Radiocontrol F

Radio control system for floor heating

To be precise.

Heimeier

Radiocontrol F

Description

The HEIMEIER Radiocontrol F radio control system for controlling the temperature of floor heating systems in individual rooms consists of a microprocessor-controlled central unit, with or without a digital two-channel automatic week clock, and the corresponding number of room transmitters. Cables between the battery-driven room transmitters and the central unit are not required.

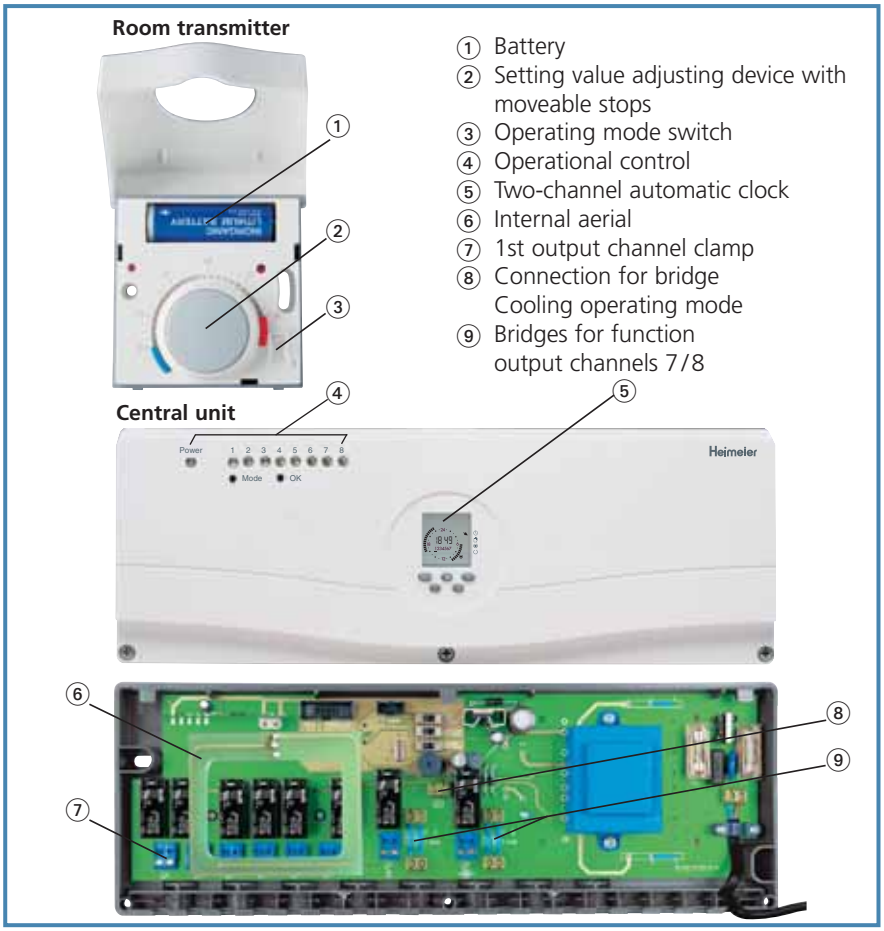
The room transmitter is an electronic two-position controller with built-in sensor. The setting value can be set between 6°C and 30°C. An upper and lower restriction of the temperature range or locking of the setting can be carried out using two slides. A function selector provides the option for selection between daytime mode, set-back mode or automatic mode. In automatic mode, a time-controlled room temperature set-back (approx. 4 K) is activated by the two-channel automatic week clock built into the central unit. The notch on the face of the setting value adjusting device suitable for "colour clips" or company-specific printed "partner clips".

The aerial integrated into the central unit receives the room transmitters' radio signals. Thermal actuators (230 V type NC/NO) can be connected to 8 output channels. The room transmitters are allocated to one or more output channels. Two of the eight channels can be switched to potential-free contacts.
An LED is allocated to every output channel as an operation status indicator. Start-up is initiated with two buttons.

If the central unit is installed in metal manifold cabinets an external aerial must also be installed.
For information, see Accessories.

