

## Wireless room thermostat with LCD

RDH100RF/SET



RDH100RF (Transmitter)



RCR100/433 (Receiver)

### Non-programmable, for heating systems

- Large LCD display
- RDH100RF, transmitter, battery powered
- RCR100/433, receiver, mains powered
- Communication of the set is bonded ex factory
- TPI control for use with ON/OFF heating systems

## Use

The device comprises of 1 RDH100RF (transmitter) and 1 RCR100/433 (receiver), is used to control the room temperature in heating systems.

Typical applications:

- Homes
- Residential buildings
- Schools
- Offices

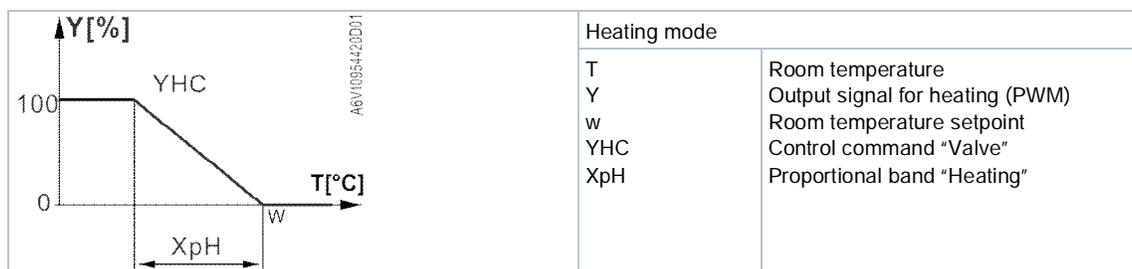
The device can be used together with the following equipment:

- Thermal valves or zone valves
- Combi boilers
- Gas or oil burners
- Pumps

## Functions

### Temperature control

The device uses a TPI (Time proportional integral) control algorithm to periodically switch on and off the heating system. The period time and pulse length of the control signal (PWM) are determined by setpoint and the measured room temperature via its built-in sensor.



### Backup

When removing the batteries, the setpoints and information required for operating mode changeover are retained for max. 2 minutes.

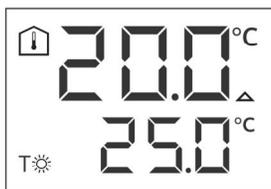
### Equipment combinations

Description		Product number	Data sheet *)
Electrothermal actuator (for radiator valves)		STA23..	4884
Electrothermal actuator (for small valves 2.5mm)		STP23..	4884

\*) The documents can be downloaded from <http://siemens.com/bt/download>.

## Display

The digital display shows the current room temperature and the comfort temperature setpoint. When the heating output is active, the triangle symbol is displayed.



## Ordering

When ordering, specify both name and product number, e.g. room temperature controller RDH100RF/SET.

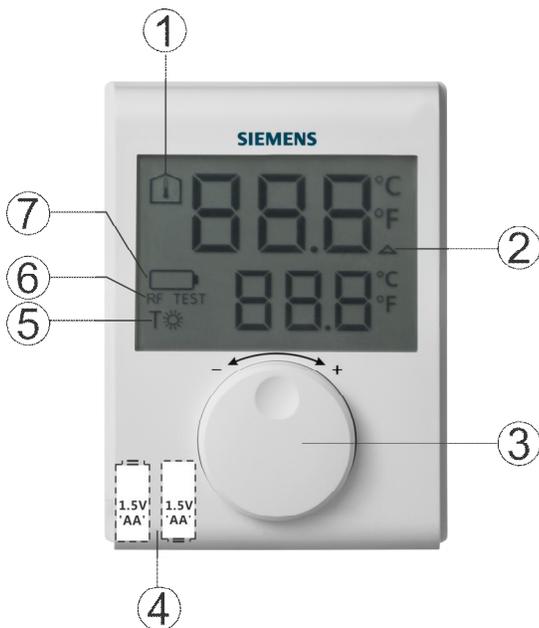
Order valves and actuators as separate items.

