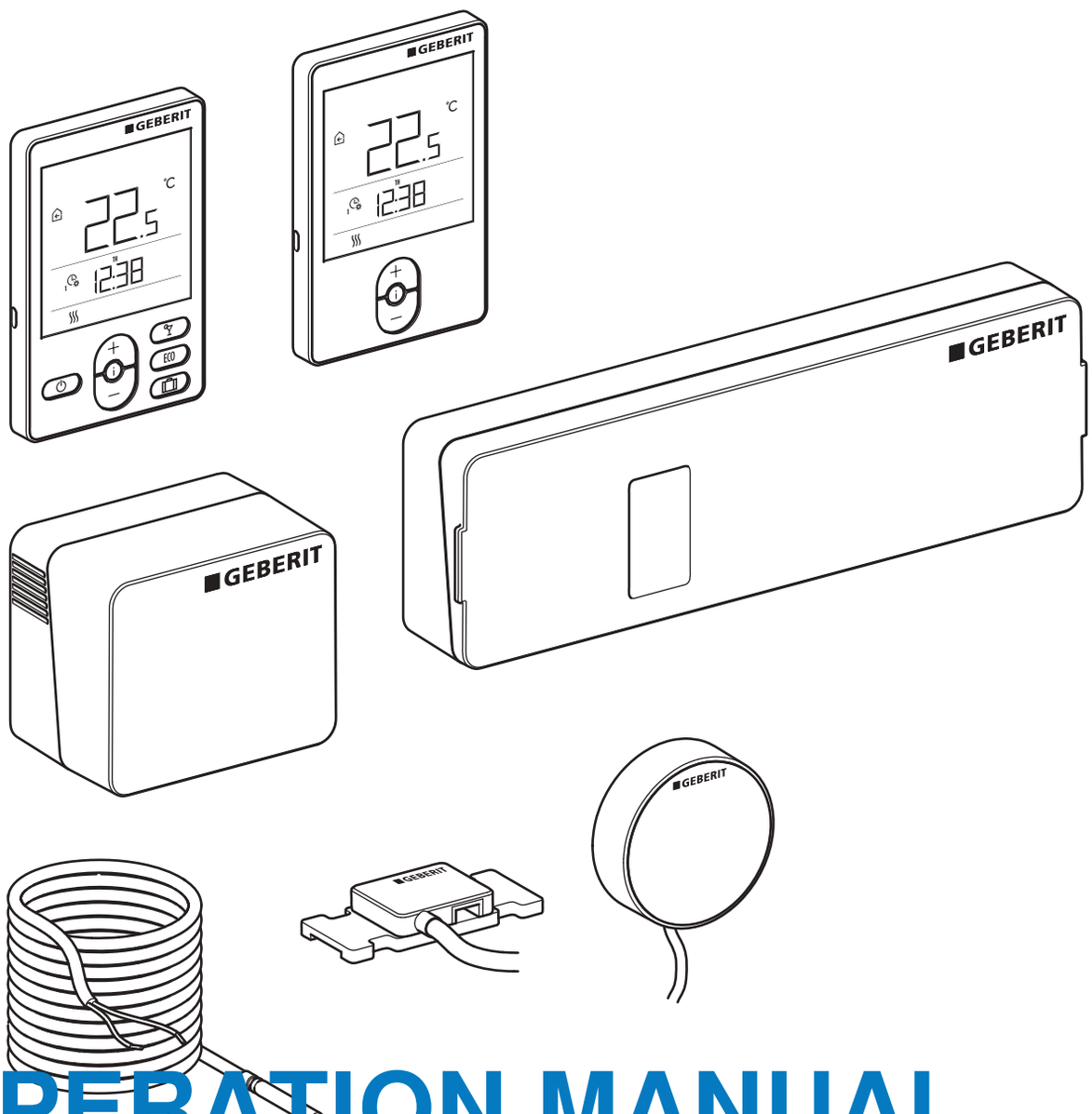
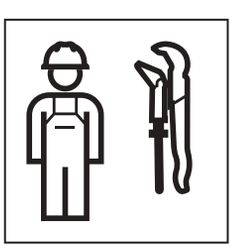
GEBERIT

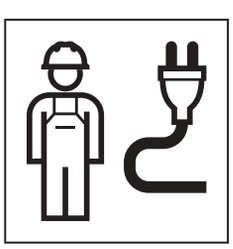


OPERATION MANUAL

BETRIEBSANLEITUNG
MANUEL D'UTILISATION
ISTRUZIONI DI FUNZIONAMENTO

KNOW HOW INSTALLED





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Safety

About this document

This document is intended for operators of the Geberit control system for radiant heating and cooling. The control system comprises the following components:

- Geberit main control unit (art. no. 651.432.00.1)
- Geberit RCD1 room thermostat (art. no. 651.425.00.1, 651.426.00.1)
- Geberit RCD2 room thermostat (art. no. 651.427.00.1, 651.428.00.1)
- Geberit wireless connector (art. no. 651.436.00.1)
- Geberit outside temperature sensor (art. no. 651.437.00.1)
- Geberit pipe temperature sensor (art. no. 651.438.00.1)
- Geberit dew point sensor (art. no. 651.439.00.1)
- Geberit transformer (art. no. 651.440.00.1)
- Geberit 230 V AC valve actuator (art. no. 651.420.00.1)
- Geberit 24 V AC valve actuator (art. no. 651.423.00.1)

Intended use

The Geberit control system for radiant heating and cooling is designed for heating and cooling individual rooms in a temperature range from 2 to 30 °C.

The Geberit control system for radiant heating and cooling can be combined and operated with heating circuit manifolds by other manufacturers. The following prerequisites apply when combining and operating the control system with heating circuit manifolds by other manufacturers:

- manifold connector thread: Euro cone
- manifold inserts: M30 x 1.5 mm
- manifold insert stroke: 3.2 mm
- connection nipple spacing: > 45 mm

Use for any other purpose is deemed improper. Geberit accepts no liability for the consequences of improper use.

Safety notes

- The operator or user may only commission and operate the system to the extent described in this operation manual.
- Only qualified plumbers are permitted to carry out mounting and installation.
- Only use in environments which do not pose a fire risk.
- Do not use any product that has visible defects or damage.
- Do not modify the components or add any additional modules.
- Repairs may only be carried out by a skilled person using original spare parts and accessories.

WARNING
Electric shock
Incorrect installation can lead to injuries.

► Only trained professional electricians are permitted to set up the electrical connection.
► Disconnect the power supply before connecting the cables.

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Product description

System overview

The Geberit control system for radiant heating and cooling is used for temperature and time-controlled regulation of heating or cooling functions in individual rooms. The control system can regulate up to 6 heating zones independently of one another, and can be extended to cover up to 36 heating zones. Up to 4 valve actuators can be activated per heating zone.

The Geberit main control unit is operated with 230 V AC. If valve actuators with a nominal voltage of 24 V AC are being used, then a Geberit transformer is also required.

A Geberit RCD1 or RCD2 room thermostat is used for each zone. The room thermostat detects the room temperature and can be used to define setpoint temperatures, intervals and heating programmes.

The various sensors that are available, and the ability to activate mixing valves and pumps, expand the range of applications in which the system can be used. → See "Application examples", page 25.

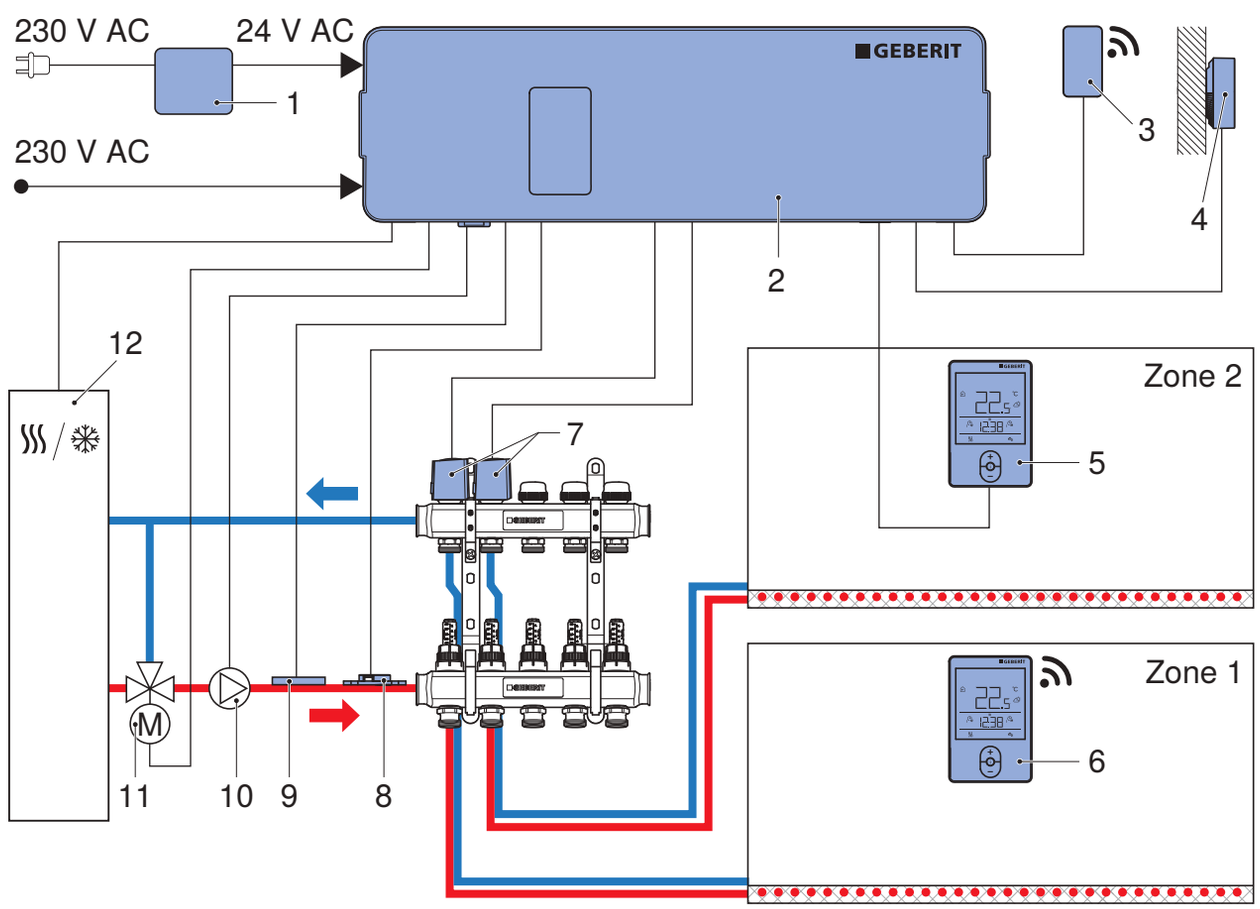

Figure 1: Components of the Geberit control system for radiant heating and cooling

1	Geberit transformer for valve actuators with a nominal voltage of 24 V AC
2	Geberit main control unit
3	Geberit wireless connector for communication with wireless Geberit room thermostats
4	Geberit outside temperature sensor
5	Geberit RCD1 or RCD2 room thermostat, wired
6	Geberit RCD1 or RCD2 room thermostat, wireless
7	Geberit valve actuator, 230 V AC or 24 V AC
8	Geberit dew point sensor, only for use in cooling applications

9	Geberit pipe temperature sensor
10	Activation for external pump, 230 V AC
11	Activation for external mixing valve actuator, 230 V AC
12	External heat generator

- Signal from external heat generator: heating or cooling
- Activation of the external heat generator: On/Off

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Geberit main control unit

Properties

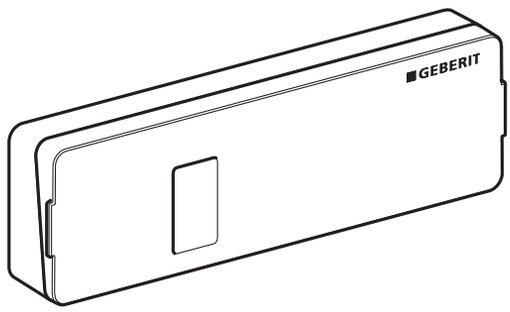

Figure 2: Geberit main control unit

Features:

- regulation of up to 6 time-independent heating or cooling zones
- connection of up to 14 Geberit valve actuators
- 2-step control of the valve actuators
- a Geberit transformer is required for valve actuators with a nominal voltage of 24 V AC
- LED operation indicator
- suitable for wireless and wired room thermostats
- for fastening to the DIN rail in the manifold cabinet

Inputs:

- input for Geberit outside temperature sensor
- input for Geberit pipe temperature sensor
- input for Geberit dew point sensor
- input for switching between heating and cooling
- input for external time switch for activating various functions

Outputs:

- output for external pump
- output for external mixing valve actuator
- output for external heat generator

Communication:

- bus connection for system extensions
- USB port for software updates
- wireless connector port for wireless room thermostats

Technical data

Protection class	I
Protection degree	IP20
Ambient temperature	0–50 °C
Nominal voltage	230 V / 50 Hz
Power consumption	max. 2100 W
Power consumption standby	0.5 W

Installation

The product must be installed in accordance with the accompanying installation manual.

Connections and operating elements

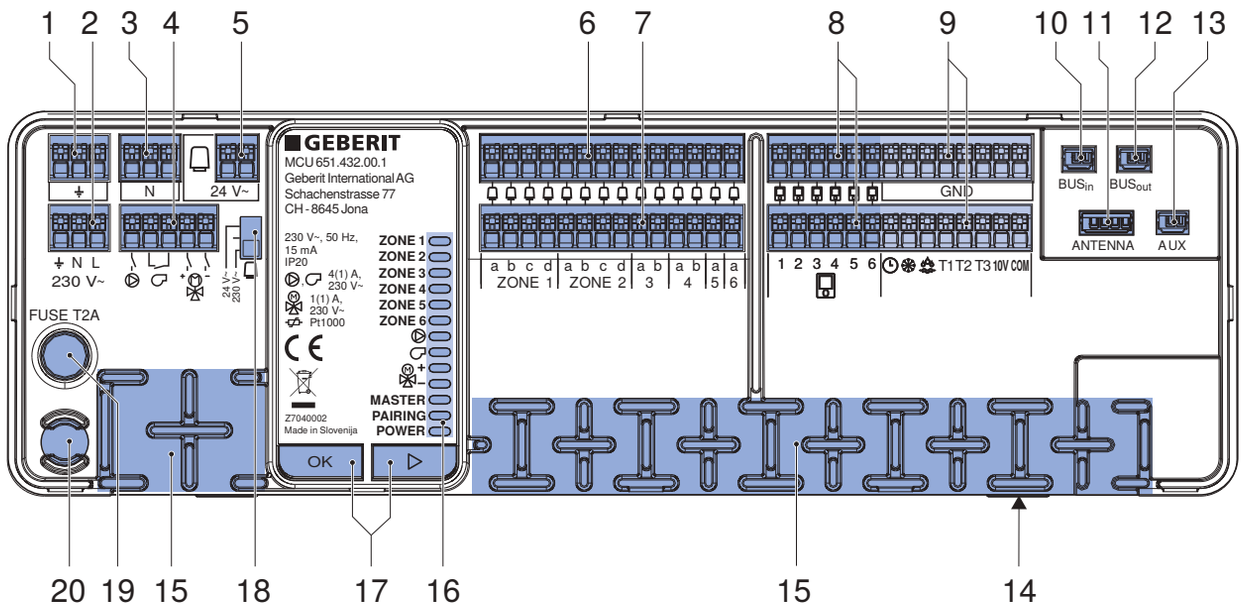

Figure 3: Connections and operating elements

1 Earthing terminal

2 Supply voltage terminal, 230 V AC

3 Neutral conductor terminal

4 Output terminal

- Pump, 230 V AC, max. 3.5 A, not fused
- Heat generator, potential-free contact, max. 3.5 A, not fused (contact open = off, contact closed = on)
- Open mixing valve actuator, 230 V AC, max. 1 A
- Close mixing valve actuator, 230 V AC, max. 1 A