Assembly

Radiocontrol F



① Battery
② Setting value adjusting device with moveable stops
③ Operating mode switch
④ Operational control
⑤ Two-channel automatic clock
⑥ Internal aerial
⑦ 1st output channel clamp
⑧ Connection for bridge Cooling operating mode
⑨ Bridges for function output channels 7/8

- **Floor heating system control without costly cabling**
- **Room transmitter can be flexibly positioned**
- **Easy to start up**
- **With and without digital two-channel automatic week clock**
- **Room transmitter suitable for colour and partner clips**
- **Elegant design**

Application

The Radiocontrol F System is used in connection with dual-position actuators installed on a heating manifold (e.g. HEIMEIER EMOtec or EMO T) for individual room temperature control of floor, wall or ceil heating and cooling.

It is particularly suitable for retrofitting already existing floor heating systems. The system of room transmitters and a central unit which can be flexibly positioned is also useful when used with new installations. With Radiocontrol F, control can be easily realised without costly cabling or mortising work.

For time-controlled individual room temperature control, the central unit is used with a digital two-channel automatic week clock in buildings where a centrally controlled set-back is either not possible or is only of limited use due to the rooms being used at varying times.

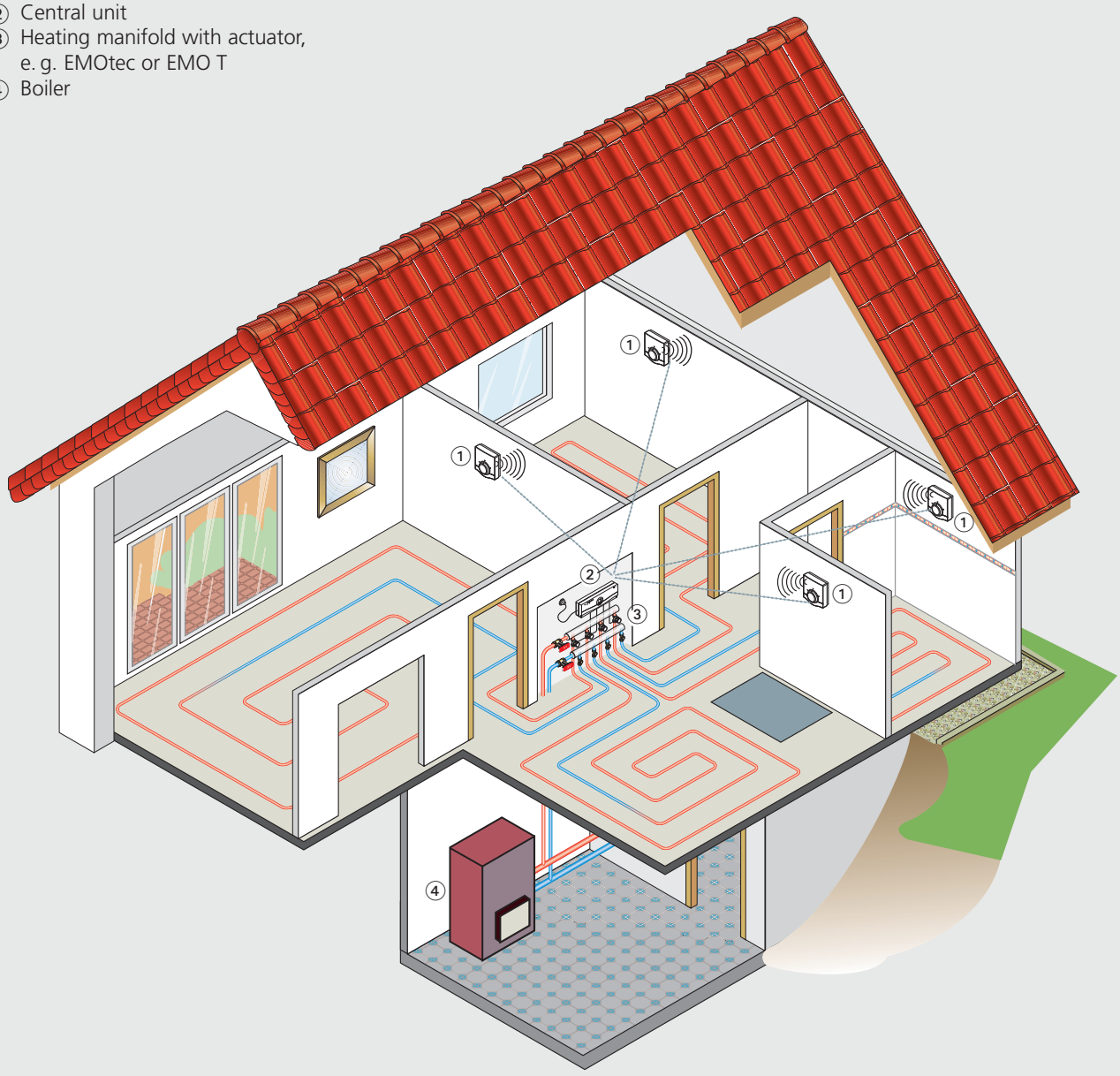
Two output channels must be switched to potential-free to control the pump and/or wall-mounted gas fired heater.

