

## Programmable room thermostat, wired and wireless, battery powered

RDL211, RDL211/H, RDL211RF.ST



### For heating and/or cooling systems, such as gas boilers, reversible heat pumps, or zone valves

- Room temperature control
- 2-position, TPI, or 3-position control with On/Off output
- Two voltage-free relay outputs for heating, cooling, or changeover signal
- Two multifunctional inputs for external temperature sensors, open window detection, dewpoint monitoring, etc.
- Manual heating/cooling changeover with optional output signal for synchronization, or remote changeover via input
- 7-day scheduler
- E-paper display with touch keypad
- Adjustable commissioning and control parameters, including scheduler, via local HMI or Siemens Quick Config mobile application
- Operating voltage:
  - Room thermostats RDL211..      Batteries, 2 × AA
  - Wireless receiver RCR210RF      AC 230 V

## Use

The RDL... thermostat controls the room temperature in heating and cooling systems.

Typical applications:

- Apartments
- Single family homes

Controlled equipment:

- 2-position valve actuators
- 3-position valve actuators
- Gas or oil boilers
- Heat pumps (reversible and non-reversible)
- Circulating pumps

Suitable for applications:

- Radiator heating
- Radiant floor heating and cooling
- Radiant ceiling heating and cooling
- Radiant floor heating with chilled ceiling cooling

## Functions

- Room temperature control via built-in or external sensor
- 2-position control with On/Off or TPI (Time Proportional Integral) behavior
- 3-position control with PI behavior
- Operating mode selection: COMFORT, ECO, Auto, and Protection (frost protection enabled)
- Manual heating/cooling changeover with optional output signal for synchronization with other devices such as heat pump and thermostats
- Remote heating/cooling changeover via digital input
- Frost protection (enabled at 5 °C or disabled)
- Temperature boost function
- 7-day scheduler with up to 8 switching points per day
- Current setpoint override, effective until the next scheduled switching point
- Yearly clock with automatic Daylight-Saving Time (DST) adjustment
- Absence mode with selectable start/end dates and dedicated temperature setpoint
- Limitation of minimum and maximum setpoint adjustments for heating and cooling
- Radiant panel temperature minimum limitation for cooling and maximum limitation for heating
- Optimum start/stop
- Valve/pump kick function to prevent seizure or sticking
- Two multifunctional inputs X1 and D1, configurable for:
  - Room temperature external sensor (AI)
  - Radiant panel temperature (AI)
  - Window contact (DI)
  - Setback to energy saving (DI)
  - Heating/cooling changeover (DI)
  - Dewpoint monitor (DI)
- Sensor type X1 configurable: NTC3K or NTC10K
- Position digital input X1, D1 configurable: Normally open or normally closed
- Output Q2 freely configurable, unless reserved by the application:
  - Switch off in Protection
  - Switch on in COMFORT

- Switch on upon heating or cooling demand
- Switch on upon heating or cooling demand with 3-minute delay
- Switch on upon heating demand
- Switch on upon cooling demand
- Displays current room temperature or setpoint
- Activates/deactivates screen saver
- Activates/deactivates key touch sound
- E-paper display with configurable dark mode
- User interface available in 20 selectable languages
- Keypad lock configurable: full lock, menu lock, or expert parameter access restriction; unlockable via long button press or PIN code
- Configurable commissioning and control parameters, which are retained after power cycles
- Configuration wizard after the first power-up or after factory reset
- Parameters and scheduler settings configurable via Siemens Quick Config mobile application using NFC
- Activates/deactivates NFC communication
- Reloading factory settings via parameter
- Factory reset button to restore default settings and clear RF pairing

#### **RDL211RF.ST only**

- Wireless operating frequency 433 MHz
- Override button to control output
- Signal strength indication

<b>NOTICE</b>	
<b>!</b>	<ul style="list-style-type: none"> <li>● When using the valve/pump kick function, ensure that the controlled device is a pump or valve.</li> <li>● Don't press the two buttons on RCR210RF at the same time if terminals Q14 and Q24 are connected to a 3-position valve actuator, as this may damage the valve.</li> </ul>

### Technical design

- The thermostat consists of:
  - Control unit with display, buttons and room temperature sensor
  - Mounting plate with screw terminals or table stand
- The RCR210RF receiver, which is part of the RDL211RF.ST thermostat set, consists of:
  - Control unit with buttons and LEDs
  - Mounting plate with screw terminals

For more information about the buttons, display and LEDs, see document [A6V16530803](#).

## Type summary

Type	Stock number	Description
RDL211	S55770-T521	Programmable room thermostat, heating & cooling, AA batteries
RDL211/H	S55770-T522	Programmable room thermostat, heating & cooling, horizontal orientation, AA batteries
RDL211RF.ST	S55770-T523	Programmable room thermostat, heating & cooling, RF Set

## Accessories

Type	Stock number	Description
ARG101	S55772-T112	Italian adapter plate for RCR210RF

## Delivery

ARG101 is not included in the delivery and must be ordered separately.