5 Supply voltage terminal, 24 V AC, only when using valve actuators with a nominal voltage of 24 V AC

6 Neutral conductor terminal for valve actuators

7 Terminal for valve actuators

- Heating zone 1 = max. 4 valve actuators, max. 0.6 A per valve actuator
- Heating zone 2 = max. 4 valve actuators, max. 0.6 A per valve actuator
- Heating zone 3 = max. 2 valve actuators, max. 0.6 A per valve actuator
- Heating zone 4 = max. 2 valve actuators, max. 0.6 A per valve actuator
- Heating zone 5 = max. 1 valve actuator, max. 1.2 A per valve actuator
- Heating zone 6 = max. 1 valve actuator, max. 1.2 A per valve actuator

8 Terminal for wired Geberit room thermostats

- Max. 6 room thermostats for heating zones 1–6

9 Terminal for external sensors

- Input for external time switch (contact open = function not active, contact closed = function active). Function is determined by the [externe Zeitschaltuhr] parameter in menu C1.4. → See "Configuring the Geberit main control unit", page 60.
- Input for signal from external heat generator for switching from heating to cooling (contact open = heating, contact closed = cooling)
- Input for Geberit dew point sensor
- T1 input for Geberit pipe temperature sensor
- T2 input for Geberit outside temperature sensor
- T3 reserved for future applications
- 10 V supply voltage for dew point sensor, 10 V DC (third-party product) or for activation of the heat generator, 0–10 V
- COM reserved for future applications

10 BUS_{in} bus connection for system extensions, input

11 ANTENNA connection for Geberit wireless connector to enable communication with wireless room thermostats

12 BUS_{out} bus connection for system extensions, output

13 AUX reserved for future applications

14 USB port for software updates

15 Strain relief for connected cables

16 LED display

17 Buttons for commissioning

18 Supply voltage switching for valve actuators, 230 V AC or 24 V AC

19 Fuse, 2 A, 230 V AC, slow (fuse protection for outputs for valve actuators)

20 Spare fuse, 2 A, 230 V AC, slow

Table 1: Dimensioning of the connection cables

Terminals		Cable type	Cross-section [mm^2]
1, 2, 3, 4	Power supply and outputs	Stranded wire, with end sleeve for strands	0.75–1.5
6, 7	Valve actuators	Stranded wire, with end sleeve for strands	0.5–0.75
8	Room thermostats	Stranded wire, with end sleeve for strands	0.25–0.5
9	Sensors	Stranded wire, with end sleeve for strands	0.18–0.5

Geberit room thermostat

Properties

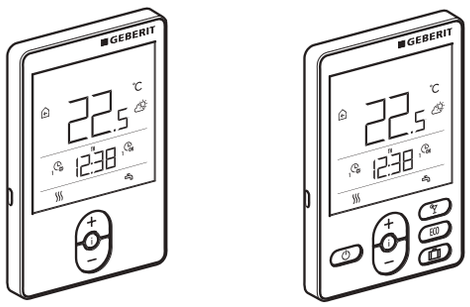

Figure 4: Geberit RCD1 and RCD2 room thermostats

Both versions of the Geberit room thermostat are available as wireless and wired models. A mixture of wireless and wired room thermostats can be used.

The Geberit room thermostats provide the following functions:

Function	RCD1	RCD2
Setting the day and nighttime temperature	✓	✓
Programming various heating intervals	✓	✓
Room temperature indicator	✓	✓
Outside temperature indicator[1)]	✓	✓
Room humidity indicator	✓	✓
Room air pressure indicator	✓	✓
Connection of an external room temperature sensor (AUX connection on the room thermostat)	✓	✓
Indoor air quality indicator	–	✓
Operating mode selection (heating/cooling On/Off)	–	✓
Party function with adjustable running time	–	✓
ECO function with adjustable running time	–	✓
Vacation function; can be programmed for up to 99 days	–	✓

[1)] Geberit outside temperature sensor required

→ See "Operating the Geberit room thermostat", page 45 for more information on operating the room thermostats.

Technical data

	RCD1	RCD2
Power consumption	0.02 W	
Protection degree	IP30	
Protection class	III	
Housing material	PC thermoplastic	
Ambient temperature	0–40 °C	
Storage temperature	-20–65 °C	
External room temperature sensor	NTC 10 kΩ	
Weight	115 g	135 g

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Intervals and heating programmes

Up to 21 intervals can be set in heating programmes CH1 and CH2. Each interval is assigned a switch-on time and a switch-off time. Starting from the switch-on time, the Geberit room thermostat regulates the temperature to the set daytime temperature. Starting from the switch-off time, the room thermostat regulates the temperature to the set nighttime temperature.

The active heating programme (CH1 or CH2) can be selected manually on the room thermostat. Heating programme CH1 can contain the time programmes for normal operation, and heating programme CH2 the time programmes for vacation operation, for example.

Party function (RCD2 only)

The party function enables the set room temperature to be increased for a limited time. It suspends the heating intervals that have been set. The duration of the party function is determined during activation. Once the party function duration has elapsed, the set heating intervals are reinstated. The party function can be deactivated manually before the set duration has elapsed.

ECO function (RCD2 only)

The ECO function enables the set room temperature to be reduced for a limited time. It suspends the heating intervals that have been set. The duration of the ECO function is determined during activation. Once the ECO function duration has elapsed, the set heating intervals are reinstated. The ECO function can be deactivated manually before the set duration has elapsed.

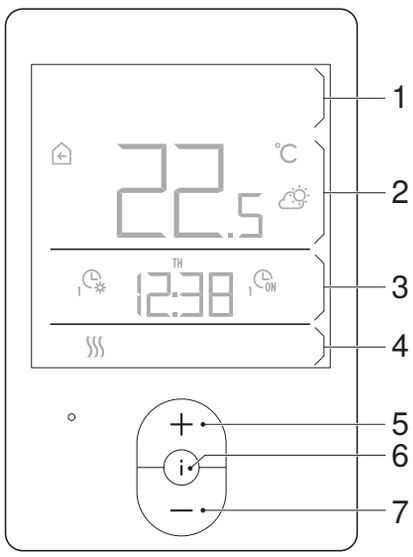
Vacation function (RCD2 only)

The vacation function enables the room temperature to be reduced for a maximum of 99 days. It suspends the heating intervals that have been set. The duration of the vacation function is determined during activation. Once the vacation function duration has elapsed, the set heating intervals are reinstated. The vacation function can be deactivated manually before the set duration has elapsed.

Operating mode selection (RCD2 only)

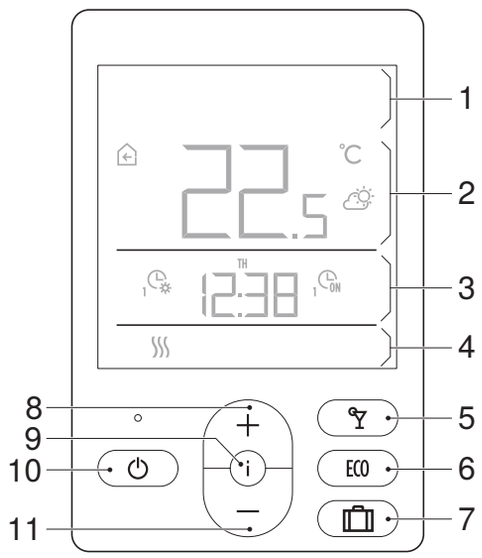
The current operating mode (heating or cooling) can be switched on and off manually by pressing the <On/Off> button. When the operating mode is switched off, the room temperature is regulated to the set frost protection temperature.

Explanation of symbols



Geberit RCD1 room thermostat

1	First indicator on display
2	Second indicator on display
3	Third indicator on display
4	Fourth indicator on display
5	<+> button
6	<Info> button
7	<-> button



Geberit RCD2 room thermostat

1	First indicator on display
2	Second indicator on display
3	Third indicator on display
4	Fourth indicator on display
5	<Party> button
6	<Eco> button
7	<Holiday> button
8	<+> button
9	<Info> button
10	<On/Off> button (operating mode selection)
11	<-> button

Symbol	Description
°C	Measured room temperature, internal temperature sensor
°C	Measured outside air temperature
°C	Measured inlet flow temperature
°C	Measured room temperature, external room temperature sensor
RH%	Measured relative room humidity
°C±	Set daytime temperature
°C±	Set nighttime temperature
°C±	Set frost protection temperature
	Weather forecast: sunny
	Weather forecast: partly cloudy
	Weather forecast: cloudy

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Symbol	Description
	Weather forecast: rainy
	Room heating active
	Room cooling active
	Settings menu active
	Warning
	Note, e.g. frost protection active
	Battery dead[1)]
	Button lock active
	Override via external time switch on main control unit
	Master/slave indicator • Lights up: master • Flashes: slave
	Radio signal strength[1)] and pairing mode indicator
AIR	Indoor air quality, VOC[3)] • Lights up: good indoor air quality (0–100) • Flashes: satisfactory indoor air quality (101–200) • Flashes and : poor indoor air quality (201–500)
1 2	Time programme active, daytime temperature[2)]
1 2	Time programme active, nighttime temperature[2)]
END	Time, end of party function or ECO function[3)]
31 END	Date, end of vacation function[3)]
	Party function active[3)]
ECO	ECO function active[3)]
	Vacation function active[3)]
	Operating mode (heating or cooling) off, frost protection mode active[3)]

[1)] Wireless room thermostats only

[2)] 1: heating programme CH1 active, 2: heating programme CH2 active

[3)] With RCD2 only

Geberit outside temperature sensor

Properties

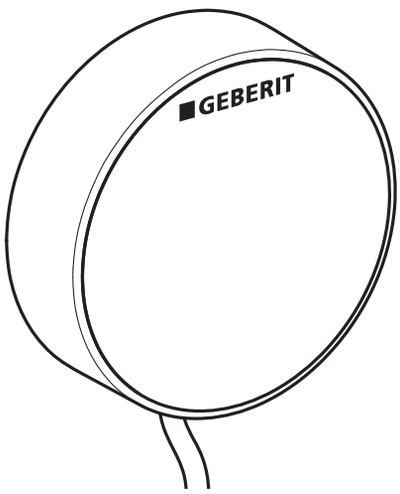

Figure 5: Geberit outside temperature sensor

The Geberit outside temperature sensor detects the outside air temperature in order to regulate the inlet flow temperature. The Geberit main control unit uses the outside air temperature and the heat curve to regulate the inlet flow temperature via a mixing valve. The outside air temperature is also displayed on all Geberit room thermostats connected to the same Geberit main control unit.

→ See "Application examples", page 25 (heating with inlet flow temperature regulation).

→ See "Configuring the Geberit main control unit", page 60 (menu C4.x, setting the heat curve).

Features:

- for detecting the outside air temperature
- for regulating the inlet flow temperature
- for installation on the outer wall

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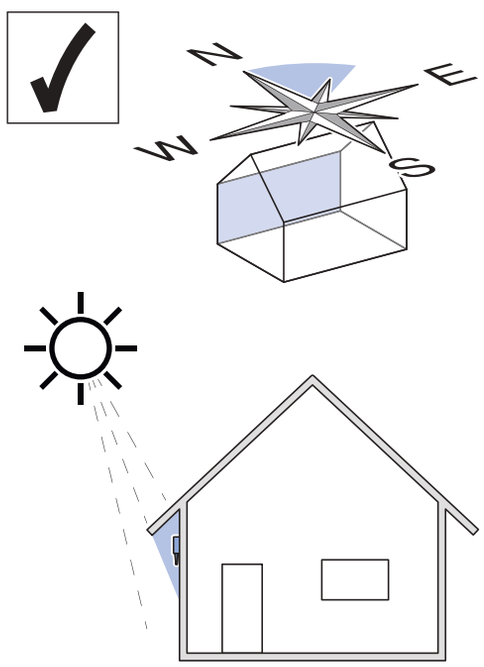
Installation rules

The product must be installed in accordance with the accompanying installation manual.

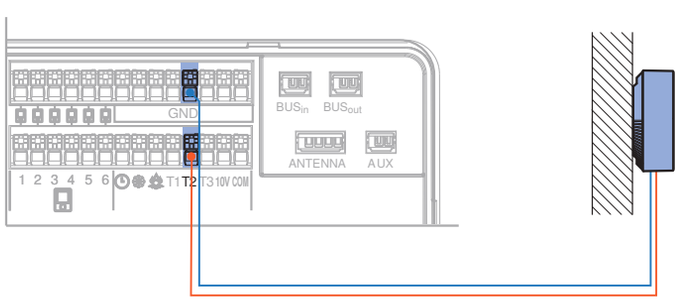
The following rules must be followed when positioning the Geberit outside temperature sensor on the outer wall:



- Install on the coldest building wall, which is normally on the north side of the building.
- If this is not possible, install the outside temperature sensor on the east side of the building in an area without direct exposure to sunlight.
- Avoid direct exposure to sunlight; for example, by installing the sensor under a projecting roof.
- Install the sensor at least 2.5 m above ground level.
- Do not install the sensor above windows, doors or ventilation ducts.

Connecting to the Geberit main control unit

▶ Connect the Geberit outside temperature sensor to terminals T2 and GND.



Maximum cable length: 50 m

Geberit pipe temperature sensor

Properties

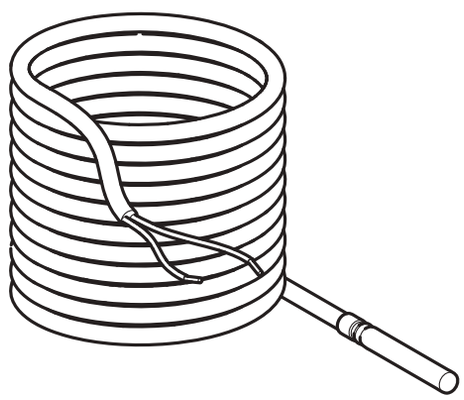


Figure 6: Geberit pipe temperature sensor

If a mixing valve is being used to regulate the inlet flow temperature, then a Geberit pipe temperature sensor must be installed on the inlet flow of the distributor. The pipe temperature sensor detects the current inlet flow temperature for regulation purposes.

Features:

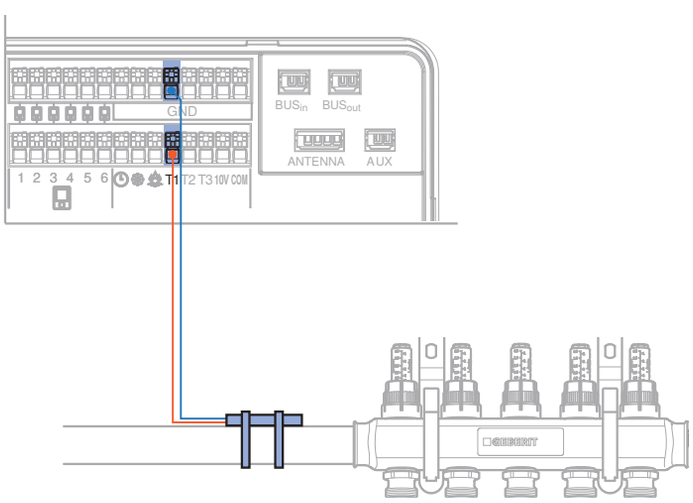
- for detecting the inlet flow temperature
- for installation on the inlet flow of the distributor

Installation

The product must be installed in accordance with the accompanying installation manual.