## Mechanical design

The transmitter consists of 4 parts:

- Plastic housing with digital display containing the electronics, operating elements and built-in room temperature sensor
- Baseplate (mounting base)
- Battery compartment
- Fold-out stand

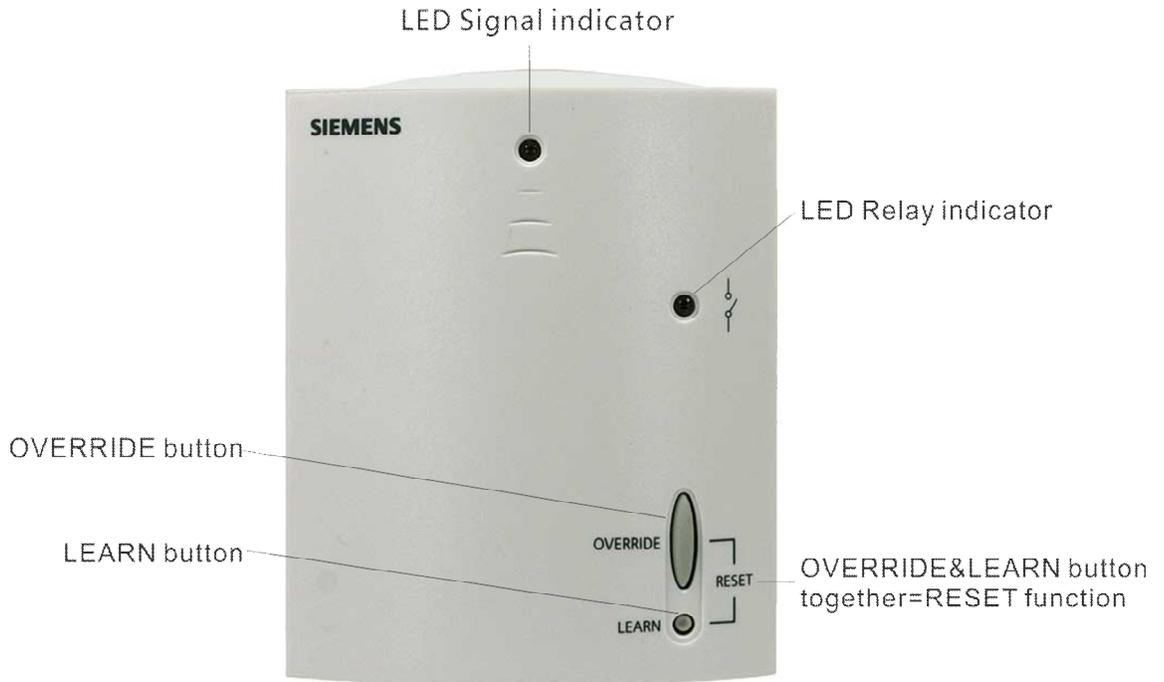
The housing engages in the baseplate and snaps on. There is a reset button on the rear of the transmitter.