## Inbox item







### RDL211 and RDL211/H

Items	Quantity
Thermostat with mounting plate	1
Battery	2
Mounting instructions	1







### RDL211RF.ST






Items	Quantity
Thermostat with mounting plate	1
Receiver with mounting plate	1
Table stand	1
Battery	2
Mounting instructions	1

**Sensors**

Type of units		Product no.	Data sheet *)
Cable temperature sensor for under floor applications, cable length 4 m NTC (3 kΩ at 25 °C)		QAP1030/UFH	N1854
Cable temperature sensor, cable length 2.5 m NTC (3 kΩ at 25 °C)		QAH11.1	N1840
Cable temperature sensor, PVC cable length 2 m NTC (10 kΩ at 25 °C)		QAP1030.200	N1831
Room temperature sensor NTC (3 kΩ at 25 °C)		QAA32	N1747
Cable temperature sensor, PVC cable length 2 m NTC (10 kΩ at 25 °C)		QAA2030	N1745
Condensation monitor		QXA21..	A6V10741072

**Actuators**

Type of units		Product no.	Data sheet *)
Electrothermal actuator for radiator valves, NC, AC 230 V operating voltage, 2-position control signal		STA321..	A6V14028280
Electrothermal actuator for radiator valves, NO, AC 230 V operating voltage, 2-position control signal		STP321..	A6V14028280
Electromotoric actuators for zone valves, AC 230 V operating voltage, 2-position control signal		SFA21/18	N4863
Electromotoric rotary actuator with spring-return for ball valves, AC 230 V, 2-position, 2 Nm, 30/15 s		GQD321.9A	N4659
Electromotoric rotary actuator for ball valves, non-spring return, AC 230 V, 2-position/3-position, 5 Nm, 150 s		GDB341.9E	A6V10636150
Electromotoric actuator for globe/control valves, AC 230 V, 3-position control signal		SSB.331.09..	A6V15348908
		SSC.331.09..	A6V15348909
		SSD.331.09..	A6V15767615

Type of units		Product no.	Data sheet <sup>*)</sup>
		SSF.331.09..	A6V15348910
Electromotoric actuator for PICV combi valves and radiator valves, AC 230 V, 3-position control signal		SSA331	A6V11858276
Electrothermal actuator for radiator valves, NC, AC/DC 24 V operating voltage, 2-position control signal		STA121..	A6V14028280
Electrothermal actuator for radiator valves, NO, AC/DC 24 V operating voltage, 2-position control signal		STP121..	A6V14028280
Electromotoric actuators for zone valves, AC 24 V operating voltage, 2-position control signal		SFA71/18	N4863
Electromotoric rotary actuator with spring-return for ball valves, AC/DC 24 V, 2-position, 2 Nm, 30/15 s		GQD121.9A	N4659
Electromotoric rotary actuator for ball valves, non-spring return, AC/DC 24 V, 2-position/3-position, 5 Nm, 150 s		GDB141.9E	A6V10636150
Electromotoric actuator for globe/control valves, AC 24 V, 3-position control signal		SSB131.09..	A6V15348908
		SSC131.09..	A6V15348909
		SSD131.09..	A6V15767615
		SSF131.09..	A6V15348910
Electromotoric actuator for PICV combi valves and radiator valves, AC 24 V, 3-position control signal		SSA131	A6V11858276

<sup>\*)</sup> The documents can be downloaded from [www.siemens.com/bt/download](http://www.siemens.com/bt/download).



Document title	Product	Document number
Mounting instructions	RDL211	A6V16530386
	RDL211/H	A6V16530509
	RDL211RF.ST	A6V16530614
Operation manual	RDL211, RDL211/H RDL211RF.ST	A6V16530803
CE declaration	RDL211, RDL211/H	A5W02940089A
	RDL211RF.ST	A5W02940092A
RCM declaration	RDL211, RDL211/H	A5W02940094A
	RDL211RF.ST	A5W02940097A
UKCA declaration	RDL211, RDL211/H	A5W02940099A
	RDL211RF.ST	A5W02940100A
Product environmental declaration	RDL211, RDL211/H	A5W02939013A
	RDL211RF.ST	A5W02939014A



Related documents such as environmental declarations, CE declarations, etc., can also be downloaded at the following Internet address:

[www.siemens.com/bt/download](http://www.siemens.com/bt/download)

Notes

Safety

 <b>CAUTION</b>	
	<p><b>National safety regulations</b></p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> <li>● Observe national regulations and comply with the appropriate safety regulations.</li> </ul>