Note

Avoid shielding due to any metallic objects, mirrors, heat insulating glass panelling, shielding plaster or cast etc.

Sample application

① Room transmitters
② Central unit
③ Heating manifold with actuator, e. g. EMOtec or EMO T
④ Boiler



Function

The room transmitter compares the measured room temperature with the set setting value (xs). If the room temperature (xi) is below the setting value (xs), the room transmitter requests heat. If the setting value is exceeded, the request for heat is terminated. The relevant signal is sent to the receiver in the central unit by radio (433.70 MHz).

The central unit converts the signals from the maximum of 8 room transmitters into two-position signals. These are transferred to the thermal actuator via relay outputs. A maximum of 5 actuators can be connected per output channel.In total, 20 actuators can be connected to the central unit.

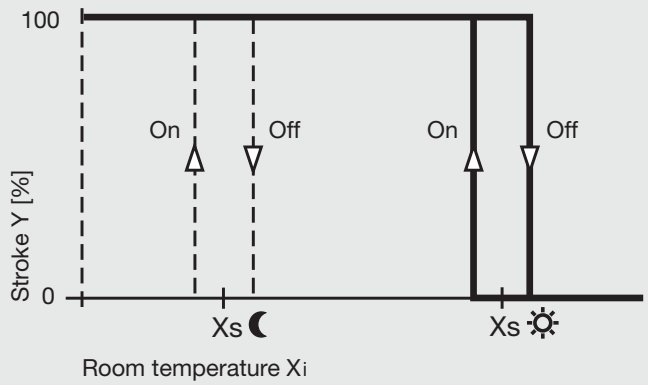
A change-over switch in the central unit enables actuators to be used currentless closed (NC) or currentless opened (NO). Reconnecting bridges can be used to switch the output channels 7 and 8 to potential-free output. If all valves are closed, the pump and/or the wall-mounted gas fired boiler switches off.

The central unit with digital automatic week clock can be programmed for two separated zones, with one time-controlled room temperature set-back of about 4 K for each zone (Zone 1: Output channels 1, 3, 5 and 7/ Zone 2: Output channels 2, 4, 6 and 8).

By adjusting the internal valve protection switch, the output channels are automatically activated for 5 minutes every day. In addition to the output LED flashing, if the radio transmission fails, an alarm can be set with another internal switch.