Connecting to the Geberit main control unit

▶ Connect the Geberit pipe temperature sensor to terminals T1 and GND.



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Geberit dew point sensor

Properties

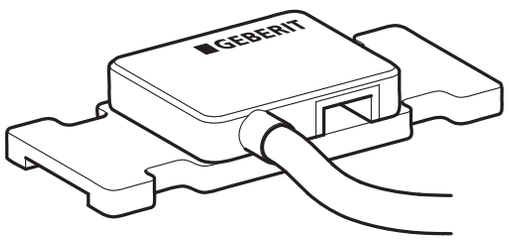


Figure 7: Geberit dew point sensor

If the Geberit control system for radiant heating and cooling is being used for the purpose of cooling, then a Geberit dew point sensor must be installed on the inlet flow of the distributor. The dew point sensor detects the humidity. If a critical level of humidity is reached, the control system closes all the valve actuators, switching off the cooling mode as a result. This ensures that no condensation forms on the components.

Features:

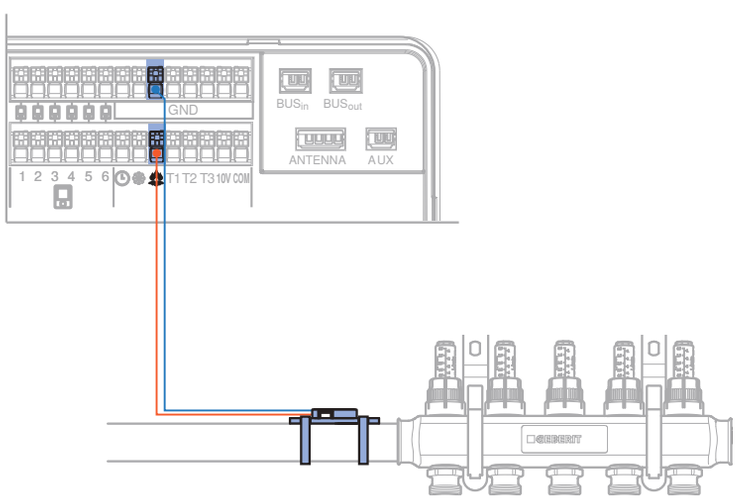
- for detecting the humidity
- for installation on the inlet flow of the distributor
- for switching off the cooling mode if a critical level of humidity is reached

Installation

The product must be installed in accordance with the accompanying installation manual.

Connecting to the Geberit main control unit

▶ Connect output to terminals and GND.



Geberit wireless connector

Properties

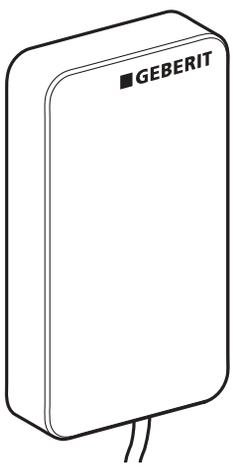


Figure 8: Geberit wireless connector

If wireless Geberit room thermostats are being used, then a Geberit wireless connector is required for wireless communication.

Features:

- for communication between a Geberit main control unit and a wireless Geberit room thermostat
- for installation on the outside of a manifold cabinet

The Geberit manifold cabinets are delivered from the factory fully equipped with a wireless connector bracket on the outside of the metal housing. This offers the following advantages:

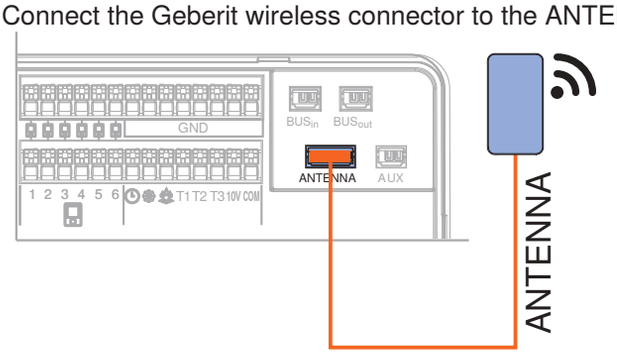
- wireless connector is invisible from the outside
- improved signal transmission, no shielding due to metal housing
- wireless connector can be retrofitted

Installation

The product must be installed in accordance with the accompanying installation manual.

Connecting to the Geberit main control unit

▶ Connect the Geberit wireless connector to the ANTENNA connection.



A separate wireless connector is required for each Geberit main control unit.

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Geberit valve actuator

Properties

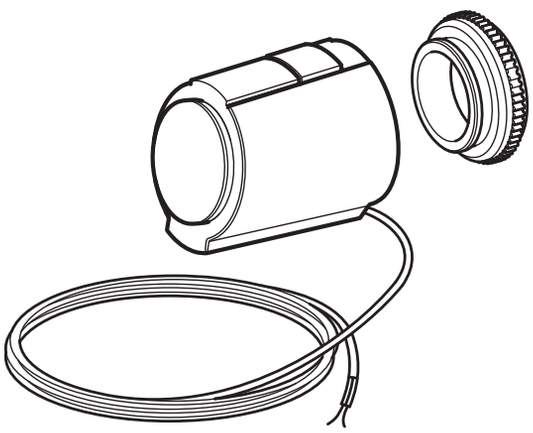


Figure 9: Geberit valve actuator

Features:

- for controlling underfloor heating circuits
- for heating circuit manifolds with Euro cone connector thread and M30 × 1.5 mm manifold inserts
- closed when electricity supply is not present
- a Geberit transformer is required for a nominal voltage of 24 V AC

Technical data

Protection class	II
Protection degree	IP54
Ambient temperature	0–60 °C
Storage temperature	-25 – +65 °C
Actuating force	100 N
Stroke	4 mm
Nominal voltage	230 V AC or 24 V AC
Power consumption	1 W

Installation

1 Screw the adapter ring onto the valve.

2 Position the Geberit valve actuator on the adapter ring and snap it into place by applying pressure from above.

Connecting to the Geberit main control unit

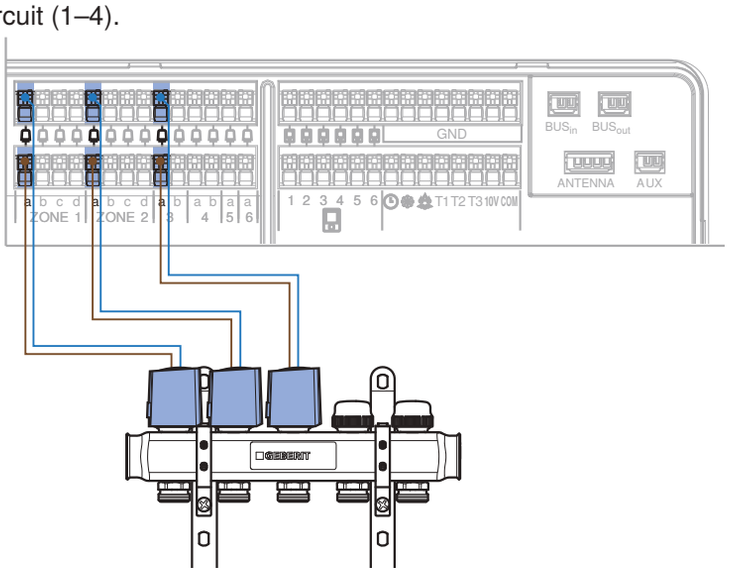
WARNING
Electric shock
Incorrect installation can lead to injuries.

- ► Only trained professional electricians are permitted to set up the electrical connection.
- ► Disconnect the power supply before connecting the cables.

1 When using valve actuators, set the 24 V AC switch for the 24 V AC terminal to the 24 V AC position.

2 Connect the neutral conductor of the Geberit valve actuator to the ⏍ terminal.

3 Connect the line conductor of the Geberit valve actuator to the terminal of the corresponding heating circuit (1–4).



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Geberit transformer

Properties

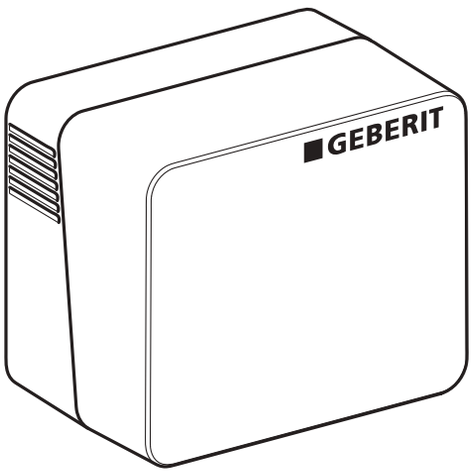


Figure 10: Geberit transformer

Features:

- for supplying power to Geberit 24 V AC valve actuators
- for connecting to Geberit main control units
- in the case of system extensions with several Geberit main control units, supply each main control unit using a separate transformer
- for fastening to the DIN rail in the manifold cabinet → see the installation manual for the Geberit main control unit

Technical data

Nominal voltage	230 V / 50 Hz
Output voltage	24 V AC
Power consumption	38 W
Operating temperature	0–50 °C
Storage temperature	-20–70 °C

Connecting to the Geberit main control unit

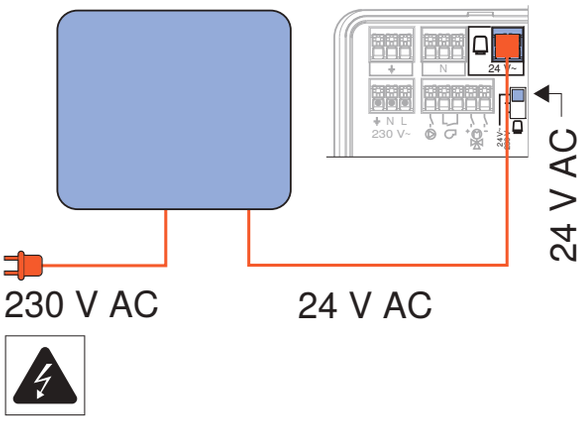
WARNING
Electric shock
Incorrect installation can lead to injuries.

- ► Only trained professional electricians are permitted to set up the electrical connection.
- ► Disconnect the power supply before connecting the cables.

1 Remove the red cover for the 24 V AC terminal.

2 Set the switch for the 24 V AC terminal to the 24 V AC position.

3 Connect the Geberit transformer to the 24 V AC connection.



The Geberit transformer is equipped with a mains plug and a plug for 24 V AC.

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Application examples

Each of the following application examples shows 1 Geberit main control unit with 3 heating zones and 1 Geberit valve actuator per heating zone. All application examples can be extended as follows:

- max. 6 heating zones per Geberit main control unit
  - heating zone 1 and 2: max. 4 Geberit valve actuators
  - heating zone 3 and 4: max. 2 Geberit valve actuators
  - heating zone 5 and 6: max. 1 Geberit valve actuator
- max. 6 Geberit room thermostats per Geberit main control unit

  A room thermostat can regulate 1 or more heating zones.
- A Geberit main control unit can be extended to include up to 5 additional main control units. This allows up to 36 heating zones to be regulated. The main control units are connected using the Geberit bus cable, art. no. 651.433.00.1. → See "Bus connector for main control unit", page 38
- For each Geberit main control unit, the Geberit room thermostat that regulates heating zone 1 can be defined as the master. The master can override certain functions of the other room thermostats, such as time programmes. → See "Setting the basic functions", page 45

Heating, wired room thermostat

Application example for regulating underfloor heating in storey distribution:

- hydraulic scheme 1 → see "Configuring the Geberit main control unit", page 60 (menu C1.1)
- single-room regulation for up to 6 independent heating zones and 14 heating circuits
- operating mode: heating
- 1 Geberit RCD1 or RCD2 room thermostat, wired, for 1 or more heating zones
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)

Table 2: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.425.00.1 651.427.00.1	Geberit RCD1 room thermostat Geberit RCD2 room thermostat
1–14	651.420.00.1 651.423.00.1	Geberit 230 V AC valve actuator Geberit 24 V AC valve actuator
1	651.440.00.1	Geberit transformer (for 24 V AC valve actuators)

968.663.00.0(01)

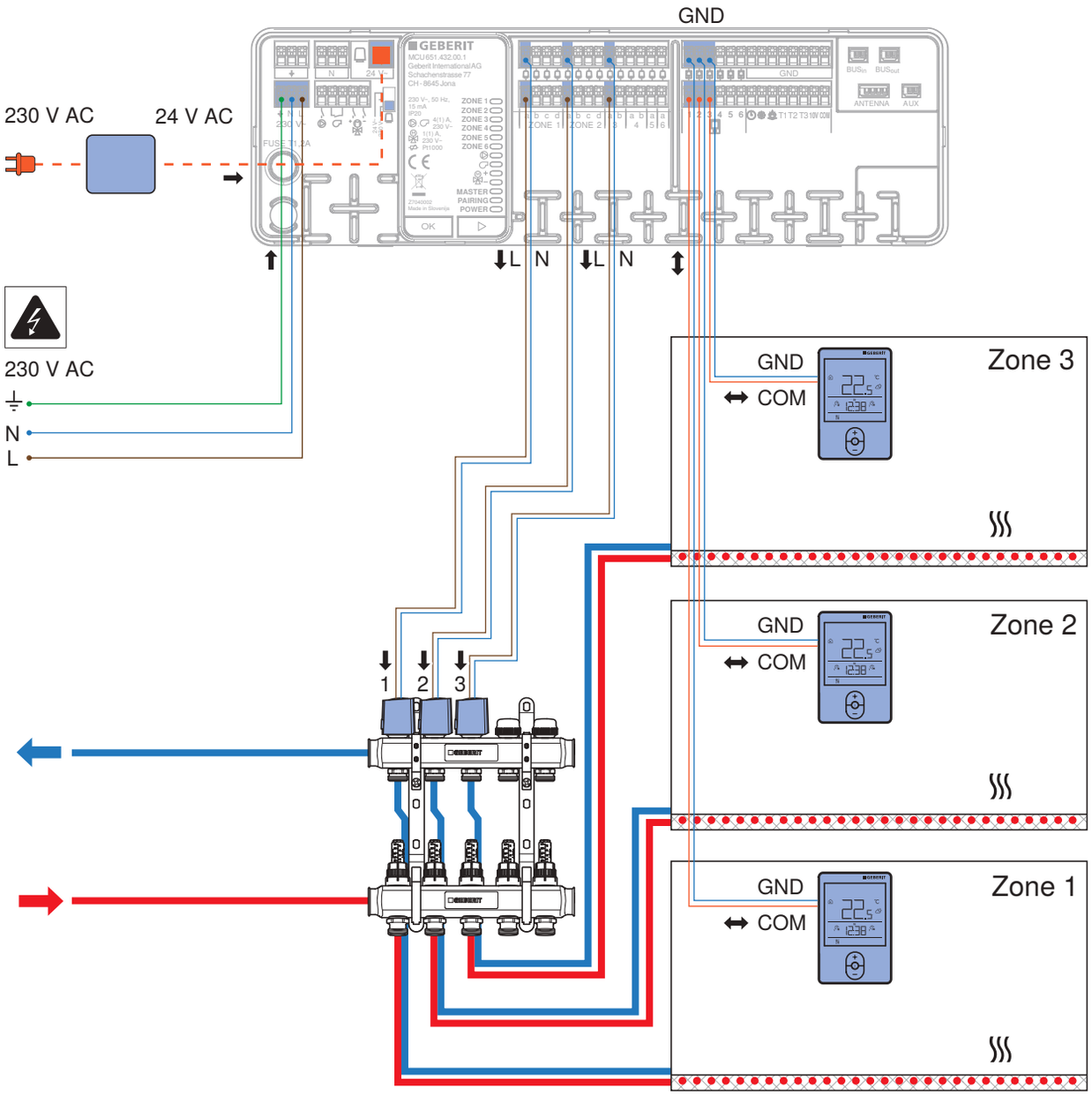

Figure 11: Connection diagram: heating, wired room thermostat

Heating, wireless room thermostat

Application example for regulating underfloor heating in storey distribution:

- hydraulic scheme 1 → See "Configuring the Geberit main control unit", page 60 (menu C1.1)
- single-room regulation for up to 6 independent heating zones and 14 heating circuits
- operating mode: heating
- 1 Geberit RCD1 or RCD2 room thermostat, wireless, for 1 or more heating zones
- Geberit wireless connector for communication with wireless Geberit room thermostats
  All Geberit manifold cabinets are equipped with a wireless connector holder at the factory.
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)

Table 3: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.426.00.1 651.428.00.1	Geberit RCD1 room thermostat, wireless Geberit RCD2 room thermostat, wireless
1	651.436.00.1	Geberit wireless connector
1–14	651.420.00.1 651.423.00.1	Geberit 230 V AC valve actuator Geberit 24 V AC valve actuator
1	651.440.00.1	Geberit transformer (for 24 V AC valve actuators)

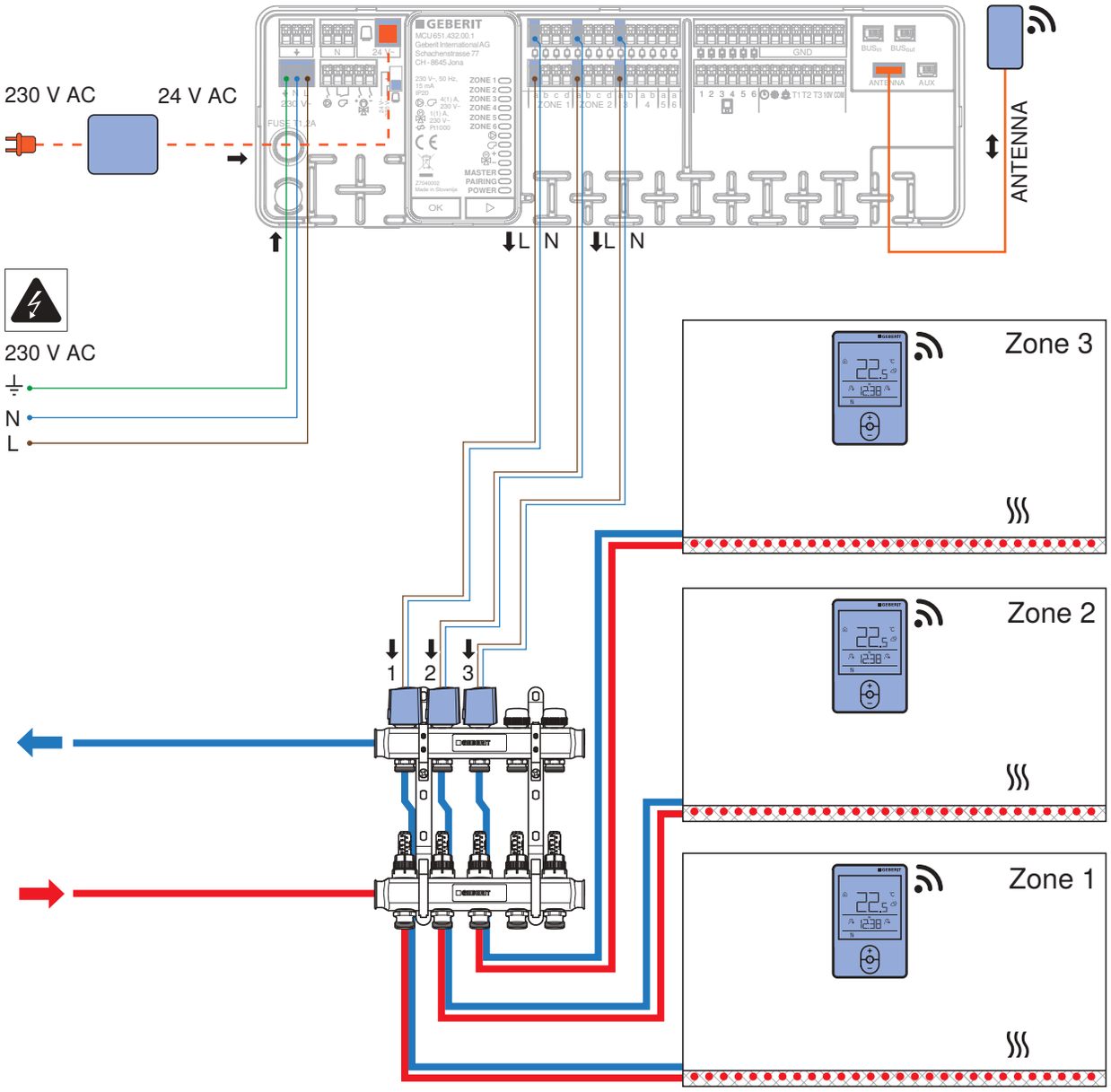

Figure 12: Connection diagram: heating, wireless room thermostat

Heating/cooling, wired room thermostat

Application example for regulating underfloor heating/cooling circuits in storey distribution:

- hydraulic scheme 2 → see "Configuring the Geberit main control unit", page 60 (menu C1.1)
- single-room regulation for up to 6 independent heating/cooling zones and 14 heating/cooling circuits
- operating mode: heating or cooling
- 1 Geberit RCD1 or RCD2 room thermostat, wired, for 1 or more heating/cooling zones
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating/cooling circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)
- switch-on/switch-off of an external heat generator when heating or cooling is required (contact open = off, contact closed = on)
- activation of an external circulation pump, 230 V AC

  The circulation pump and the heat generator are switched on as soon as a Geberit room thermostat reports that heating or cooling is required, and one of the Geberit valve actuators is opened.
- switching between heating/cooling by means of signal from external heat generator (contact open = heating, contact closed = cooling)
- Geberit dew point sensor for detecting the level of humidity at the inlet flow of the distributor

  All valve actuators are closed if a critical level of humidity is reached
- T1 Geberit pipe temperature sensor for detecting the inlet flow temperature for humidity measurement purposes

Table 4: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.425.00.1 651.427.00.1	Geberit RCD1 room thermostat Geberit RCD2 room thermostat
1	651.439.00.1	Geberit dew point sensor
1	651.438.00.1	Geberit pipe temperature sensor
1–14	651.420.00.1 651.423.00.1	Geberit 230 V AC valve actuator Geberit 24 V AC valve actuator
1	651.440.00.1	Geberit transformer (for 24 V AC valve actuators)

968.663.00.0(01)

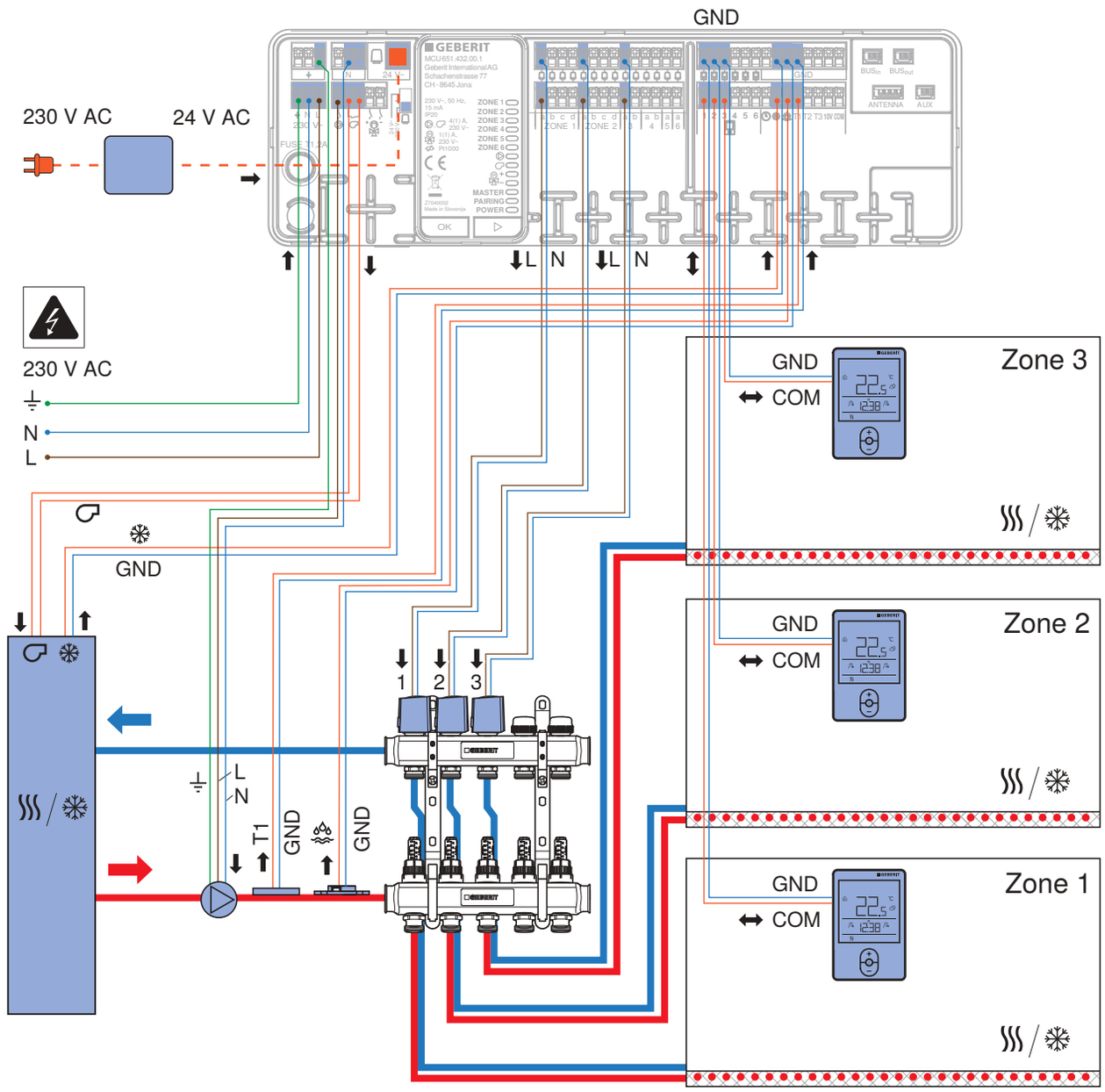

Figure 13: Connection diagram: heating/cooling, wired room thermostat

Heating/cooling, wireless room thermostat

Application example for regulating underfloor heating/cooling circuits in storey distribution:

- hydraulic scheme 2 → See "Configuring the Geberit main control unit", page 60 (menu C1.1)
- single-room regulation for up to 6 independent heating/cooling zones and 14 heating/cooling circuits
- operating mode: heating or cooling
- 1 Geberit RCD1 or RCD2 room thermostat, wireless, for 1 or more heating/cooling zones
- Geberit wireless connector for communication with wireless Geberit room thermostats

  All Geberit manifold cabinets are equipped with a wireless connector holder at the factory.
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating/cooling circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)
- switch-on/switch-off of an external heat generator when heating or cooling is required (contact open = off, contact closed = on)
- activation of an external circulation pump, 230 V AC

  The circulation pump and the heat generator are switched on as soon as a Geberit room thermostat reports that heating or cooling is required, and one of the Geberit valve actuators is opened.
- switching between heating/cooling by means of signal from external heat generator (contact open = heating, contact closed = cooling)
- Geberit dew point sensor for detecting the level of humidity at the inlet flow of the distributor

  All valve actuators are closed if a critical level of humidity is reached
- T1 Geberit pipe temperature sensor for detecting the inlet flow temperature for humidity measurement purposes

Table 5: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.426.00.1 651.428.00.1	Geberit RCD1 room thermostat, wireless Geberit RCD2 room thermostat, wireless
1	651.436.00.1	Geberit wireless connector
1	651.439.00.1	Geberit dew point sensor
1	651.438.00.1	Geberit pipe temperature sensor
1–14	651.420.00.1 651.423.00.1	Geberit 230 V AC valve actuator Geberit 24 V AC valve actuator
1	651.440.00.1	Geberit transformer (for 24 V AC valve actuators)

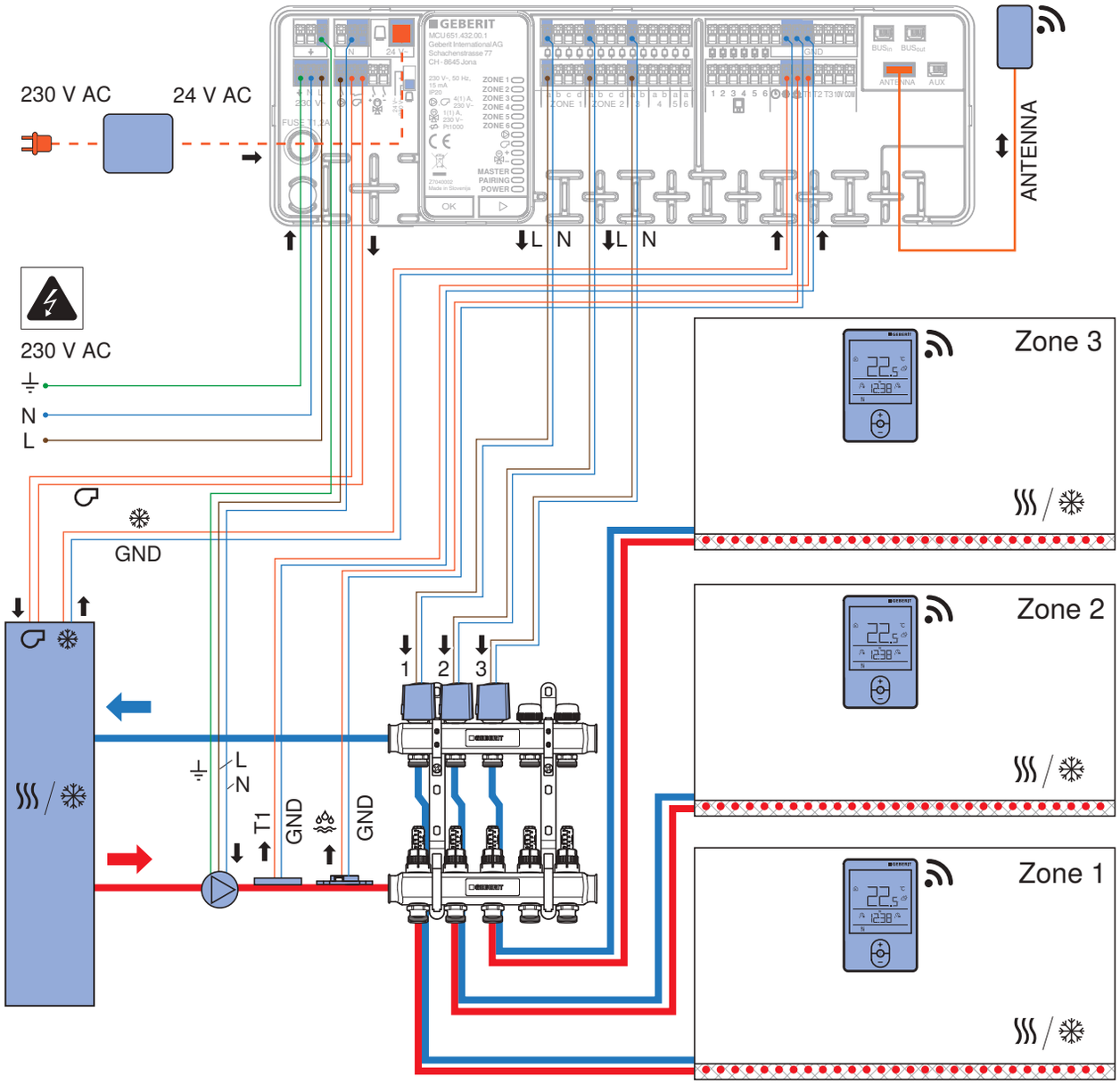

Figure 14: Connection diagram: heating/cooling, wireless room thermostat

Heating/cooling with inlet flow temperature regulation, wired room thermostat

Application example for regulating underfloor heating in storey distribution with inlet flow temperature regulation and outside air temperature detection:

- hydraulic scheme 3 → See "Configuring the Geberit main control unit", page 60 (menu C1.1)
- single-room regulation for up to 6 independent heating zones and 14 heating circuits
- operating mode: heating or cooling
- 1 Geberit RCD1 or RCD2 room thermostat, wired, for 1 or more heating zones
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)
- switch-on/switch-off of an external heat generator when heating or cooling is required (contact open = off, contact closed = on)
- activation of an external circulation pump, 230 V AC

  The circulation pump and the heat generator are switched on as soon as a Geberit room thermostat reports that heating or cooling is required, and one of the Geberit valve actuators is opened.
-  switching between heating/cooling by means of signal from external heat generator (contact open = heating, contact closed = cooling)
- T1 Geberit pipe temperature sensor for detecting the inlet flow temperature
- T2 Geberit outside temperature sensor for detecting the outside air temperature for the purpose of regulating the inlet flow temperature and for displaying information on the room thermostat → see "Configuring the Geberit main control unit", page 60 (menu C4.x, setting the heat curve).
-  Geberit dew point sensor for detecting the level of humidity at the inlet flow of the distributor

  All valve actuators are closed if a critical level of humidity is reached
- activation of an external 3-way 230 V AC mixing valve actuator for regulating the inlet flow temperature

Table 6: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.425.00.1 651.427.00.1	Geberit RCD1 room thermostat Geberit RCD2 room thermostat
1	651.437.00.1	Geberit outside temperature sensor
1	651.439.00.1	Geberit dew point sensor
1	651.438.00.1	Geberit pipe temperature sensor
1–14	651.420.00.1	Geberit 230 V AC valve actuator

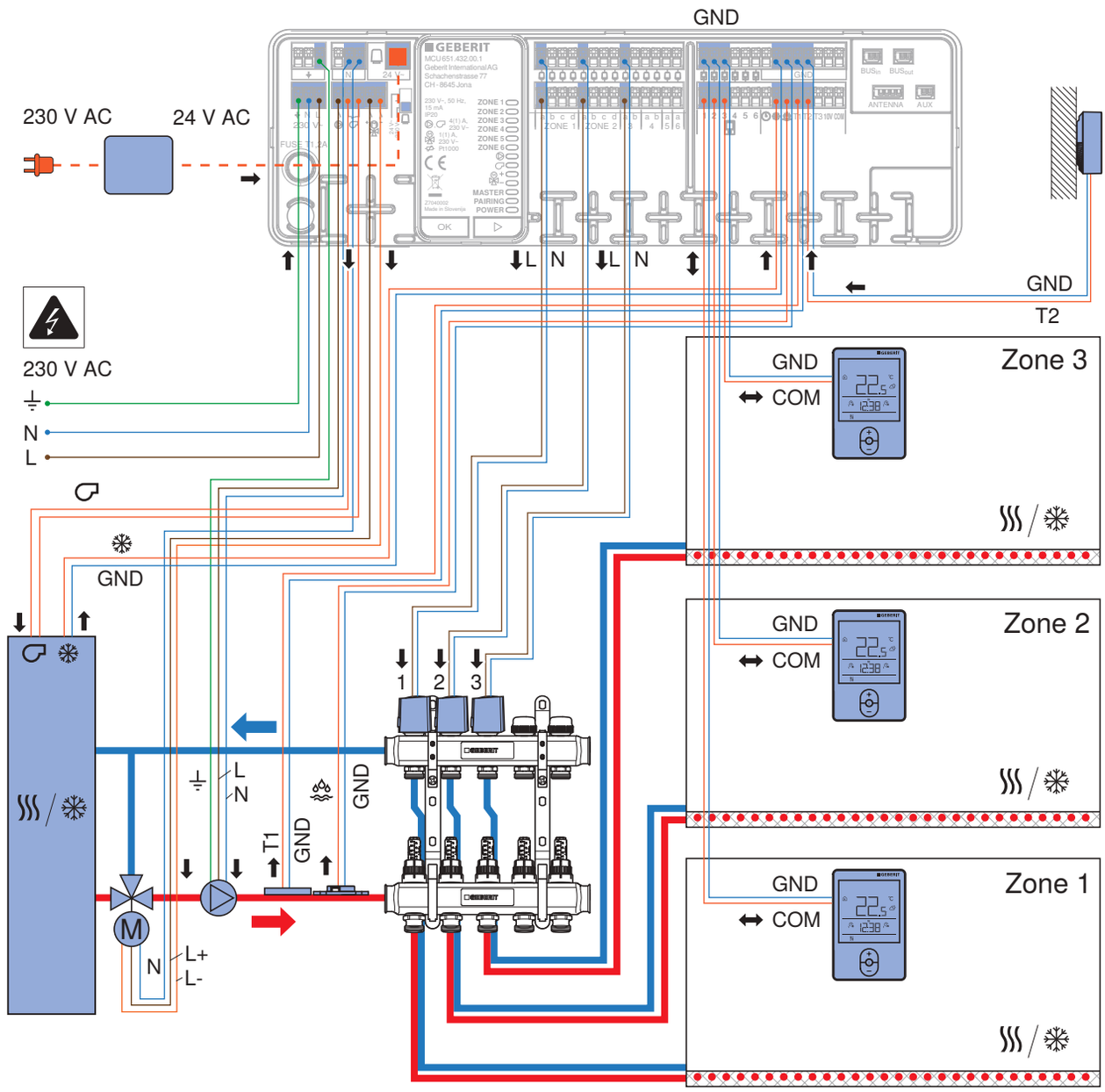

Figure 15: Connection diagram: heating with inlet flow temperature regulation, wired room thermostat, with outside air temperature detection

Heating/cooling with inlet flow temperature regulation, wireless room thermostat

Application example for regulating underfloor heating in storey distribution with inlet flow temperature regulation and outside air temperature detection:

- hydraulic scheme 3 → see "Configuring the Geberit main control unit", page 60 (menu C1.1).
- single-room regulation for up to 6 independent heating zones and 14 heating circuits
- operating mode: heating or cooling
- 1 Geberit RCD1 or RCD2 room thermostat, wireless, for 1 or more heating zones
- Geberit wireless connector for communication with wireless Geberit room thermostats

  All Geberit manifold cabinets are equipped with a wireless connector holder at the factory.
- 1 Geberit 230 V AC or 24 V AC valve actuator per heating circuit
- a Geberit transformer is required for 24 V AC valve actuators (set switch on the Geberit main control unit to the 24 V position)
- switch-on/switch-off of an external heat generator when heating or cooling is required (contact open = off, contact closed = on)
- activation of an external circulation pump, 230 V AC

  The circulation pump and the heat generator are switched on as soon as a Geberit room thermostat reports that heating or cooling is required, and one of the Geberit valve actuators is opened.
- ❄ switching between heating/cooling by means of signal from external heat generator (contact open = heating, contact closed = cooling)
- T1 Geberit pipe temperature sensor for detecting the inlet flow temperature
- T2 Geberit outside temperature sensor for detecting the outside air temperature for the purpose of regulating the inlet flow temperature and for displaying information on the room thermostat → see "Configuring the Geberit main control unit", page 60 (menu C4.x, setting the heat curve).
- Geberit dew point sensor for detecting the level of humidity at the inlet flow of the distributor

  All valve actuators are closed if a critical level of humidity is reached
- activation of an external 3-way 230 V AC mixing valve actuator for regulating the inlet flow temperature

Table 7: Components

Number	Article number	Designation
1	651.432.00.1	Geberit main control unit
1–6	651.426.00.1 651.428.00.1	Geberit RCD1 room thermostat, wireless Geberit RCD2 room thermostat, wireless
1	651.436.00.1	Geberit wireless connector
1	651.437.00.1	Geberit outside temperature sensor
1	651.439.00.1	Geberit dew point sensor
1	651.438.00.1	Geberit pipe temperature sensor
1–14	651.420.00.1	Geberit 230 V AC valve actuator

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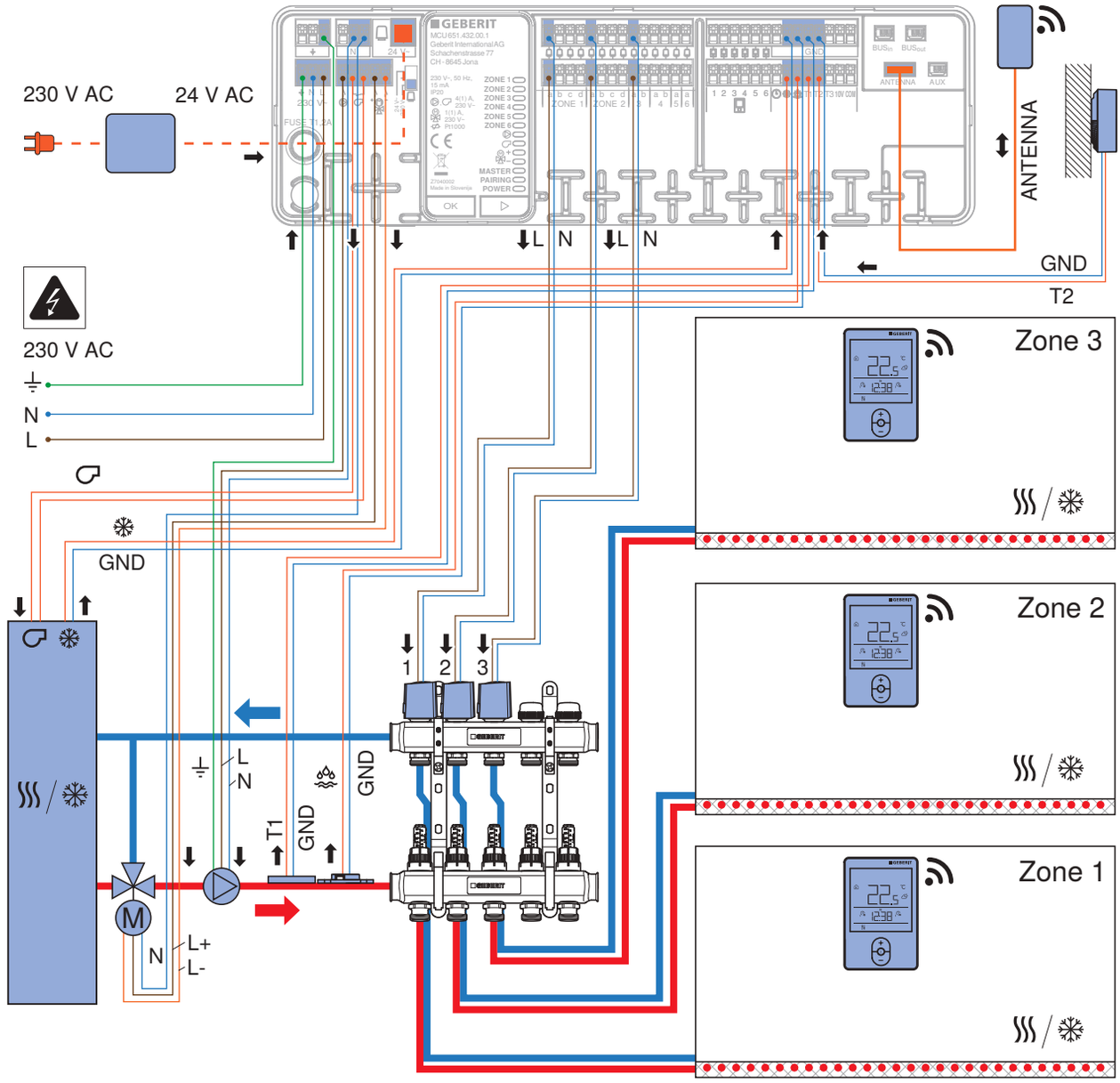


Figure 16: Connection diagram: heating with inlet flow temperature regulation, wireless room thermostat, with outside air temperature detection

Bus connector for main control unit

Application example for extending the system to include additional Geberit main control units:

Up to 6 Geberit main control units can be connected to one another via a bus connector. One of the main control units is defined as the master. The master controls the other main control units, which are configured as slaves.

It is possible to extend all the application examples on the previous pages in the same way. The graphic below only shows the components for the first application example.

- Single-room regulation for up to 36 independent heating zones and 84 heating circuits
- Master/slave configuration via <OK> and <▷> buttons on the main control unit → See "Commissioning the Geberit main control unit", page 40.
- The values of sensors connected to the master are transferred to the slaves
- Geberit main control units connected using Geberit bus cable

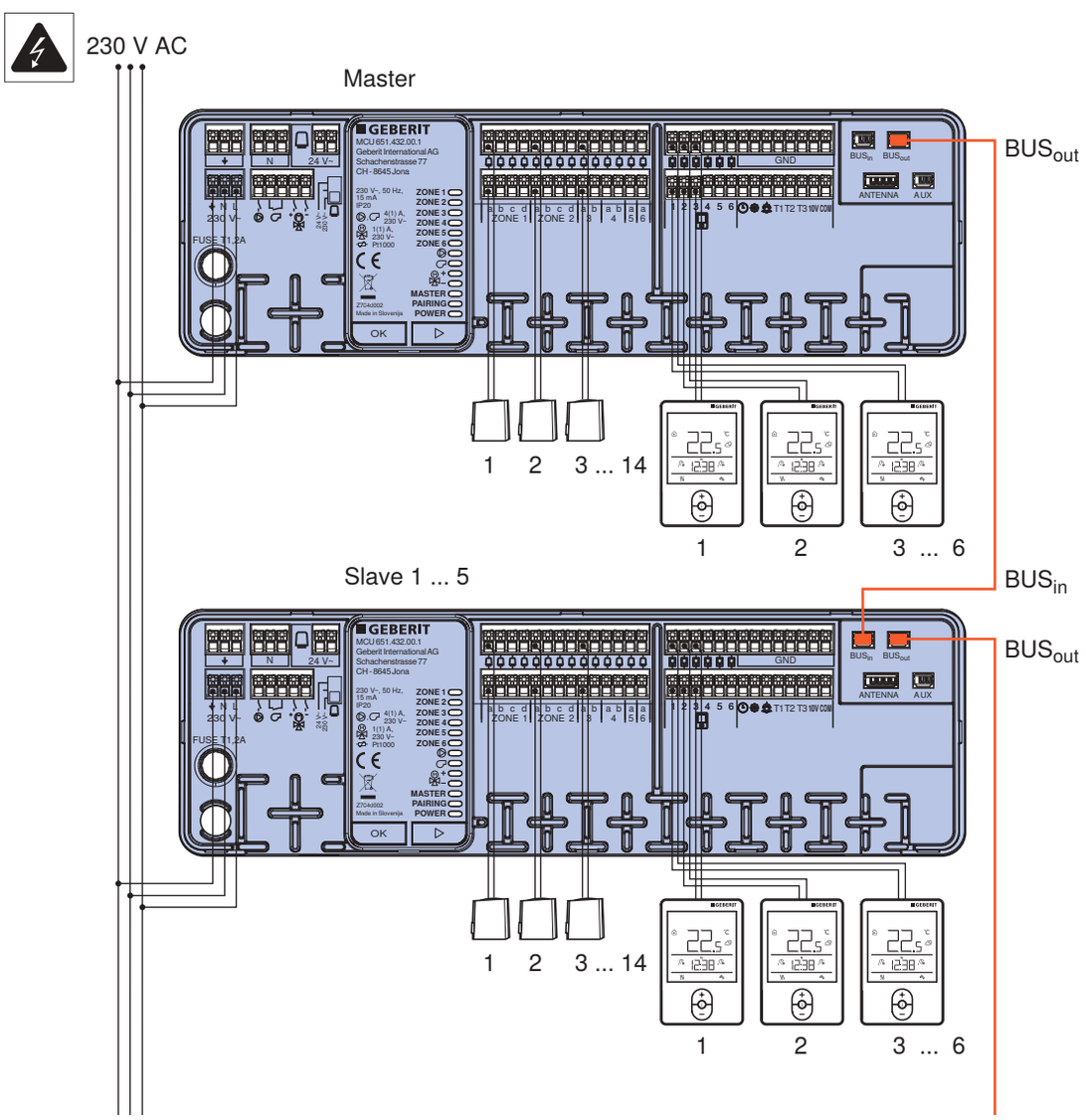


Figure 17: Connection diagram: system extension

Table 8: Components

Number	Article number	Designation
2–6	651.432.00.1	Geberit main control unit
1–5	651.433.00.1	Geberit bus cable