 <b>WARNING</b>	
	<p><b>Explosion due to fire or short-circuit, even with discharged batteries</b></p> <p>Risk of injury due to flying parts</p> <ul style="list-style-type: none"> <li>● Prevent the batteries from coming in contact with water.</li> <li>● Do not recharge batteries.</li> <li>● Do not damage or disassemble batteries.</li> <li>● Do not heat batteries over 60 °C.</li> </ul>

## ⚠ WARNING

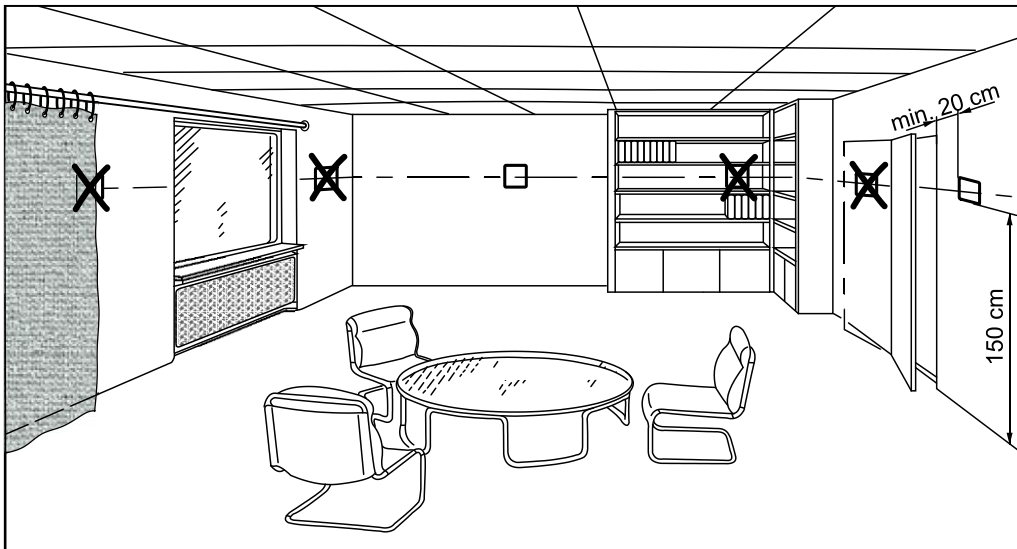


### Electrolyte leakage

Chemical burns

- Use suitable protective gloves to grasp damaged batteries.
- Immediately rinse eyes with plenty of water if electrolyte comes into contact with eyes. Consult a doctor.

## Mounting



### Mounting


- RDL211, RDL211/H and RCR210RF are suitable for wall mounting.
- RDL211RF is suitable for wall mounting and free standing.
- Recommended height for wall mounting: 1.50 m above the floor.
- If possible, mount RDL211RF close to RCR210RF. Note that communication ranges may vary due to walls, floors, wireless interferences, and other factors that can reduce signal strength. Check the signal strength via diagnostic parameter D06.
- Do not mount or place the thermostat in recesses, behind curtains or doors, or above or near heat sources.
- Do not mount or place the thermostat near large metal structures or other construction elements with fine metal meshes such as special glass or special concrete.
- Do not mount or place the thermostat where it is exposed to dripping water, moisture or excessive heat.
- Do not mount or place the thermostat on metal surfaces.
- Avoid placing RDL211RF.ST inside or near metal or sources of radio or electromagnetic energy or interference.
- Avoid direct sunlight.
- Seal the conduit box or the installation tube if any, as air currents can affect sensor readings.
- Observe allowable ambient conditions.
- Keep the thermostat out of the reach of people (including children) whose physical, sensory or mental capabilities, knowledge, or experience prevents them from using the thermostat safely without supervision or instructions.
- If the adapter plate ARG101 is used, assemble its mounting frame and mounting plate in such a way that the larger round positioning guide embossed on the mounting frame is on the top.


### Wiring (RDL211, RDL211/H and RCR210RF)

- Make sure wiring, protection, and earthing comply with local regulations.
- Disconnect from power supply before mounting/dismantling and wiring.
- Correctly size the cables to the thermostat and valve actuators.
- Use only valve actuators rated for AC 24...230 V.
- Use external upstream protection with a maximum 10 A circuit breaker in the supply lines under all circumstances.

### Installation

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<b>⚠ WARNING</b>	
	<p><b>No internal line protection for supply lines to external consumers</b></p> <p>Risk of fire and injury due to short circuits</p> <ul style="list-style-type: none"><li>• Adapt the line diameters as per local regulations to the rated value of the installed fuse.</li></ul>

<b>⚠ WARNING</b>	
	<p><b>Risk of explosion</b></p> <p>Personal injury and property damage</p> <ul style="list-style-type: none"><li>• Install the battery at the correct polarity (+/-) using the illustration in the battery compartment.</li><li>• Install only the correct battery types according to the indication in the battery compartment.</li><li>• In case of a leakage, avoid contact with skin, eyes and mucous membranes.</li><li>• Remove leaking batteries from the battery compartment with a cloth.</li></ul>

Observe the following:

- Batteries must be undamaged.
- Do not mix new and used batteries.