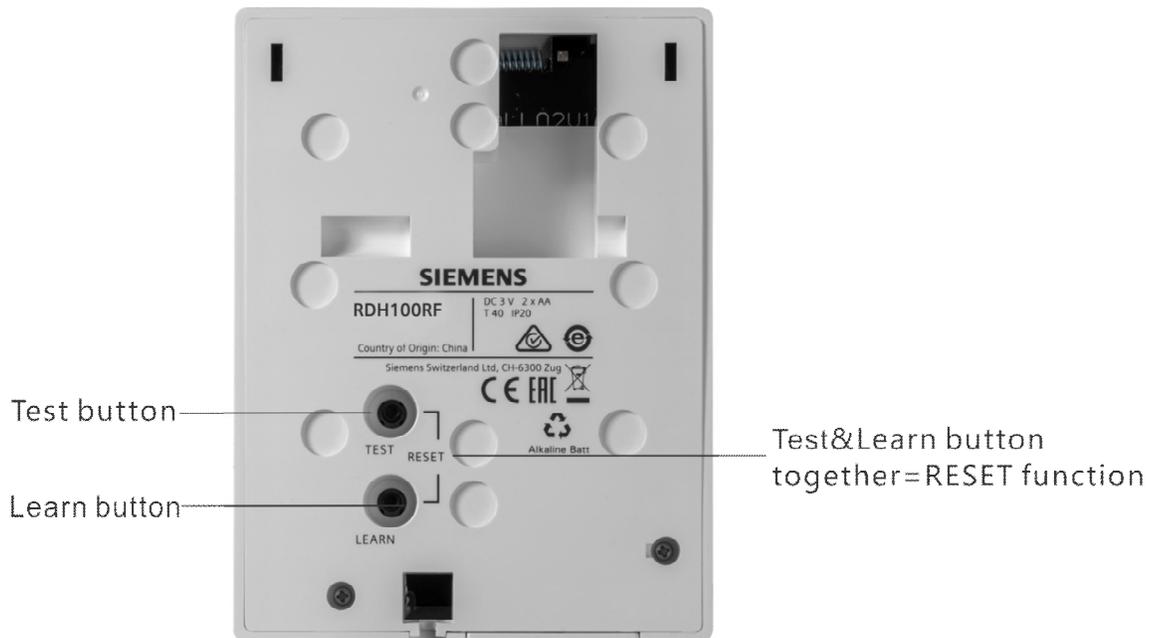
Elements	1		Display of the room temperature in °C / °F
	2		Indicates a request for heating
	3		Temperature setting knob
	4		Battery compartment

	5	T☀️	Comfort temperature setpoint
	6	RF TEST	Indicates RF signal test
	7	🔋	Indicates low battery power; replace batteries

The receiver is located in a plastic housing with LEDs and buttons.



The transmitter is located in a plastic housing. Two buttons are visible on the rear when removing the baseplate.



## OVERRIDE

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Override allows for temporarily overriding the active value from the sender. Override responds differently depending on the radio connection (normal or fault).

Example A: Normal connection between sender and receiver

Press the OVERRIDE button to overwrite the value for ca. 14 minutes. The value then returns to the setpoint.

Example B: Faulty connection between sender and receiver

Press the OVERRIDE button to permanently override the value. The value returns to the setpoint after the connection between sender and receiver works again.

## RF LED

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RF state	RF LED
Power up (first 5 seconds)	Flash RED
Power up (after 5 seconds)	RED
Press OVERRIDE switch	Flash RED + ORANGE (amber) (4 seconds)
Learning period	No LED
Software reset	RED
RF receive	GREEN
No RF within last 25 minutes	RED
Manual override (RF receive)	Flash ORANGE

## Relay LED

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Relay state	Relay LED
From OUT to ON (first 5 seconds)	Flash ORANGE
ON	ORANGE
From ON to OFF (after 5 seconds)	Flash ORANGE
OFF	OFF

## Mounting

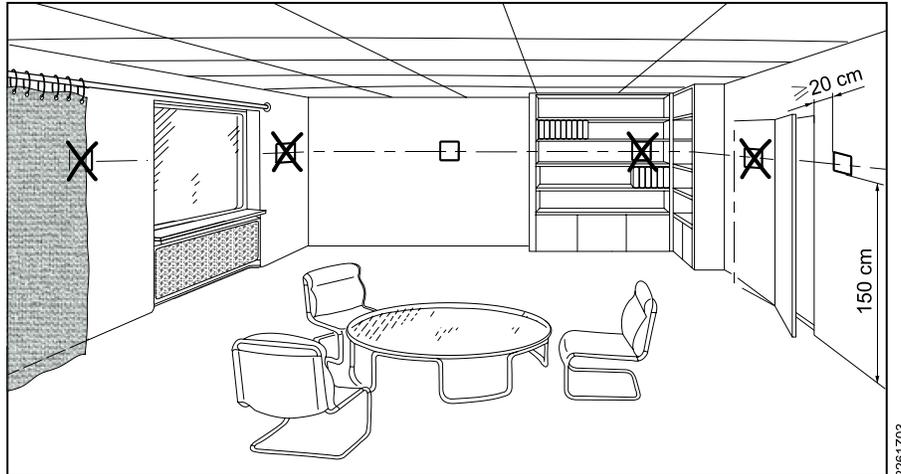
When mounting the transmitter, attach the baseplate first. You need to mount the transmitter on a flat wall. (For details, refer to the separate mounting instructions A6V10974421.)