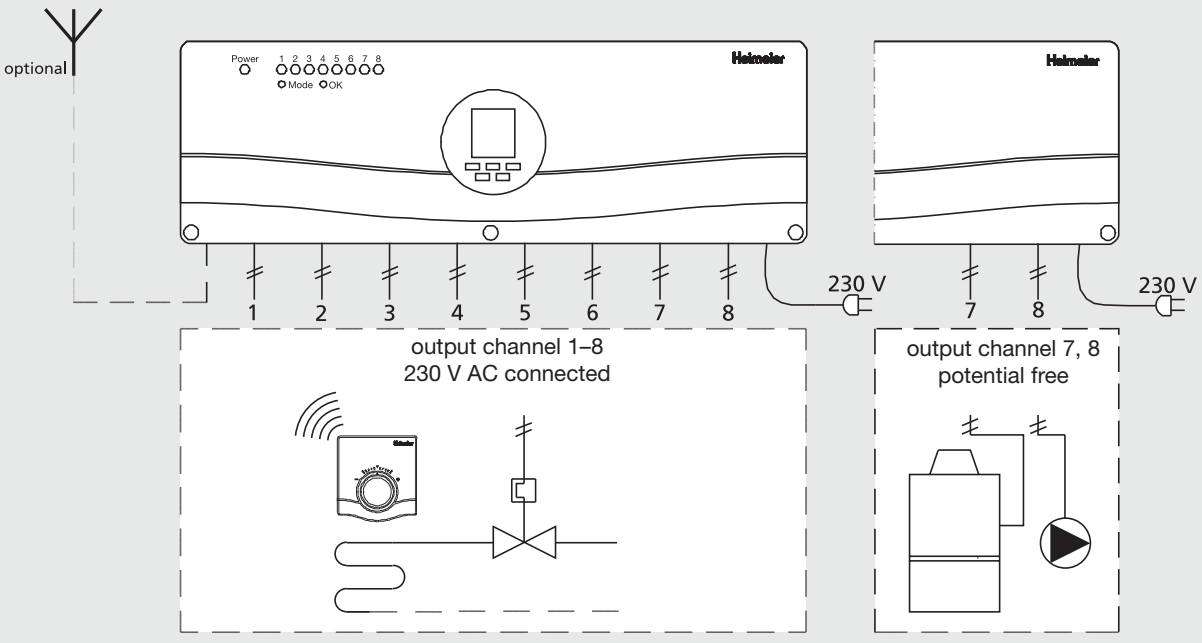
By inserting a bridge or an external switch, the Radiocontrol F system can also be used for control cooling.

Function chart



Action chart for heating operating mode with actuator in the model, closed and currentless

Schematic diagram



Operation

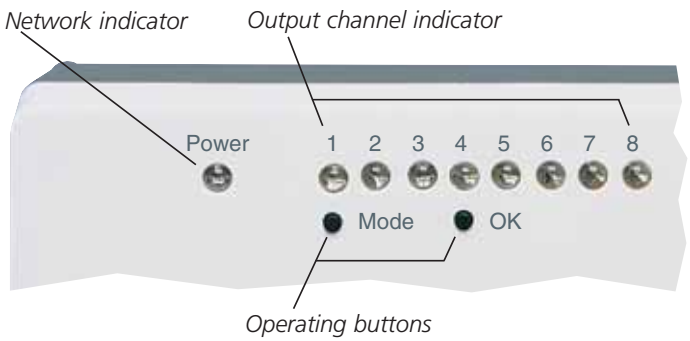
Start-up

For initial start-up, the room transmitters are allocated to one or several output channels on the central unit as follows:

1. **Set the central unit to installation mode**
   Keep the Mode and OK button pressed down until all LEDs flash.
   Then, release first the Mode button, then the OK button.
2. **Activate the room transmitter**
   Briefly press the allocation button on the room transmitter.
3. **Allocate the channel**
   Select the output channel on the central unit with the Mode key.
   Confirm the alloation by pressing the OK button until the corresponding LED is continuously lit (> 3 seconds).
4. **Additional channel allocations**
   For allocation of additional room transmitters or the same room transmitter when this needs to be installed to an additional channel, see steps 2. and 3.
5. **End installation mode**
   End installation mode on the central unit by pressing the mode and OK button until all LEDs flash (> 3 seconds) or after allocation of the 8th room transmitter, automatically.

Room transmitter

Central unit



Additional operating states of the central unit

Delete mode	deletes individual room transmitters in the installation
Reset mode	deletes all installations and sets the central unit back to the factory presettings
Test mode	Tests the output channels and the actuators connected to them
Transmission test mode	Tests the radio transmission between the central unit and the room transmitters
Alarm mode	is automatically triggered when a failure occurs in communication between the room transmitters and the central unit
Valve protection	every 24 hours the output channels to which a room transmitter has been allocated are activated for 5 minutes. Then, if it is connected, the pump output is also activated for 5 minutes.
Normal mode	normal operating status

For further information, see installation and operating instructions.