### Commissioning

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Commissioning

- The thermostat is ready for use after batteries are inserted.
- You can configure the thermostat locally via the user interface, or remotely via the Quick Config mobile application even when the device is still in the packaging box and unpowered.  
Note: Your phone must support the NFC functionality to use Quick Config for configuration.
- The wireless thermostat set (RDL211RF and RCR210RF) is paired at the factory. Re-pairing is needed if you change or reset a device. See the [operation manual](#) for details.

### Operation

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See the [operation manual](#) for details.

### Maintenance

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Apart from replacing batteries when the local screen displays a low battery notification, the thermostat is maintenance-free. See the [operation manual](#) for information about replacing batteries.

## Open Source Software (OSS)

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These devices use Open Source Software (OSS). All Open Source Software components used in the product (including copyrights and licensing agreement) are available at <http://siemens.com/bt/download>.

### Software license overview

OSS document ID	Device
A6V13482237	RDL211, RDL211/H, RDL211RF.ST

## Disposal

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This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national regulations.

For additional details, refer to [Siemens information on disposal](#).

## Warranty

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Technical data on specific applications are only valid together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

<b>Power supply (RDL211 and RDL211/H)</b>	
Operating voltage	DC 3 V (2 × 1.5 V AA alkaline batteries)
Battery life	2 years (with NANFU, EXCELL-LR6)

<b>Power supply (RDL211RF)</b>	
Operating voltage	DC 3 V (2 × 1.5 V AA alkaline batteries)
Battery life	2 years (with NANFU, NECTIUM-LR6)

<b>Power supply (RCR210RF)</b>	
Operating voltage	AC 230 V (+10%, -15%)
Frequency	50/60 Hz
Power consumption (without load)	Max. 5 VA

<b>Switching capacity of relay (RDL211, RDL211/H and RCR210RF)</b>	
Voltage	AC 24...230 V
Qx rating min., max. resistive (inductive)	8 mA...5 (2) A
Contact life at AC 230 V At 5 A res.	Guided value: 1 × 10 <sup>5</sup> cycles

**⚠ WARNING**



**No internal fuse.**

External upstream protection with a maximum 10 A circuit breaker in the supply lines is required under all circumstances.

<b>External protection (RDL211, RDL211/H and RCR210RF)</b>	
Circuit breaker	Maximum 10 A Type B, C or D

<b>Multifunctional input</b>	
X1-M	
Temperature sensor input	

<b>Multifunctional input</b>	
Type	NTC 3k
Temperature range	-20...70 °C
Temperature sensor input	
Type	NTC 10k
Temperature range	-20...70 °C
Digital input	
Operating action	Selectable (NO/NC)
Contact sensing	Dry contact
Insulation against mains power	SELV

<b>Digital input</b>	
D1-M	
Digital input	
Operating action	Selectable (NO/NC)
Contact sensing	Dry contact
Insulation against mains power	SELV

<b>Radio parameters</b>	
Frequency band	433 MHz
Maximum radio-frequency power	8 dBm
Communication protocol	Proprietary and encrypted
Communication channels	0...10
Device pairing	Paired at the factory or manual re-pairing

<b>Functional data</b>	
Frost protection	5 °C (factory setting) or disabled
Setpoint setting range	5...40 °C
<b>Built-in room temperature sensor</b>	
Accuracy at 25 °C	< ±0.5 K
Temperature calibration range	±5 K

<b>Functional data</b>	
<b>Resolution of settings and displays</b>	
Setpoints	0.5 °C
Room temperature	0.5 °C

<b>Ambient conditions and protection classification</b>	
Degree of protection of housing as per EN 60529	IP30
<b>Protection against electrical shock as per EN 60730-1</b>	
RDL211	Class II
RDL211/H	Class II
RDL211RF	Class III
RCR210RF	Class II
<b>Climatic ambient conditions</b>	
Transport and storage (in packaging)	<ul style="list-style-type: none"> <li>• Temperature: -25...+70 °C</li> <li>• Ambient humidity: &lt; 95 % r.h. (non-condensing)</li> </ul>
Operation (in dry locations having no temperature or humidity control)	<ul style="list-style-type: none"> <li>• Temperature: 0...50 °C</li> <li>• Ambient humidity: &lt; 95 % r.h. (non-condensing)</li> </ul>
<b>Mechanical ambient conditions</b>	
Transport (in transport packaging) as per IEC/EN 60721-3-2	Class 2M4
Operation as per IEC/EN 60721-3-3	Class 3M11
Atmospheric pressure	Min. 700 hPa (equal to max. 3000 m above sea level)

<b>Standards, directives and approvals</b>	
EU conformity (CE) (RDL211 and RDL211/H)	See EU declaration of conformity A5W02940089A*.
EU conformity (CE) (RDL211RF.ST)	See EU declaration of conformity A5W02940092A*.
RCM conformity (RDL211 and RDL211/H)	See RCM declaration of conformity A5W02940094A*.
RCM conformity (RDL211RF.ST)	See RCM declaration of conformity A5W02940097A*.
UK conformity (UKCA) (RDL211 and RDL211/H)	See UK declaration of conformity A5W02940099A*.