Operating the Geberit main control unit

LED display

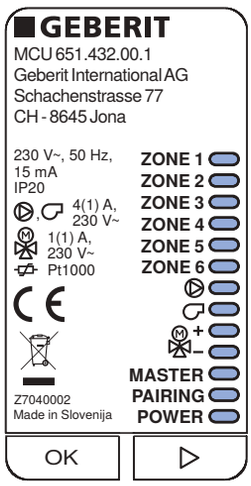


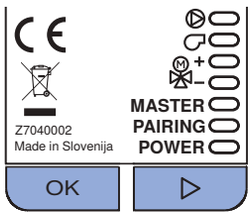
Table 9: Status display in normal operation

LED	Status
ZONE 1–6	Valve actuators of the corresponding heating zone are open
	Pump on
	Heat generator on
	Mixing valve actuator opening
	Mixing valve actuator closing
MASTER	Bus connection of several Geberit main control units • Lights up: main control unit is configured as master • Flashes: main control unit is configured as slave
PAIRING	[Pairing Raumthermostat/Heizzonen] submenu active, off in normal operation
POWER	Supply voltage on

Not only do the LEDs display the status, they are also used for commissioning the Geberit main control unit.
→ See "Commissioning the Geberit main control unit", page 40.

Commissioning the Geberit main control unit

The Geberit main control unit is commissioned using the <OK> and <▷> buttons. A room thermostat is used for configuring the connected sensors, and for setting the parameters for regulating the room temperature and inlet flow temperature. → See "Configuring the Geberit main control unit", page 60.



The <OK> button is used for accessing the commissioning menu and confirming the settings. The <▷> button is used for selecting the submenus and settings.

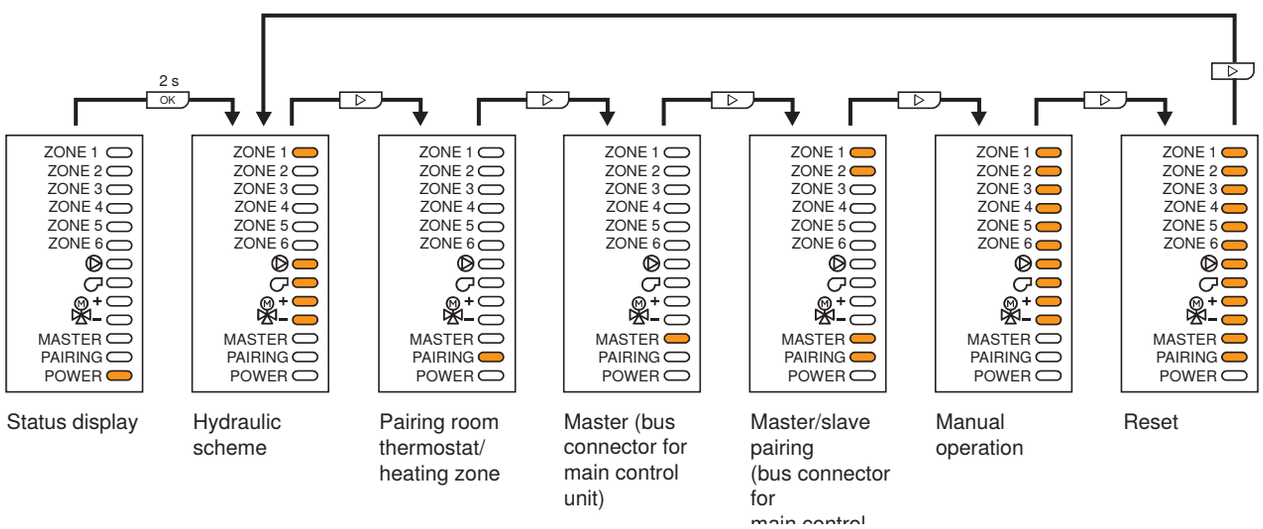


Figure 18: Overview of the commissioning menu

Selecting the hydraulic scheme

The hydraulic scheme determines which functions are performed by the Geberit main control unit and which sensors are connected. The hydraulic schemes are described in the "Application examples", page 25 chapter. The following hydraulic schemes can be selected:

- hydraulic scheme 1: heating → see "Heating, wired room thermostat", page 26.
- hydraulic scheme 2: heating and cooling → see "Heating/cooling, wired room thermostat", page 30.
- hydraulic scheme 3: heating with inlet flow temperature regulation → see "Heating/cooling with inlet flow temperature regulation, wired room thermostat", page 34.

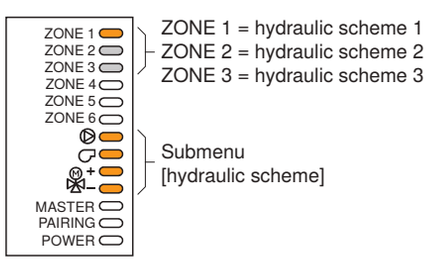
The following example shows the change from hydraulic scheme 1 to hydraulic scheme 3.

Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

✓ The [Hydraulikschema] submenu and the [ZONE 1] LED are shown.



2 Press the <OK> button.

✓ [ZONE 1] LED flashes (hydraulic scheme 1).

3 Press the <▷> button until the [ZONE 3] LED flashes (hydraulic scheme 3).

4 Press the <OK> button to confirm.

✓ [ZONE 3] LED flashes.

5 Press and hold the <OK> button for 2 seconds.

✓ [ZONE 3] LED lights up.

6 Press and hold the <OK> button for 2 seconds.

✓ Status display is shown again.

Pairing room thermostats and heating zones

One or more heating zones must be paired with each Geberit room thermostat. This applies to both wired and wireless room thermostats.

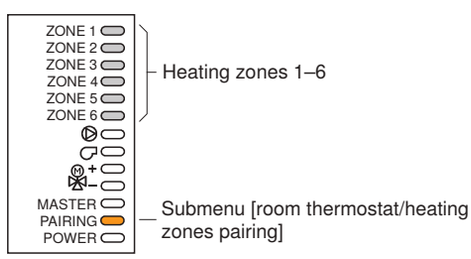
Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

2 Press the <▷> button.

✓ The [Pairing Raumthermostat/Heizzone] submenu is displayed.



3 Press the <OK> button.

✓ The [PAIRING] and [ZONE 1] LEDs flash.

4 On the Geberit room thermostat you wish to select for heating zone 1, press and hold the <+> and <-> buttons simultaneously for 2 seconds.

✓ [PAIr] is displayed on the room thermostat.

✓ Following successful pairing, the number of the paired heating zone is displayed for 3 seconds (e.g. [ZonE 1]).

✓ The [PAIRING] and [ZONE 2] LEDs flash on the Geberit main control unit.

5 On the Geberit room thermostat you wish to select for heating zone 2, press and hold the <+> and <-> buttons simultaneously for 2 seconds.

✓ [PAIr] is displayed on the room thermostat.

✓ Following successful pairing, the number of the paired heating zone is displayed for 3 seconds.

✓ The [PAIRING] and [ZONE 3] LEDs flash on the Geberit main control unit.

6 Repeat the above steps until all heating zones have been paired.

7 Press and hold the <OK> button on the Geberit main control unit for 2 seconds.
✓ The LEDs of the paired zones and the [PAIRING] LED light up.

8 Press and hold the <OK> button on the Geberit main control unit for 2 seconds.
✓ The room thermostats and heating zones are paired and the main control unit shows the status display once again.

Configuring the master

If several Geberit main control units are connected to one another via a bus connector, one main control unit must be configured as the master and the others as slaves. → See "Bus connector for main control unit", page 38 and "Pairing the master and slave", page 43.

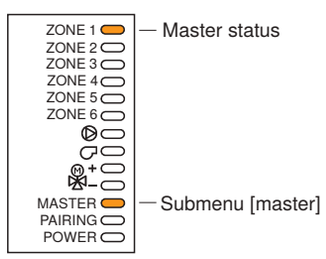
The following example shows how to configure the first main control unit as the master:

Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

2 Press the <▷> button (2x).
✓ The [Master] submenu is displayed.



3 Press the <OK> button.
✓ [ZONE 1] LED flashes in short pulses (master not configured).

4 Press the <OK> button.
✓ [ZONE 1] LED flashes in flash pulses (main control unit is master).

5 Press and hold the <OK> button for 2 seconds.
✓ [ZONE 1] LED lights up.

6 Press and hold the <OK> button for 2 seconds.
✓ The main control unit shows the status display once again. [Master] LED lights up.

The same process can be used to undo the master configuration. Step 4 switches the configuration on and off.

Pairing the master and slave

If several Geberit main control units are connected to one another via a bus connector, one main control unit must be configured as the master and the others as slaves. → See "Bus connector for main control unit", page 38 and "Configuring the master", page 42.

The following example shows how to configure the connected main control units as slaves.

On the main control unit configured as the master:

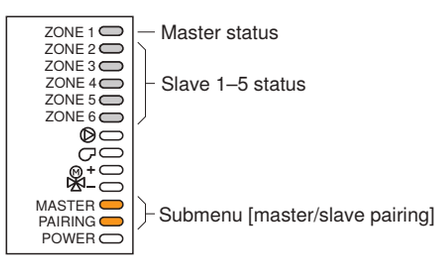
Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

2 Press the <▷> button (3x).

✓ The [Pairing Master/Slave] submenu is displayed.



3 Press the <OK> button.

✓ The [Master] and [ZONE 1] LEDs light up.

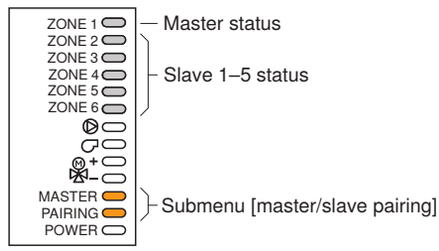
✓ The [PAIRING] and [ZONE 2] LEDs flash. The master is ready to be paired with the first slave.

On the main control unit to be configured as the first slave:

4 Press and hold the <OK> button for 2 seconds.

5 Press the <▷> button (3x).

✓ The [Pairing Master/Slave] submenu is displayed.



6 Press the <OK> button.

✓ The [PAIRING], [Master] and [ZONE 2] LEDs flash. The first slave is automatically paired with the master.

✓ Following successful pairing, the [ZONE 2] LED lights up.

7 Press and hold the <OK> button for 2 seconds.

✓ The slave shows the status display once again. [Master] LED flashes.

Once pairing has taken place, the master automatically begins to pair the second slave. [ZONE 3] LED flashes.

On the main control units to be configured as the second to fifth slaves, perform the same steps as for the first slave.

Following pairing of all slaves with the master:

8 Press and hold the <OK> button for 2 seconds.

✓ The [Master] and [ZONE 2–5] LEDs light up ([ZONE 2–5] show the paired slaves).

9 Press and hold the <OK> button for 2 seconds.

✓ The main control unit shows the status display once again. [Master] LED lights up.

Switching outputs manually

For test purposes, it is possible to manually switch the outputs for the valve actuators, pump, heat generator and mixing valve actuator.

The following example shows how to switch the valve actuators on and off for zone 3:

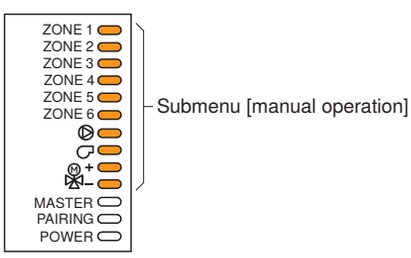
Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

2 Press the <▷> button (4x).

✓ The [Manueller Betrieb] submenu is displayed.



3 Press the <OK> button.

✓ [ZONE 1] LED flashes in short pulses.

4 Press and hold the <▷> button until [ZONE 3] flashes.

5 Press the <OK> button.

✓ The valve actuators of zone 3 are switched on.

6 Press the <OK> button.

✓ The valve actuators of zone 3 are switched off.

7 In order to switch additional outputs on and off, press and hold the <▷> button until the required LED flashes. Switch on and off by pressing the <OK> button.

8 Press and hold the <OK> button for 2 seconds.

✓ The [Manueller Betrieb] submenu is displayed.

9 Press and hold the <OK> button for 2 seconds.

✓ Status display is shown again.

Resetting the main control unit

The following settings of the Geberit main control unit can be reset to factory settings:

- pairing of room thermostats and heating zones ([ZONE 1] LED)
- pairing of master and slaves ([ZONE 2] LED)
- parameter c1–c7 of the main control unit ([ZONE 3] LED)

The following example shows how to reset the parameters of the main control unit:

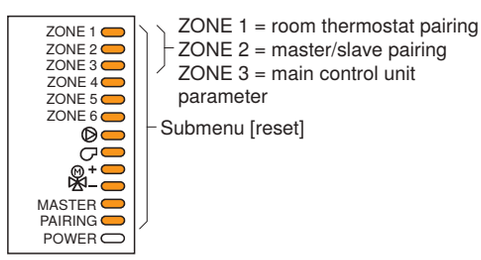
Prerequisite

– The status display on the Geberit main control unit is shown.

1 Press and hold the <OK> button for 2 seconds.

2 Press the <▷> button (5x).

✓ The [Reset] submenu is displayed.



3 Press the <OK> button.

✓ [ZONE 1] LED flashes in short pulses.

4 Press and hold the <▷> button until [ZONE 3] flashes.

5 Press the <OK> button.

✓ The parameters have been reset and the status display is shown again.

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Operating the Geberit room thermostat

Setting the basic functions

Pairing room thermostats and heating zones

One or more heating zones must be paired with each Geberit room thermostat. This applies to both wired and wireless room thermostats.

1 Press and hold the <OK> button on the Geberit main control unit for 2 seconds.

2 Press the <▷> button.

3 Press the <OK> button.
- ✓ The [PAIRING] and [ZONE 1] LEDs flash.

4 On the Geberit room thermostat you wish to select for heating zone 1, press and hold the <+> and <-> buttons simultaneously for 2 seconds.
- ✓ [PAIr] is displayed on the room thermostat.
- ✓ Following successful pairing, the number of the paired heating zone is displayed for 3 seconds (e.g. [ZonE 1]).
- ✓ The [PAIRING] and [ZONE 2] LEDs flash on the Geberit main control unit.

5 On the Geberit room thermostat you wish to select for heating zone 2, press and hold the <+> and <-> buttons simultaneously for 2 seconds.
- ✓ [PAIr] is displayed on the room thermostat.
- ✓ Following successful pairing, the number of the paired heating zone is displayed for 3 seconds.
- ✓ The [PAIRING] and [ZONE 3] LEDs flash on the Geberit main control unit.