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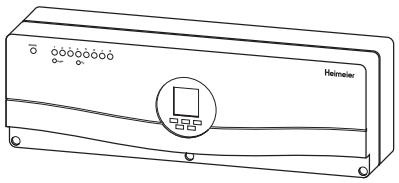
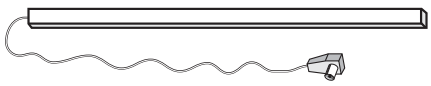
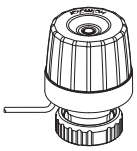
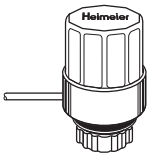
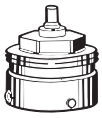
Article numbers

Illustration	Description	Art. no.
	**Room transmitter** including battery	**1630-00.500**
	**Central unit** without clock with digital two-channel week clock	**1631-00.000** **1632-00.000**

Accessories

Illustration	Description	Art. no.
	**External aerial**	**1631-00.433**
	**Replacement battery** 3,6 V lithium, size AA, 1.9 Ah, for room transmitters	**1630-00.433**

Thermal actuators

Illustration	Description	Model	Art. no.
	**EMOtec** thermal two-point actuator for floor heating. With position indicator (model NC). Suitable for all HEIMEIER thermostat valve bodies. For technical data, see EMOtec brochure.	230 V currentless closed (NC) currentless open (NO)	 **1807-00.500** **1809-00.500**
	**EMO T** thermal two-point actuator for heating, ventilation and air conditioning systems. Suitable for all HEIMEIER thermostat valve bodies. For technical data, see EMO T brochure.	230 V currentless closed (NC) currentless open (NO)	 **1831-00.500** **1835-00.500**
	**Connection to products** **from other manufacturers** Adapter for installing the EMOtec or EMO T to valve bodies or heating distributor from other manufacturers. Pipe thread M 30 x 1.5 according to factory norm.	Danfoss RA Danfoss RAV Danfoss RAVL Vaillant (Ø ≈ 30 mm) TA (M 28 x 1,5) Herz Markaryd Comap Oventrop (M 30 x 1,0) Giacomini Ista Rotex Uponor (Velta) - Euro-/Kompakt distributor or return valve 17 - Provario distributor	**9702-24.700** **9800-24.700** **9700-24.700** **9700-27.700** **9701-28.700** **9700-30.700** **9700-41.700** **9700-55.700** **9700-10.700** **9700-33.700** **9700-36.700** **9700-32.700** **9700-34.700** **9701-34.700**

Technical data

Room thermostat	
Battery type/service life:	3.6 V; lithium; min. 1.9 Ah; size AA/min. 5 years
Transmission frequency/power:	433.70 MHz/approx. 1 mW
- Range; interval	100 m outdoors, typically 30 m indoors; min. every 30 mins./max. every 2 mins.
- Protection from interference	from a generated code combination (65,536 codes) in each room transmitter
Function – operating mode switch:	day, night or automatic mode (with art. no. 1631: automatic mode = day mode)
Function – LED and button:	for operation start-up (allocation) and test mode
Temperature setting area:	6°C – 30°C day mode
- in set-back mode	approx. 4 K for day mode (heating operating mode)
Control response/switch hysteresis:	Two-point controller/approx. ±0,5 K
Type of protection:	IP 20 according to EN 60529
CE certification (EMV/RF):	CE ⓘ ID 0413 (EN/ETS 300-683 / EN 300-220-1 and EN 301 489-03)
Ambient temperature:	0°C to +50°C
Storage temperature:	0°C to +70°C
Housing, colour:	ABS, white according to RAL 9016 (grey body, RAL 7000)
Dimensions/installation:	77 mm x 84 mm x 32 mm (W x H x D)/mounted to wall or on a UP box