<b>Standards, directives and approvals</b>	
UK conformity (UKCA) (RDL211RF.ST)	See UK declaration of conformity A5W02940100A*.
Environmental compatibility (RDL211 and RDL211/H)	The product environmental declaration (A5W02939013A*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Environmental compatibility (RDL211RF.ST)	The product environmental declaration (A5W02939014A*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

\* The documents can be downloaded from [www.siemens.com/bt/download](http://www.siemens.com/bt/download).

<b>Eco design and labeling directives</b>		
Based on EU Regulation 813/2013 (Eco design directive) and 811/2013 (Labelling directive) concerning space heaters and combination heaters, the following classes apply:		
Application with On/Off operation of a heater	Class I	value 1 %
TPI (PWM) room thermostat, for use with On/Off output heaters	Class IV	value 2 %

<b>General</b>	
Display language	cs, da, de, et, en, es, fr, it, lv, lt, hu, nl, pl, pt, ro, sk, fi, sv, tr, el
Housing color	RAL9016
<b>Thermostat with box, user document and accessory</b>	
RDL211	306 g
RDL211/H	306 g
RDL211RF.ST	544 g
<b>Thermostat</b>	
RDL211	132 g
RDL211/H	132 g
RDL211RF	120 g
<b>Receiver</b>	
RCR210RF	109 g

## Electrical connections (RDL211, RDL211/H and RCR210RF)

Connection terminals

Screw terminals

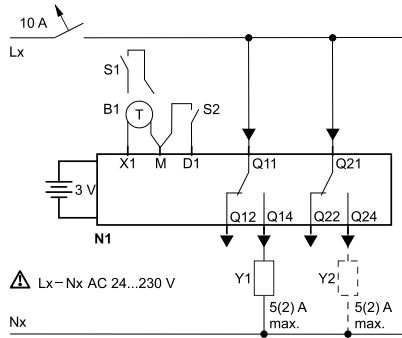
For solid wires or prepared stranded wires

1 × 0.5...2.5 mm<sup>2</sup> or 2 × 0.5...1.5 mm<sup>2</sup>

### Connection diagrams

#### RDL211, RDL211/H

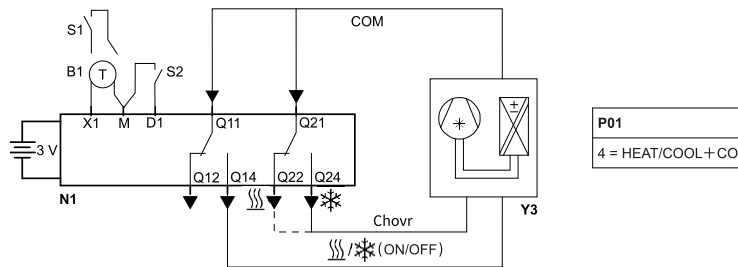
##### On/off devices



P01	Y1	Y2
1 = HEATING	⋯	→ P50
2 = COOLING	❄	→ P50
3 = HEAT/COOL	⋯/❄	→ P50
4 = HEAT/COOL + CO	⋯/❄	Chovr
5 = HEAT + COOL	⋯	❄

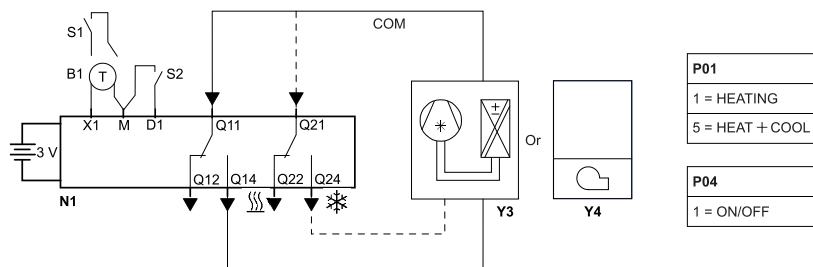
P04
1 = ON/OFF

##### Reversible heat pump



P01
4 = HEAT/COOL + CO

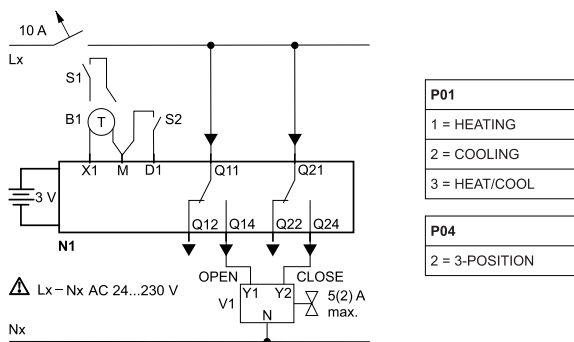
##### Heat pump (reversible/non-reversible) or boiler



