the installation button  again.
The colours of LEDs 1...8 indicate the assignment of the time programs to the temperature zones.

LEDs 1...8	Meaning
Red	Time program for heating assigned
Yellow	Time program for heating/ cooling assigned
Green	Time program for cooling assigned



Test the radio communication

Sending test signals



The underfloor heating controller can send a test signal to all the allocated radio receivers in order to test the signal strength.




- 1 Keep the **Mode** and  buttons pressed simultaneously for at least 4 seconds.
The  LED flashes green.
The underfloor heating controller sends a test signal every 5 seconds to the allocated radio receivers. The zone LEDs light up briefly during sending.

- You can exit the test mode by pressing any button.
- After 4 minutes the device changes automatically to normal mode.

Receiving test signals



For information on sending a test signal to the underfloor heating controller read the instructions of the corresponding device (radio test).

- 1 Send a test signal to the underfloor heating controller.
If a test signal is received, the  LED flashes green.
The zone LED of the corresponding zone indicates the strength of the received signal by flashing (1 = sufficient - 5 = strong).

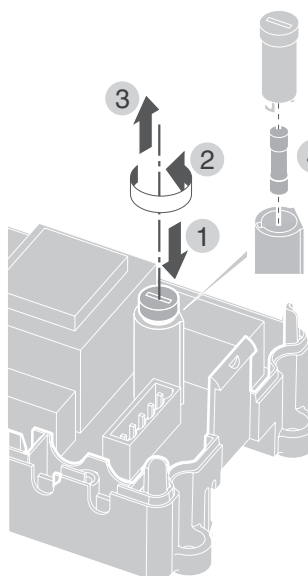
Help with problems

Changing the fuse



Only use ceramic fuses of the type 230 V AC; 2.5 A; fast; 5 x 20 mm.



- 1 Deenergize the device.
- 2 Open the housing (see "Opening the housing" on Page 10).
- 3 Remove the holder with the fuse (Steps 1 to 3).
- 4 Replace the old fuse by a new one.
- 5 Insert the fuse again.
- 6 Close the housing (see "Closing the housing" on Page 13).




Restoring the factory settings at the underfloor heating controller



When the underfloor heating controller is reset to the factory settings, the current configuration (assignment) is deleted. The underfloor heating controller retains its configuration after a power failure.

- 1 Keep the **Mode** and  buttons pressed simultaneously for at least 10 seconds. After 4 seconds the controller changes over to test mode. Continue to keep the buttons pressed until the  LED flashes yellow. The factory settings have been reset at the underfloor heating controller.

Fault displays

If the  LED lights up, a fault is present in at least one temperature zone.

The colours of the zone LEDs 1...8 provide information on the type of fault in the respective temperature zone:




Status	Meaning
Off	No fault
Flashing red	No connection to the room temperature sensor/setpoint adjuster
Flashing yellow	No connection to the setpoint adjuster and evohome controller or CM927 operating device
Flashing green	No connection to the evohome controller or the CM927 operating device



The fault display extinguishes as soon as the fault has been eliminated.

Errors and elimination

Problem	Cause/solution
Power LED does not light up when the power is switched on.	Mains voltage not connected. <ul style="list-style-type: none"> ▶ Check voltage of electrical outlet. ▶ Check fuse at underfloor heating controller.
LEDs 1...8 of the zones do not illuminate green continuously during commissioning.	The room name cannot be assigned. <ul style="list-style-type: none"> ▶ Check the antenna connection. ▶ Reassign the zone, if applicable.
LEDs 1...8 of the zones do not illuminate red continuously during commissioning.	The room setpoint generator/sensor cannot be assigned. <ul style="list-style-type: none"> ▶ Check whether batteries in the room setpoint generator/sensor are inserted properly. ▶ Check the radio connection. ▶ Check the antenna connection.
Rooms are not heated/cooled.	<ul style="list-style-type: none"> ▶ Check heating and inlet temperature. ▶ Check the switch for setting normally open/normally closed (see Page 10). ▶ Check the fuse of the underfloor heating controller. If fuse is defective: <ul style="list-style-type: none"> ▶ Check the thermal actuators for a short circuit. ▶ Change the fuse.