6 Repeat the above steps until all heating zones have been paired.

7 Press and hold the <OK> button on the Geberit main control unit for 2 seconds.
- ✓ The LEDs of the paired zones and the [PAIRING] LED light up.

8 Press and hold the <OK> button on the Geberit main control unit for 2 seconds.
- ✓ The room thermostats and heating zones are paired and the main control unit returns to its initial state.

Deleting pairings between room thermostats and heating zones

In order to delete a heating zone pairing, the Geberit room thermostat must be restored to its factory settings and the pairing on the Geberit main control unit must be reset.

1 Restore to factory settings. → See "Resetting to factory settings", page 63.

2 Reset the Geberit main control unit. → See "Resetting the main control unit", page 44.

Only the room temperature is displayed in the case of room thermostats without a paired heating zone.

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Setting the date and time

This setting can only be made if the Party, ECO and Holiday functions have been deactivated.

1. Press the <+> button.
2. Press the <Info> button 4 times until [dAt] is displayed.
3. Press and hold the <+> button for 2 seconds.
   ✓ The hour display flashes.
4. Use the <+> or <-> button to set the hours.
5. Press the <Info> button.
   ✓ The minutes display flashes.
6. Use the <+> or <-> button to set the minutes.
7. Press the <Info> button.
   ✓ The day display flashes.
8. Use the <+> or <-> button to set the day.
9. Press the <Info> button.
   ✓ The month display flashes.
10. Use the <+> or <-> button to set the month.
11. Press the <Info> button.
    ✓ The year display flashes.
12. Use the <+> or <-> button to set the year.
13. Press and hold the <Info> button until the basic display appears.

Result

✓ The date and time have been set.

Setting the daytime temperature

This setting can only be made if the Party, ECO and Holiday functions have been deactivated.

1. Press the <+> button.
   ✓ The daytime temperature is displayed.
2. Use the <+> or <-> button to set the daytime temperature.
3. Press and hold the <Info> button until the basic display appears.

Result

✓ The daytime temperature is now saved.

Setting the nighttime temperature

This setting can only be made if the Party, ECO and Holiday functions have been deactivated.

1. Press the <+> button.
   ✓ The daytime temperature is displayed.
2. Press the <Info> button.
   ✓ The nighttime temperature is displayed.
3. Use the <+> or <-> button to set the nighttime temperature.
4. Press and hold the <Info> button until the basic display appears.

Result

✓ The nighttime temperature is now saved.

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Setting the frost protection temperature (RCD2 only)

This setting can only be made if the Party, ECO and Holiday functions have been deactivated.

1. Press the <+> button.
   ✓ The daytime temperature is displayed.
2. Press the <Info> button (twice).
   ✓ The frost protection temperature is displayed.
3. Press and hold the <+> button for 2 seconds.
   ✓ The value in the second indicator on the display flashes.
4. Use the <+> or <-> button to set the frost protection temperature.
5. Press and hold the <Info> button until the basic display appears.

Result

✓ The frost protection temperature is now saved.

Setting intervals

Up to 21 intervals can be set in heating programmes CH1 and CH2. The active heating programme is selected manually. → See "Selecting the heating programme", page 48.

Factory setting:

Heating programme	Interval	Day	Time
CH1	1	Monday–Friday	06:00–22:00
	2	Saturday–Sunday	07:00–23:00
CH2	1 2	Monday–Friday	05:00–07:30 13:30–22:00
	3	Saturday–Sunday	07:00–23:00

1. Press and hold the <Info> button until CH1 is displayed. For CH2, also press the <+> button.
2. Press the <Info> button.
   ✓ The switch-on time for interval 1 is shown in the third indicator on the display.
3. Press the <Info> button.
   ✓ The day display flashes.
4. Use the <+> or <-> button to set the day.
5. Press the <Info> button.
   ✓ The switch-on time flashes.
6. Use the <+> or <-> button to set the switch-on time.
7. Press the <Info> button.
8. Press the <+> button.
9. Press the <Info> button.
   ✓ The switch-off time flashes.
10. Use the <+> or <-> button to set the switch-off time.
11. Press the <Info> button.
12. For additional intervals, press the <+> button and repeat steps 3 to 11.

13 Press and hold the <Info> button until CH1 or CH2 is displayed.

14 Press and hold the <Info> button again until the basic display appears.

Result

✓ The intervals have been set.

Selecting the heating programme

Up to 21 intervals can be set in heating programmes CH1 and CH2. The active heating programme is selected manually. → See "Setting intervals", page 47.

Activate heating programme CH1:

1 Press and hold the <Info> button until CH1 is displayed.

2 Press and hold the <+> button for 2 seconds.

✓ Heating programme CH1 is active.

3 Press and hold the <Info> button until the basic display appears.

Activate heating programme CH2:

4 Press and hold the <Info> button until CH1 is displayed.

5 Press and hold the <+> button until CH2 is displayed.

6 Press and hold the <+> button for 2 seconds.

✓ Heating programme CH2 is active.

7 Press and hold the <Info> button until the basic display appears.

The active heating programme is displayed with a point between CH and number (CH.1 or CH.2).

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Setting the signal tone

The signal tone output can be set in submenu P1.8.

Value	Description
0	No signal tone
1	Each time a button is pressed
2	Each time a button is pressed and in the event of warnings
3	Each time a button is pressed, in the case of notes, and in the event of warnings

1 Press and hold the <Info> button until CH1 is displayed.

2 Press and hold the <+> button until P1 is shown in the second indicator on the display.

3 Press the <Info> button.

✓ Submenu is shown in the third indicator on the display.

4 Press and hold the <+> button until P1.8 is shown in the third indicator on the display.

5 Press the <Info> button.

✓ The value in the second indicator on the display flashes.

6 Use the <+> or <-> button to set the value.

7 Confirm the set value by pressing the <Info> button.

8 Press and hold the <Info> button until P1 is shown in the second indicator on the display.

9 Press and hold the <Info> button again until the basic display appears.

Result

✓ The signal tone is set.

Setting the comfort functions (RCD2 only)

Activating the party function (RCD2 only)

The party function enables the set room temperature to be increased for a limited time.

1 Press the <Party> button.
✓ The temperature display flashes.

2 Use the <+> or <-> button to set the temperature for the time period of the party function.

3 Press the <Info> button.
✓ The time flashes.

4 Use the <+> or <-> button to set the end of the party function.

5 Press the <Info> button.

Result
✓ The party function is activated.

Deactivating the party function (RCD2 only)

Prerequisite
– The party function is activated.

► Press the <Party> button.

Result
✓ The party function is deactivated.

Activating the ECO function (RCD2 only)

The ECO function enables the set room temperature to be reduced for a limited time.

1 Press the <ECO> button.
✓ The temperature display flashes.

2 Use the <+> or <-> button to set the temperature for the time period of the ECO function.

3 Press the <Info> button.
✓ The time flashes.

4 Use the <+> or <-> button to set the end of the ECO function.

5 Press the <Info> button.

Result
✓ The ECO function is activated.

Deactivating the ECO function (RCD2 only)

Prerequisite
– The ECO function is activated.

► Press the <ECO> button.

Result
✓ The ECO function is deactivated.

Activating the vacation function (RCD2 only)

The vacation function enables the room temperature to be reduced for a maximum of 99 days.

1 Press the <Vacation> button.
✓ The temperature display flashes.

2 Use the <+> or <-> button to set the temperature for the time period of the vacation function.

3 Press the <Info> button.
✓ The date flashes.

4 Use the + or <-> button to set the end of the vacation function.

5 Press the <Info> button.

Result
✓ The vacation function is activated.

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Deactivating the vacation function (RCD2 only)

Prerequisite

– The vacation function is activated.

▶ Press the <Vacation> button.

Result

✓ The vacation function is deactivated.

Switching the operating mode on and off (RCD2 only)

The current operating mode (heating or cooling) can be switched on and off manually by pressing the <On/Off> button. When the operating mode is switched off, the room temperature is regulated to the set frost protection temperature.

1 Press and hold the <On/Off> button for 2 seconds.
✓ The current operating mode is switched off. Symbol ⏻ is displayed.

2 Press and hold the <On/Off> button for 2 seconds.
✓ The current operating mode is switched on. Symbol ≋ or ✳ is displayed.

Displaying the basic values

The following values are displayed as part of the unit's factory settings when the <Info> button is pressed repeatedly. The displayed values can be adapted on an individual basis. → See "Setting the display", page 54.

Prerequisite

– The basic display is shown.

1 Press the <Info> button.
✓ The outside air temperature is shown.

2 Press the <Info> button.
✓ The room humidity is shown.

3 Press the <Info> button.
✓ The air pressure is shown.

4 Press and hold the <Info> button until the basic display appears.

Displaying the sensor values

The current values of the sensors connected to the Geberit main control unit can be displayed in menu t1.

Prerequisite

– The basic display is shown.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until t1 is shown in the second indicator on the display.

3 Press the <Info> button.

✓ The third indicator displays the sensor value t1.1.

4 Press the <+> button to display additional sensor values.

5 Press and hold the <Info> button until t1 is shown in the second indicator on the display.

6 Press and hold the <Info> button again until the basic display appears.

Table 10: Parameters in menu t1

No.	Description
t1.1	The inlet flow setpoint temperature and the actual value of the pipe temperature sensor are displayed alternately at connection T1 of the main control unit
t1.2	Actual value of the outside temperature sensor at connection T2 of the main control unit
t1.3	Reserved for future applications
t1.4	Reserved for future applications

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Displaying the unit information

The unit information can be displayed in menu d1.

Prerequisite

– The basic display is shown.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until d1 is shown in the second indicator on the display.

3 Press the <Info> button.

✓ The third indicator displays the value d1.1.

4 Press the <+> button to display additional values.

5 Press and hold the <Info> button until d1 is shown in the second indicator on the display.

6 Press and hold the <Info> button again until the basic display appears.

Table 11: d1 parameter overview

No.	Description
d1.1	Type of Geberit room thermostat (RCD1 or RCD2)
d1.2	Software version of the room thermostat
d1.3	Type of Geberit main control unit connected to the room thermostat
d1.4	Software version of the main control unit
d1.5	Hydraulic scheme of the main control unit (1–3) → See "Application examples", page 25. → See parameter C1.1 in "Configuring the Geberit main control unit", page 60.
d1.6	Address of the room thermostat (1–6)
d1.7	Heating zones paired with the room thermostat (1–6)
d1.16	Brightness in the room
d1.17	Radio signal strength[1)]
d1.18	Address of the main control unit[1)] (0–10)
d1.19	Pairing address of the room thermostat/heating zone[1)] (0–255)
d1.20	Radio channel[1)]

[1)] Wireless room thermostats only

Setting the display

Various display properties, such as the values that are shown, the brightness or the contrast, can be set in menu P1.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until P1 is shown in the second indicator on the display.

3 Press the <Info> button.
✓ Submenu is shown in the third indicator on the display.

4 Press and hold the <+> button until P1.1 is shown in the third indicator on the display.

5 Press the <Info> button.
✓ The value in the second indicator on the display flashes.

6 Use the <+> or <-> button to set the value.

7 Confirm the set value by pressing the <Info> button.

8 To set additional parameters, repeat steps 4 to 7.

9 Press and hold the <Info> button until P1 is shown in the second indicator on the display.

10 Press and hold the <Info> button again until the basic display appears.

Table 12: P1 parameter overview

No.	Description	Range (bold = factory setting)
P1.1	Temperature differential by which the display of the measured room temperature is rounded	0: 0.1 °C 1: 0.2 °C **2: 0.5 °C** 3: 1.0 °C
P1.2	Time after which the display returns to the basic display	3–180 s **(15 s)**
P1.3	Time after which the backlight dims or switches off	10–180 s **(30 s)**
P1.4	Function of the backlight	0: No backlight 1: Maximum brightness during operation, then dimming to minimum brightness **2: Adaptation to brightness in room during operation, then dimming to minimum brightness** 3: Adaptation to brightness in room during operation, backlight off during nighttime temperature interval
P1.5	Minimum brightness of backlight	0–100 % **(5 %)**
P1.6	Maximum brightness of backlight	0–100 % **(80 %)**
P1.7	Display contrast	1–8 **(3)**

No.	Description	Range (bold = factory setting)
P1.8	Signal tone	0: No signal tone 1: Each time a button is pressed 2: Each time a button is pressed and in the event of warnings **3: Each time a button is pressed, in the case of notes, and in the event of warnings**
P1.9	Display of warnings and notes	0: No display 1: Warnings only **2: Warnings and notes**
P1.10	Value shown in the second indicator on the display (basic display)	**1: Room temperature** 2: Outside air temperature 3: Inlet flow temperature 4: Room humidity 5: Air pressure 6: Outside temperature sensor (at AUX connection of room thermostat) 7: Indoor air quality (VOC)[1)] 8: Status of the heating zones paired with the room thermostat
P1.11	First value displayed when the <Info> button is pressed repeatedly	0: No display 1: Room temperature **2: Outside air temperature** 3: Inlet flow temperature 4: Room humidity 5: Air pressure 6: Outside temperature sensor (at AUX connection of room thermostat) 7: Indoor air quality (VOC)[1)] 8: Status of the heating zones paired with the room thermostat
P1.12	Second value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(4)**
P1.13	Third value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(5)**
P1.14	Fourth value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(0)**
P1.15	Fifth value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(0)**
P1.16	Sixth value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(0)**
P1.17	Seventh value displayed when the <Info> button is pressed repeatedly	Parameters such as P1.11 **(0)**
P1.18	Number of values alternately displayed in the second indicator (values from P1.10–P1.17)	1–8 **(1)**

[1)] RCD2 only

Setting the control unit functions

The master/slave configuration of the room thermostats and the control algorithm can be set in menu P2.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until P2 is shown in the second indicator on the display.

3 Press the <Info> button.
✓ Submenu is shown in the third indicator on the display.

4 Press and hold the <+> button until P2.1 is shown in the third indicator on the display.

5 Press the <Info> button.
✓ The value in the second indicator on the display flashes.

6 Use the <+> or <-> button to set the value.

7 Confirm the set value by pressing the <Info> button.

8 To set additional parameters, repeat steps 4 to 7.

9 Press and hold the <Info> button until P2 is shown in the second indicator on the display.

10 Press and hold the <Info> button again until the basic display appears.

Table 13: P2 parameter overview

No.	Description	Range (bold = factory setting)
P2.1	Master/slave configuration of the room thermostat When a room thermostat is defined as the master, all other room thermostats automatically become slaves. Indicator on the room thermostat: •  lights up: master •  flashes: slave	**0: No master** 1: Room thermostat is master; setpoint temperatures and operating mode are transferred to slaves 2: Room thermostat is master; setpoint temperatures, operating mode, party, ECO and vacation functions are transferred to slaves[1)] 3: Room thermostat is master; party, ECO and vacation functions are transferred to slaves[1)]
P2.2	Control algorithm for the heating zones paired with the room thermostat For P and PI control → See parameter C2.x in "Configuring the Geberit main control unit", page 60.	1: Two-point control (do not use for Geberit valve actuators) **2: P control** 3: PI control

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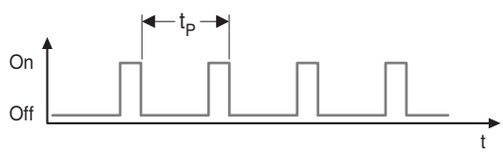
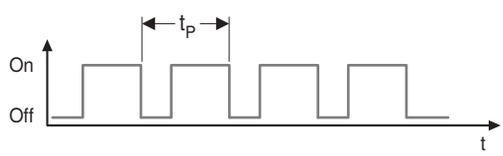
No.	Description	Range (bold = factory setting)
P2.3	Interval t_P for activating the valve actuators for P and PI control To achieve constant behaviour in the two-point valve actuators in the case of P and PI control, the two-point valve actuators are periodically switched on and off. Example: duty cycle 25 %  Example: duty cycle 70 %  	10–50 min. **(20 min.)**
P2.4	Hysteresis for two-point control (P2.2 = 1)	0.2–10.0 °C **(0.2 °C)**
P2.10	Indoor air quality sensor[1)] Activating the room air quality sensor will shorten the battery lifetime of wireless room thermostats.	**0: Deactivated** 1: Activated

[1)] RCD2 only

Calibrating sensors and setting the menu and button locks

The values of the internal and external sensors can be calibrated in menu S1. Menu and button locks can also be set.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until P2 is shown in the second indicator on the display.