P01
1 = HEATING
5 = HEAT + COOL

P04
1 = ON/OFF

### 3-position valve actuator



- Lx, Nx Live, AC 24...230 V
- N1 Wired room thermostat RDL211 and RDL211/H
- Y1, Y2 Actuating device AC 24...230 V
- V1 Actuating device AC 24...230 V
- Y3 Heat pump
- Y4 Boiler
- S1, S2 Potential-free switch
- B1 External temperature sensor

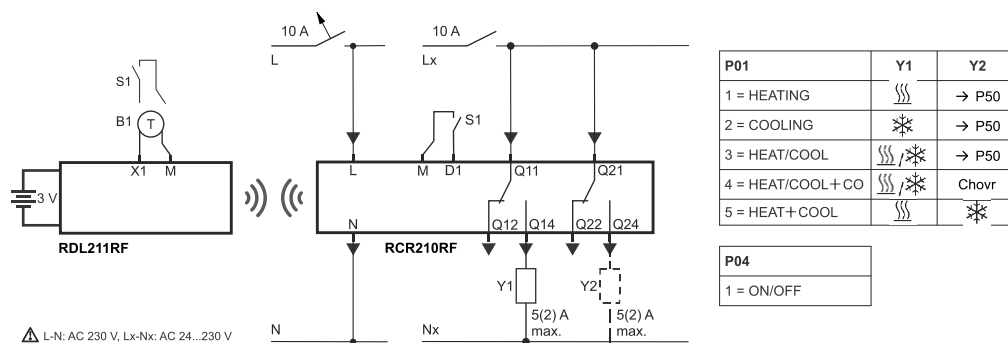
### ⚠ WARNING



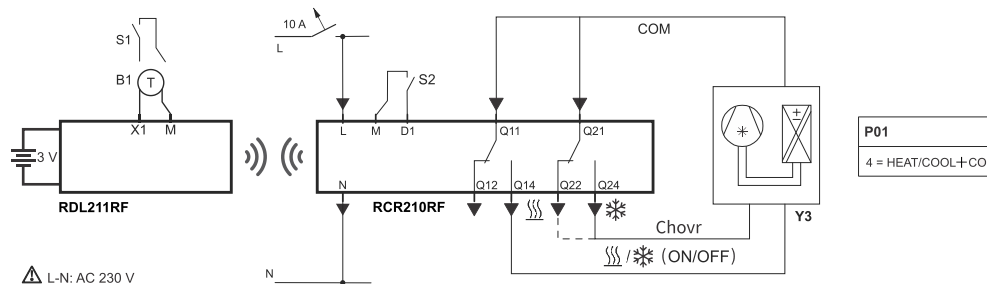
- Current greater than 5 (2) A is not allowed to pass through RDL211 and RDL211/H. An additional relay or contactor must be installed on high-current devices.
- Do not mix SELV/PELV with mains power on Q11 and Q21.