Problem	Cause/solution
The  LED lights up red after commissioning.	There is a fault in one of the temperature zones (see Page 15). <ul style="list-style-type: none"> ▶ Check the radio connection. ▶ Check the antenna connection. ▶ Check whether zone is assigned correctly. ▶ Check the batteries of the assigned devices.
The room temperature is not controlled correctly.	▶ Check whether a room setpoint generator/sensor is assigned to the room.
The  LED flashes rapidly.	No device installed. <ul style="list-style-type: none"> ▶ Install the devices again.
The  LED flashes.	No antenna connected or antenna defective. <ul style="list-style-type: none"> ▶ Check the antenna connection. ▶ If applicable, replace the antenna by a new one.
The red LED of the learned zone flashes after binding.	The evohome controller has not yet sent a valid sensor value of the DTS92 to the underfloor heating controller. The red LED extinguishes after approx. 3 minutes.

Options

Boiler feedback

Connecting the boiler feedback via an analog output (only HCE80/HCC80) to external controllers

The analog output voltage changes depending on the valve position.

- 1 Strip the connections 5.5 mm (see fold-out page, Fig. 5).
- 2 Connect the boiler feedback (see fold-out page, Fig. 4 (9)).

Boiler feedback is possible with the controllers MCR 200, MCR 40, ZG 252 N, Panther and Smile.

- 3 Connect the inputs in accordance with the enclosed instructions to the underfloor heating controller (earth input to Terminal 6, temperature- input to Terminal 5).

Implementing a boiler feedback via a wireless connection (with BDR91)

The relay is switched on and off depending on the valve setting.

Implementing a boiler feedback with an integrated relay 42 V AC, floating contact (only HCE80R/HCC80R)

The relay is switched on and off depending on the valve setting.


- 1 Strip the connections 5.5 mm (see fold-out page, Fig. 5).
- 2 Connect the boiler feedback (see fold-out page, Fig. 4 (9)).

Allocating relay modules for controlling the heat generator

Depending on the heat requirement of the installed rooms the relay module BDR91 controls the heat generator as a function of the valve setting.

Binding the boiler feedback BDR91



- 1 Keep the button at the relay module BDR91 pressed for 5 seconds to activate the binding mode. The red LED at the relay module flashes in the rhythm 0.5 s on/0.5 s off.
- 2 Press the installation button  at the underfloor heating controller. After successful allocation the red LED of the relay module extinguishes.
- 3 To exit the device display press the installation button  at the underfloor heating controller again.



Cooling with CM927

Activating the cooling function at the CM927


The heating/cooling function is specified by Parameter 4:HC in the installation mode.





- 1 Set the slide switch to the "OFF" position.
- 2 Press the **i** and **<**, **>** buttons simultaneously.
1:CL of the first parameter level is displayed.
- 3 Press the **>** button to change to the second parameter level.
1:Ot of the second parameter level is displayed.
- 4 Press the **+** button until **4:HC** is displayed.
- 5 If applicable, use the **▲** and **▼** buttons to select the setting "1" and confirm with the **OK** button.
The cooling function at the CM927 is activated.

Enabling the cooling function at the underfloor heating controller



- 1 Keep the **Mode** button pressed for at least 4 seconds.
The  LED indicates the activated mode:

 LED	Meaning
Lights up green	Cooling mode active
Lights up red	Heating mode active

- 2 Change the setting by pressing the installation button .



The underfloor heating controller switches back to normal mode automatically after 60 seconds.
You can also exit the installation mode by pressing the **Mode** button.

Binding the room temperature setpoint cooling

The cooling function at the CM927 has to be activated to this purpose.



- 1 Press and hold the installation button  on the underfloor heating controller for 2 seconds.
The  LED lights up. The LED of zone 1 flashes green.
- 2 Press the installation button  twice at the underfloor heating controller.
The LED of zone 1 flashes yellow.
The underfloor heating controller waits for the CM927 signal.

Setting the CM927 to the binding mode



- 1 Move the slide switch to the "OFF" position.
- 2 Keep the **▲** and **▼** and **<** buttons pressed simultaneously until **InST CO** is displayed



- 2 Send the binding signal by pressing the **OK** button.
The cooling setpoint is assigned to the selected zone.
The LED of the selected zone at the underfloor heating controller lights continuously yellow.



If cooling is not activated, the LED of Zone 2 flashes red.

toggling between heating and cooling at the CM927 operating device

The changeover from heating to cooling operation and vice versa has to be carried out manually at the CM927.



- 1 Keep the **▲** and **▼** buttons pressed for approx. 5 seconds until "Cooling" or "Heating" respectively is displayed.
The CM927 operates in the displayed operating mode with immediate effect.