3 Press and hold the <+> button for 10 seconds.
✓ S1 is shown in the second indicator on the display. Menu S1 is temporarily unlocked.

4 Press the <Info> button.
✓ Submenu is shown in the third indicator on the display.

5 Press and hold the <+> button until S1.2 is shown in the third indicator on the display.

6 Press the <Info> button.
✓ The value in the second indicator on the display flashes.

7 Use the <+> or <-> button to set the value.

8 Confirm the set value by pressing the <Info> button.

9 To set additional parameters, repeat steps 5 to 8.

10 Press and hold the <Info> button until S1 is shown in the second indicator on the display.

11 Press and hold the <Info> button again until the basic display appears.

Table 14: S1 parameter overview

No.	Description	Range (bold = factory setting)
S1.2	Selection of the room temperature sensor	**1: Internal room temperature sensor** 2: Outside temperature sensor (at AUX connection of room thermostat) 3: Internal and external room temperature sensor (mean value)
S1.3	Calibration of the internal room temperature sensor	-5.0 – +5.0 °C **(0 °C)**
S1.4	Calibration of the outside temperature sensor	-5.0 – +5.0 °C **(0 °C)**
S1.5	Calibration of the dew point sensor	-10 – +10 % **(0 %)**
S1.6	Calibration of the air pressure sensor	-100 – +100 mbar **(0 mbar)**
S1.7	Calibration of the air quality sensor (VOC)[1)]	-100 – +100 **(0)**
S1.8	Calibration of the brightness sensor for detecting the brightness in the room	0.5–2 **(1)**
S1.9	Menu lock To unlock locked menus temporarily: 1. call up most recent unlocked menu, e.g. P2 2. press and hold the <+> button for 10 seconds	0: No lock **1: Menu S1 locked** 2: Menus P1, P2 and S1 locked

No.	Description	Range (bold = factory setting)
S1.10	Button lock To activate button lock: 1. press and hold the <-> button for 10 seconds Display:  button lock active To deactivate button lock: 1. press and hold the <+> button for 10 seconds	**0: No lock** 1: <On/Off> button locked 2: Same as 1; <Party>, <ECO> and <Vacation> buttons also locked 3: Same as 2, temperature settings also locked 4: Same as 3, parameter settings and values also locked via <Info> button
S1.11	Minimum room temperature that can be set	4–40 °C **(6 °C)**
S1.12	Maximum room temperature that can be set	4–40 °C **(30 °C)**
S1.14	Elevation for air pressure sensor for improving weather forecast	0–1999 m above sea level **(300 m above sea level)**

[1] RCD2 only

Configuring the Geberit main control unit

The connected Geberit main control unit can be configured using one of the room thermostats.

Prerequisite

– Menu lock for S1 has been revoked. → See parameter S1.9 in "Calibrating sensors and setting the menu and button locks", page 58.

1 Press and hold the <Info> button until CH1 is displayed.

2 Press the <+> button repeatedly until S1 is shown in the second indicator on the display.

3 Press and hold the <+> button for 20 seconds until c1.01 is shown in the second indicator on the display.

4 Press the <Info> button (twice).
✓ The value in the second indicator on the display flashes.

5 Use the <+> or <-> button to set the value.

6 Confirm the set value by pressing the <Info> button.

7 To set additional parameters, press the <+> button and repeat steps 4 to 6.

8 Press and hold the <Info> button until the basic display appears.

Table 15: Parameter C1, general settings

No.	Description	Range (bold = factory setting)
C1.1	Hydraulic scheme The hydraulic scheme determines the functions of the main control unit. → See "Application examples", page 25.	**1: Hydraulic scheme 1 (heating)** 2: Hydraulic scheme 2 (heating/cooling) 3: Hydraulic scheme 3 (heating with inlet flow temperature regulation)
C1.2	Function of the valve actuators	**1: NC, closed when electricity supply is not present** (for Geberit valve actuators) 2: NO, open when electricity supply is not present
C1.4	Function of input for external time switch (contact open = function not active, contact closed = function active)	**0: No function** 1: Regulate to daytime temperature 2: Regulate to nighttime temperature 3: Regulate to frost protection temperature 4: Regulate to setpoint temperature in accordance with C1.5
C1.5	Setpoint temperature for external time switch (C1.4 = 4)	4–40 °C **(20 °C)**
C1.6	Function of input for signal from external heat generator	**0: Signal from external heat generator** (contact open = heating, contact closed = cooling) 1: Heating (input signal not taken into account) 2: Cooling (input signal not taken into account)
C1.7	Function of input for dew point sensor	0: No dew point sensor 1: NC, contact opens when condensation occurs 2: NO, contact closes when condensation occurs **3: Analogue input** (for Geberit dew point sensor)
C1.13	Automatic switchover between summer/winter time	0: Off **1: On**

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No.	Description	Range (bold = factory setting)
C1.14	Anti-block function for valve actuators, mixing valve actuator and pump. Prevents the actuators from becoming blocked if they are not being used for an extended period. In the event that an output has not been activated for an entire week, it is activated as follows on Friday between 20:00 and 20:15: • valve actuators: 5 minutes on • mixing valve actuator: opening and closing • pump: 30 seconds on	0: Off **1: On**
C1.15	Function of 10 V output	**1: 10 V DC, supply voltage for dew point sensor** (third-party product) 2: 0–10 V, signal for heat generator activation
C1.18	Calibration of pipe temperature sensor at connection T1	-5 – +5 % **(0 %)**
C1.19	Calibration of outside temperature sensor at connection T2	-5 – +5 % **(0 %)**
C1.20	Calibration of sensor at connection T3 (reserved for future applications)	-5 – +5 % **(0 %)**

Table 16: Parameter C2, settings for room temperature regulation

No.	Description	Range (bold = factory setting)
C2.1	Control algorithm	**0: Control algorithm according to room thermostat for the heating zone in question** (parameter P2.2) 1: P control for all heating zones 2: PI control for all heating zones 3: Two-point control for all heating zones
C2.2	PI control reset time (I share)	0.2–4.0 **(1.0)**
C2.3	Proportional range of P and PI control (P band)	0.5–2.0 °C **(1.0)**
C2.4	P band offset during heating	0.0–1.0 °C **(0.0 °C)**
C2.5	P band offset during cooling	0.0–1.0 °C **(0.0 °C)**
C2.6	Minimum duty cycle of the valve actuators	120–300 s **(120 s)**

Table 17: Parameter C3, settings for pump and heat generator

No.	Description	Range (bold = factory setting)
C3.2	Switch-on delay of the pump	0–900 s **(0 s)**
C3.3	Switch-off delay of the pump	0–900 s **(300 s)**
C3.4	Function of pump output	**1: Normal** 2: Inverted
C3.12	Switch-on delay of the heat generator	0–900 s **(0 s)**
C3.13	Switch-off delay of the heat generator	0–900 s **(0 s)**
C3.14	Function of heat generator output	**1: Normal** 2: Inverted

Table 18: Parameter C4, settings for inlet flow temperature regulation

No.	Description	Range (bold = factory setting)
C4.1	Steepness of heat curve	0.2–2.6 **(0.5)**
C4.2	Parallel shift of heat curve	-5.0 – +5.0 °C **(0.0 °C)**
C4.3	Influence of room temperature deviation The greater the value, the greater the influence of the room temperature deviation on the heat curve. Example: reduce value if there is strong exposure to sunlight.	0.1–3.0 **(1.0)**
C4.4	Source of inlet flow temperature	**1: Weather-controlled** (in accordance with heat curve) 2: Constant (in accordance with parameter C4.5)
C4.5	Specification for constant inlet flow temperature	10–55 °C **(35 °C)**
C4.10	Maximum inlet flow temperature for heating	20–60 °C **(45 °C)**
C4.11	Minimum inlet flow temperature for heating	15–40 °C **(20 °C)**
C4.12	Maximum inlet flow temperature for cooling	20–40 °C **(35 °C)**
C4.13	Minimum inlet flow temperature for cooling	15–30 °C **(18 °C)**
C4.14	Transfer coefficient (P share) of PID control for mixing valve	0.5–2.0 (**1.0**)
C4.15	Reset time (I share) of PID control for mixing valve	0.5–2.0 **(1.0)**
C4.16	Retention time (D share) of PID control for mixing valve	0.5–2.0 **(1.0)**
C4.17	Time taken to open or close the mixing valve (effective running time without times from C4.19 and C4.20)	60–240 s **(120 s)**
C4.18	Time taken to compensate for play in mixing valve in the event of a change of direction	1–5 s **(1 s)**
C4.19	Time until the mixing valve begins to close when it is fully open	7–30 s **(15 s)**
C4.20	Time until the mixing valve begins to open when it is fully closed	7–30 s **(15 s)**

Table 19: Parameter C7, settings for emergency operation

No.	Description	Range (bold = factory setting)
C7.1	Delay time until switching to emergency operation after loss of communication between room thermostat and main control unit	0–240 min. **(120 min.)**
C7.2	Interval for emergency operation[1)]	0–240 min. **(60 min.)**
C7.3	Opening time of valve actuators for heating zone 1 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**

No.	Description	Range (bold = factory setting)
C7.4	Opening time of valve actuators for heating zone 2 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**
C7.5	Opening time of valve actuators for heating zone 3 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**
C7.6	Opening time of valve actuators for heating zone 4 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**
C7.7	Opening time of valve actuators for heating zone 5 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**
C7.8	Opening time of valve actuators for heating zone 6 in emergency operation[1)] (displayed as a percentage of the interval for emergency operation)	0–50 % **(30 %)**

1) Example: in the case of an opening time of 30 % and an interval of 60 minutes, the valve actuators are opened for 18 minutes every hour.

Resetting to factory settings

The room thermostat can be reset to its factory settings. This resets all settings in menus P1, P2 and S1, and the assignment of heating zones (pairing).

▶ Press and hold the <Info> button for 40 seconds.

Result

✓ The room thermostat is reset to its factory settings.

Troubleshooting

Error message	Possible cause	Error clearance
Er1	Error on integrated room temperature sensor	► Send room thermostat to the relevant Geberit sales company.
Er2	Error on outside temperature sensor	► Check type and connection of outside temperature sensor (AUX connection on room thermostat).[1)]
Er3	Error on outside temperature sensor Control system operating without outside temperature sensor.	► Check type and connection of outside temperature sensor (T2 connection on main control unit).[1)]
Er4	Error on pipe temperature sensor Mixing valve actuator is closed and pump switched off.	► Check type and connection of pipe temperature sensor (T1 connection on main control unit).[1)]
Er5	Error on brightness sensor Backlight operating at maximum brightness, regardless of the brightness in the room.	► Send room thermostat to the relevant Geberit sales company.
Er6	Error on room humidity sensor	► Send room thermostat to the relevant Geberit sales company.
conn Err	Connection error affecting Geberit main control unit Main control unit operating with emergency programme	► Wired room thermostats: check connection to main control unit.[1)] ► Wireless room thermostats: check wireless connector and radio signal strength.[1)]
PAIr Err	Error when pairing room thermostat with heating zone	► Wired room thermostats: check connection to main control unit.[1)] ► Wireless room thermostats: check wireless connector and radio signal strength.[1)]

[1)] If the problem persists once the error has been rectified, send the room thermostat to the relevant Geberit sales company.

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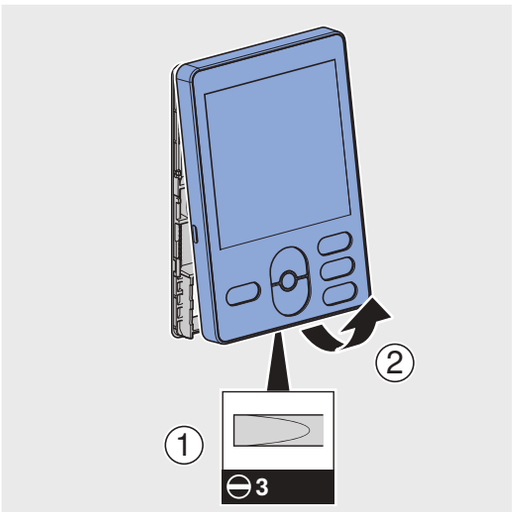
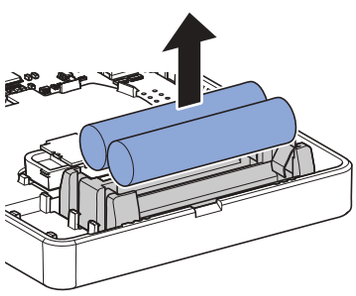
Maintenance

Replacing the batteries (wireless room thermostats)

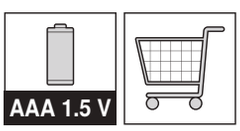
1 Open the room thermostat with a screwdriver.

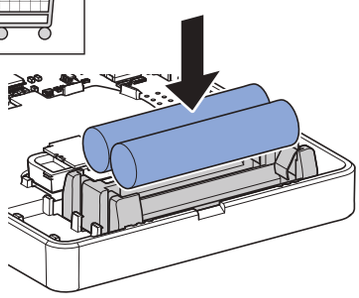


2 Remove and dispose of the batteries.

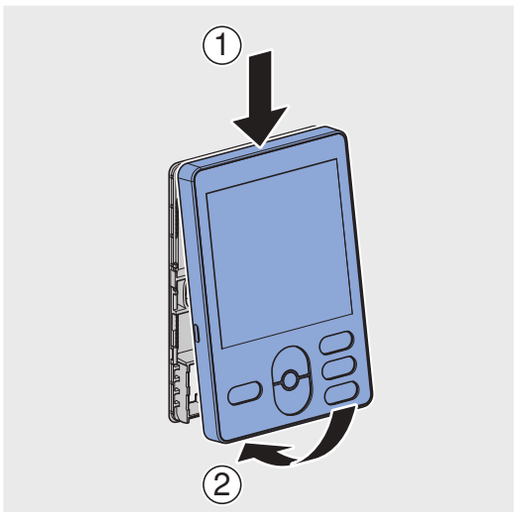


3 Insert new batteries. Ensure correct polarity.





4 Snap the upper housing section into the base plate.



Result

✓ The room thermostat will switch on.

Disposal

Constituents

This product meets the requirements of Directive 2011/65/EU (RoHS) (restriction of the use of certain hazardous substances in electrical and electronic equipment).

Disposal of waste electrical and electronic equipment

The symbol of the crossed-out wheeled bin means that waste electrical and electronic equipment (WEEE) must be disposed of separately and not with other non-recyclable waste. End users are legally obliged to return old equipment to public waste disposal authorities, distributors, or Geberit for proper disposal. Many distributors of electrical and electronic equipment are obliged to take back WEEE free of charge. Contact the responsible sales or service company to return the WEEE to Geberit.

Used batteries and accumulators that are not enclosed within the old equipment, as well as lamps that can be removed from the old equipment in a non-destructive manner, must be separated from the old equipment before being handed over to a disposal point.

If personal data is stored on the old equipment, end users themselves are responsible for deleting it before handing it over to a disposal point.

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