### RDL211RF.ST

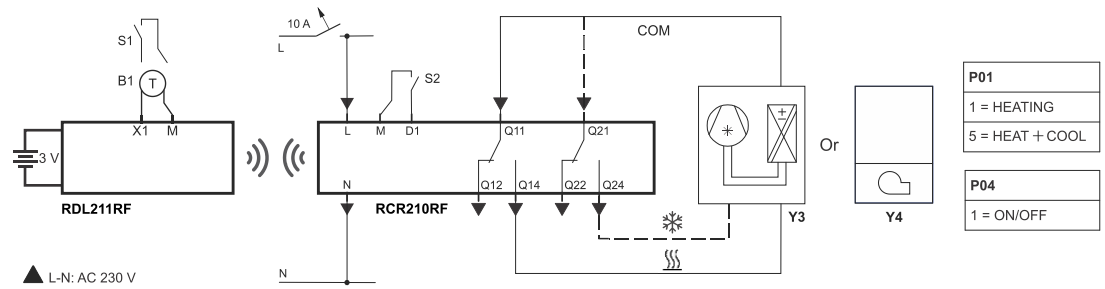
#### On/off devices



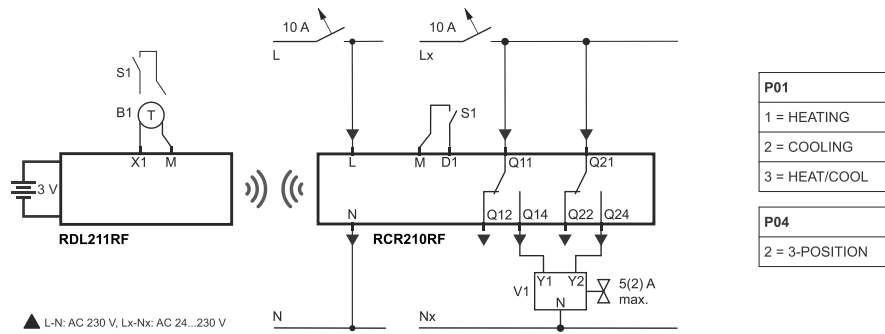
#### Reversible heat pump



## Heat pump (reversible/non-reversible) or boiler



## 3-position valve actuator



L, N	Operating voltage, AC 230 V	N1	Room thermostat RDL211RF
Lx, Nx	Live, AC 24...230 V	N2	Receiver RCR210RF
Y1, Y2	Actuating device AC 24...230 V	V1	Actuating device AC 24...230 V
Y3	Heat pump	Y4	Boiler
S1, S2	Potential-free switch	B1	External temperature sensor

### ⚠ WARNING



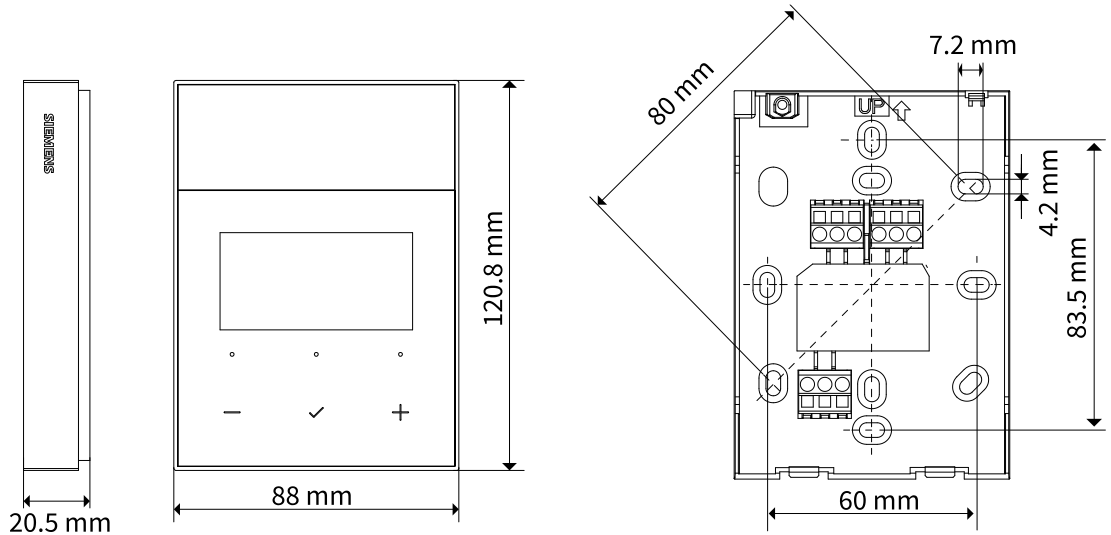
- Current greater than 5 (2) A is not allowed to pass through RCR210RF. An additional relay or contactor must be installed on high-current devices.
- Do not mix SELV/PELV with mains power on Q11 and Q21.

RDL211 and RDL211/H	RDL211RF.ST
<p>Room thermostat with direct control of a gas-fired wall-mounted boiler</p>	<p>Room thermostat with wireless control of a gas-fired wall-mounted boiler</p>
<p>Heating/cooling with valve</p>	<p>Floor heating with valve</p>
<p>Heating/cooling with pump</p>	<p>Floor heating with pump</p>
<p>Heating &amp; cooling with valve</p>	