Central unit	
Operation voltage, frequency:	230 V AC (+/–10 %), 50 to 60 Hz
- Power consumption (for max.EMO T/tec)	nom. 60 VA in constant operation (operating phase approx. 1,000 VA)
- Connection cable, power cable	Plug-in device (Euro, 1.75 m), or can be freely laid with Ø min. 0.75 mm²/max. 2 mm²
Receiving frequency:	433.70 MHz (coded to allocated room transmitter)
- Receiving anntenna	internal, plug-in device (external antenna – see Accessories)
- Action if fault occurs (≥ 2 hrs.)	Output channel function: periodically 7 mins. on/14 mins. off and LED flashes
Function – 2 x buttons/ 9 x LEDs:	Allocation and test of room transmitters and output channels; network on
- Allocation retention	unlimited when loss of power occurs
Number of output channels (room transmitter):	max. 8 pieces; channels 1 to 8 for 8 heating zones with thermal actuators
- With connecting pump **or** thermal device	max. 7 pieces; channels 1 to 8 (7 heating zones) **without** channel 7 (thermal device) **or** channel 8 (pump)
- With connecting pump **and** thermal device	max. 6 pieces; channels 1 to 6 (6 heating zones) **with** channel 7 (thermal device) **and** channel 8 (pump)
- Connecting terminals (channels 1 – 8)	Plug-in devices, Ø min. 0.50 mm²/max. 2.0 mm²
Relay output channels nos. 1 – 8:	Turn-on voltage 230 V AC, max. 1 (0.2) A per channel in continuous operation
- EMO T/tec: Number; max. connection length	max. 5 pieces per channel / max. 20 pieces per central unit; 100 m (Ø 1.5 mm²)
- Channel 7 for connecting thermal device	switch, pot. free; max. 250 V AC/8 (2) A; no function for cooling operating mode
- Channel 8 for connecting pump	switch, pot.-free; max. 250 V AC/8 (2) A; lag time 10 min.
Clock (only art. no. 1632-00.000):	Digital two-channel week clock
- Number of program blocks	4 (on/off switch points) per day and clock channel (unlimited storage)
- Clock channel allocation [1] / [2]:	[1] to output channels 1, 3, 5 and 7/ [2] to output channels 2, 4, 6 and 8
- Time-slot pattern	Setting – per minute; display – per half hour
- Precision; power reserve	+/– 2.5 hrs/day; type 3 hours
- Summer/winter time changeover	Automatic or manual
Special functions:	Internal setting with a switch or switch bridge
- Selection – type EMO T/EMOtec	NC or NO (no mixed fitting permitted)
- Valve protection interval	on/off (interval actuators/pump for 5 mins./day)
- Acoustic alarm	on/off (approx. 10 hrs. depending on transmission breakdown e. g. due to battery failure in the room transmitter)
- Operating mode	Heating **or** cooling (change-over with external switch possible)
- Function channel 7/8	turn-on voltage 230 V AC (EMO T/tec) or pot.free contact (pump, thermal device)
Type of protection/safety class:	IP 30 according to EN 60529 / ⧈; II according to EN 60730
CE certification (EMV NS):	EN 60730-2-9 / EN 60730-1
Ambient temperature:	0°C to +50°C in operation
Storage temperature:	–20°C to +60°C
Housing, colour:	ABS, white according to RAL 9016 (grey body/RAL 7000)
Dimensions; installation:	314 mm x 110 mm x 58 mm (W x H x D); mounted to wall

external antennas	
Transmission frequency:	433.70 MHz
Connection cable; -length:	Coax 50 Ohm, plug-in device; 1.8 m (extendable by max. 50 m)
Dimensions/installation:	13 mm x 365 mm x 10 mm (W x H x D)/mounted to wall (vertically), self-adhesive