Time program for cooling function

If the cooling function was activated, a separate time program for heating and cooling can be assigned to each zone.

Time programs and setpoint values are activated by the switchover contact heating or cooling.

The time program for heating is active when the connection at Terminal 3 and 4 is open at Connector 9 (see fold-out page, Fig. 4 (9)).









If Terminals 3 and 4 are connected, the cooling time program becomes active.



If no time program for cooling is assigned to a zone, the standard room setpoint temperature is 26 °C.

Appendix

Navigation and function overview

Function	Press button	Status LED 	Zone LED	Exit mode
Normal mode			Lights up green = Valve open LED off = Valve closed	
Binding	 > 2 s	Lights up yellow	Flashing	4 min after last action
Delete assigned devices	Mode > 4 s in binding mode	Lights up yellow	Zone LED extinguishes	4 min after last action
Device display	 > 2 s	Flashing yellow	Red = Room actual value Green = Room setpoint value Yellow = Room actual value/room setpoint value	Automatically after 60 s or Press other button
Cooling mode	Mode > 4 s Press the  button in order to activate/de-activate the cooling mode	Green = Cooling mode active Red = Cooling mode inactive	Red = Cooling active and cooling contact open (Cl. 3 and 4) Green = Cooling active and cooling contact closed (Cl. 3 and 4)	Automatically after 60 s or Press the Mode button
Send test signal	Keep  and Mode pressed for 4 s	Flashing green	Light up red when the test signal is sent	Automatically after 10 minutes or Press other button
Receive test signal		Flashing green	Signal strength of the assigned device is indicated by flashing of the respective green zone LED: 1x = Signal sufficient 5x = Signal strong	10 s after last received test signal
Communication error		 LED lights up red	Flashing red = Room actual value error Flashing green = Room setpoint value error Flashing yellow = Room actual value/room setpoint value error	When error has been eliminated
Antenna error		 LED flashes red		When error has been eliminated
Reset all settings	Keep  and Mode pressed for 10 s	Flashing yellow		Release button

Appendix – continued

Technical data

Input/output voltage	230 V AC, 50 Hz
Power consumption	Max. 1750 VA with connected pump (max. 6 A)
Pump relay	Switching contact 230 V AC, max. 6 A (not floating); $\cos\phi \geq 0.7$
Boiler feedback relay	42 V AC; $1\text{ V} < U \leq 42\text{ V}$; $1\text{ mA} < I \leq 100\text{ mA}$; $\cos\phi = 1$
Thermal actuators	2.7 A max. for 1 s; 200 mA; $\cos\phi \geq 0.95$
Ambient temperature	0 to 50°C
Storage temperature	-20 to +70 °C
Humidity	5 to 93% relative humidity
Radio communication	SRD (868,0...870,0) MHz RX Class 2
Range	Typically 30 m, one floor
Dimensions	350 x 82 x 52 mm (W x H x D)
Weight	1 kg
Fuse	Ceramic fuse 5 x 20 mm, 230 V AC; 2.5 A; fast
Material	LOW
Degree of protection	IP30
Fire class	V0

Declaration of conformity

Honeywell hereby declares that HCE80(R) / HCC80(R) complies with the basic requirements and other relevant regulations of guideline 1999/5/EC.

The declaration of conformity of the product can be requested from the manufacturer.

Device and function definition in accordance with EN 60730-1

- Purpose of the device is temperature controlling
- Device fulfils Protection class 1, EN60730-1, EN60730-2-9
- Independently installable electronic control system with fixed installation
- Type of action is Type 1.B (pump relay) and Type 1.C (thermal actuator)
- Temperature
for ball-thrust hardness test for housing components: 75 °C and
for live parts such as terminals: 125 °C
- EMC emitted interference test at 230 V AC +10/-15 %, 1750 VA maximum
- Pollution severity is 2
- Rated voltage is 4000 V (corresponding to Overvoltage category III)

WEEE directive 2012/19/EC



Waste Electrical and Electronic Equipment directive

- At the end of the product life dispose of the packaging and product in a corresponding recycling centre.
- Do not dispose of the unit with the usual domestic refuse.
- Do not burn the product.
- Remove the batteries.
- Dispose of the batteries according to the local statutory requirements and not with the used domestic refuse.



Note for non-EU countries:

This product may only be used if operation in the 868 MHz frequency band is permissible.