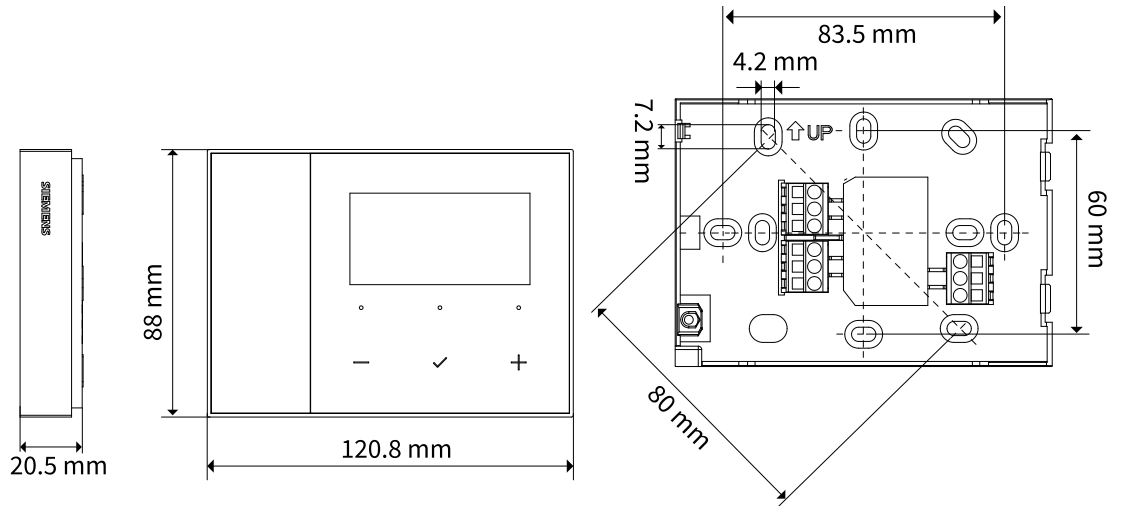
F1	Thermal reset limit thermostat	V1	Magnetic valve
F2	Safety limit thermostat	V2	2-port valve
N1	RDL211, RDL211/H or RDL211RF	V3	Mixing 3-port valve with manual adjustment
N2	RCR210RF	V4	3-port valve
M1	Circulating pump		

## Dimensions

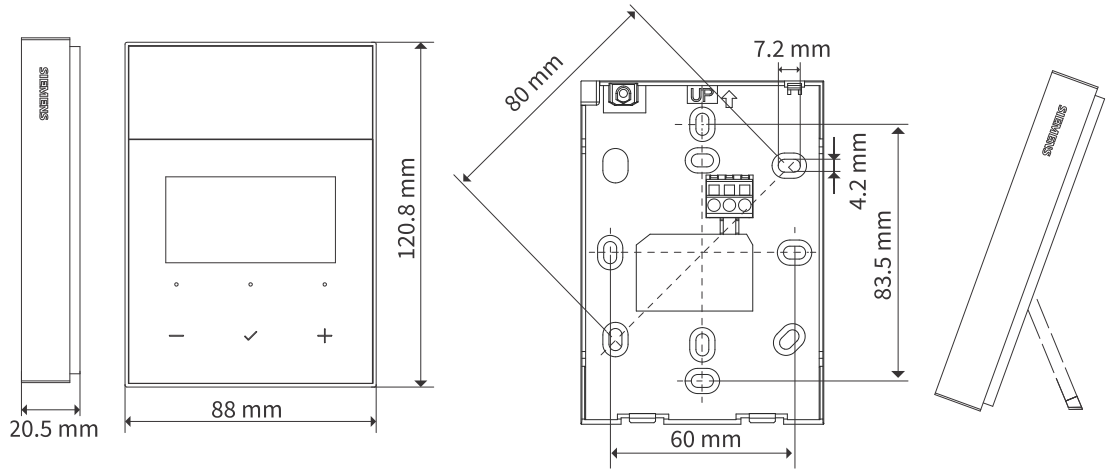
### RDL211



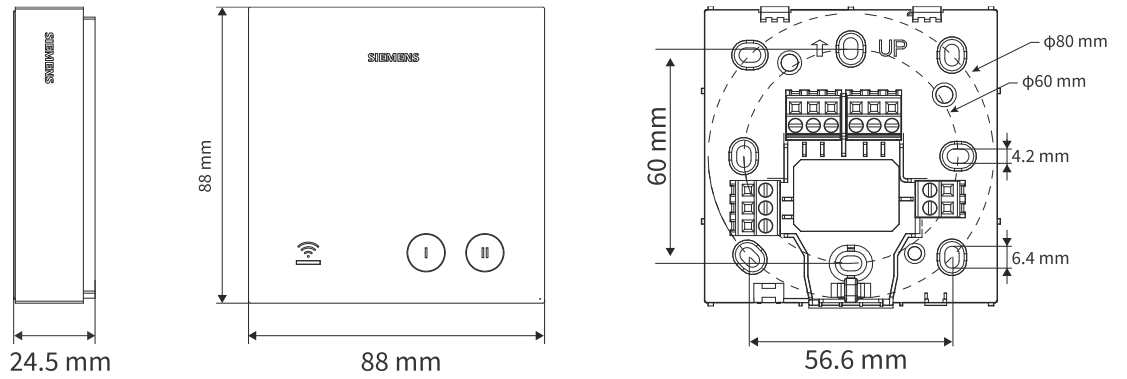
### RDL211/H



**RDL211RF**



**RCR210RF**





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