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Connection diagram

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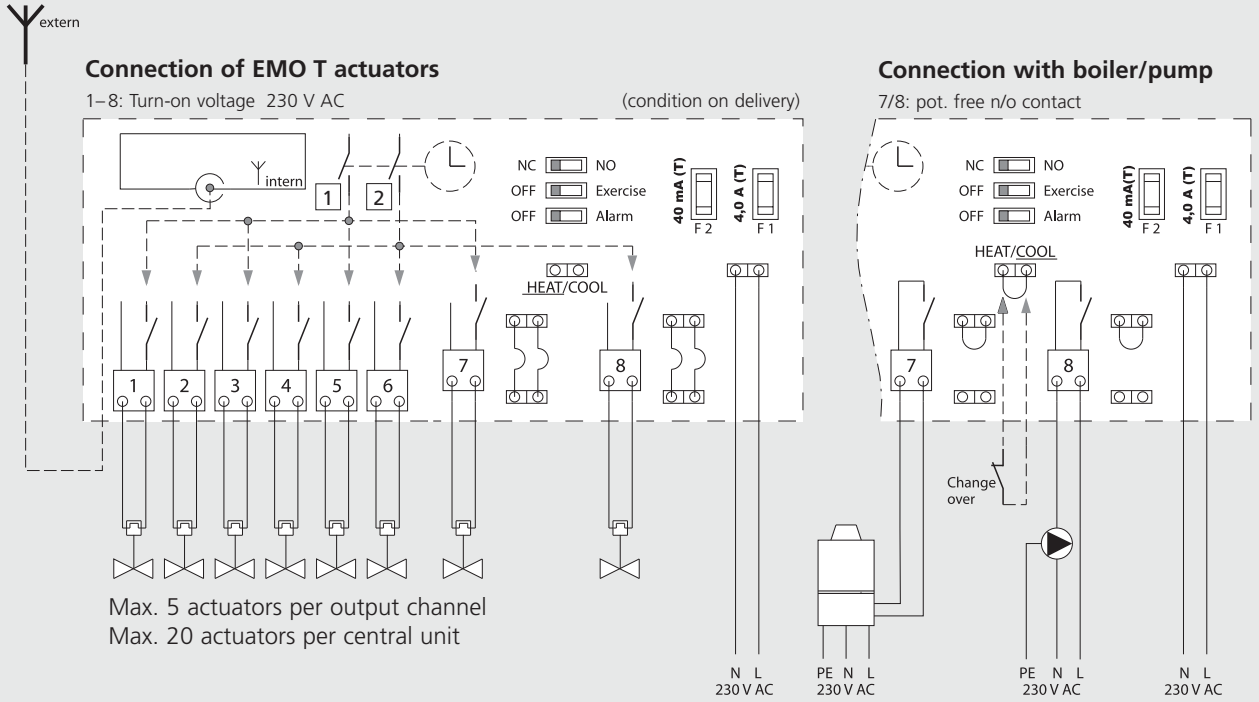
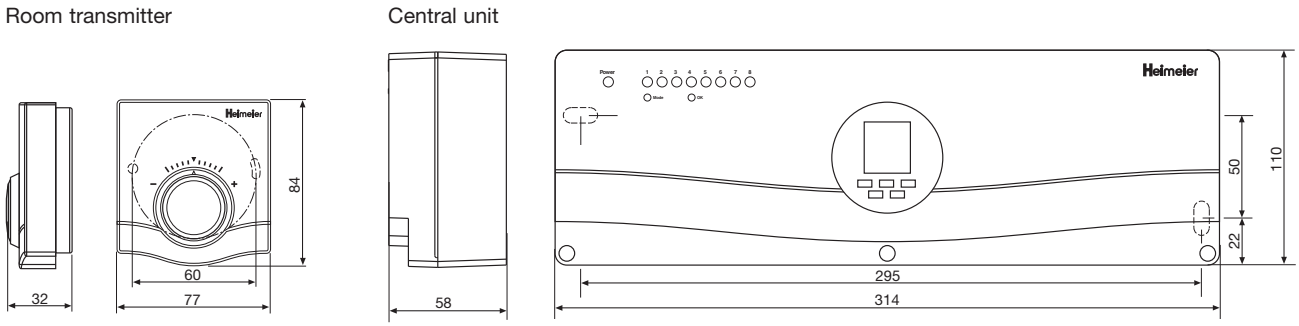


Dimensions



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