The transmitter comes with a fold-out stand and may be used as a "mobile" device.

Mounting the receiver does not require a baseplate. Connect the electrical connections first and then fit and secure the receiver in compliance with local regulations. (For details, refer to the separate mounting instructions A6V10974421.)

If the reference room contains thermostatic radiator valves, set them to their fully open position.

For commissioning, refer to the operating instructions A6V101035988.



- The devices are suitable for wall mounting.
- Recommended height: 1.5 m above the floor.
- Do not mount the devices in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Avoid direct solar radiation and drafts.
- Seal the conduit box or the installation tube if any, as air currents can affect sensor readings.
- Adhere to allowed ambient conditions.

## Change of batteries

If the battery symbol appears, the batteries are almost empty and must be replaced.

## Reset

Simultaneously press the TEST and LEARN buttons on the rear of the transmitter to reset it.

Simultaneously press the OVERRIDE and LEARN buttons to reset the receiver. This resets all individual settings to their default values.

## Maintenance

The transmitter and receiver are maintenance-free except for the transmitter battery.

## Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

## Product documentation

Topic	Title	Document ID:
Operating	Operating instructions	A6V101035988
Installation	Mounting instructions	A6V10974421
CE declaration		A6V101123354

Related documents such as CE declarations, etc., can be downloaded from the following address: <http://siemens.com/bt/download>.

## Technical data

Power supply	
Operating voltage	DC 3 V (2 x 1.5 V AA alkaline batteries)
Battery life	>1 year (with AA alkaline batteries)

Sensor inputs	
Internal thermistor	10 k $\Omega$ $\pm$ 1% at 25 °C

Radio frequency	
Frequency band	ISM 433MHZ
Maximum radio-frequency power	4.19 dBm

Operational data	
TPI control:	
Minimum period	12 min
Minimum pulse length	4 min
Setpoint setting range	5...30 °C
Factory setting comfort setpoint	20 °C

Environmental conditions	
Resolution of settings and displays	
Setpoints	0.5 °C
Actual value displays	0.5 °C
Operation	IEC 60721-3-3
Climatic conditions	Class 3K5
Temperature	0...+40 °C
Humidity	<90% r.h.
Transport	IEC 60721-3-2
Climatic conditions	Class 2K3
Temperature	-25...+60 °C
Humidity	<95% r.h.
Mechanical conditions	Class 2M2
Storage	IEC 60721-3-1
Climatic conditions	Class 1K3
Temperature	-10...+60 °C
Humidity	<90% r.h.

Standards, directives and approvals	
EU conformity (CE)	A6V101123354 *)
RCM conformity to EMC emission standard	A6V101123355 *)
Safety class	III as per EN 60950-1
Pollution degree	2
Degree of protection of housing	IP20
Eco design and labeling directives	Based on EU Regulation 813/2013 (Eco design directive) and 811/2013 (Labeling directive) concerning space heaters, the following classes apply: TPI (PWM) room thermostat, for use with On/Off output heaters Class IV Value 2%
Environmental compatibility	The product environmental declaration (A6V101123358 *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

\*) The documents can be downloaded from: <http://siemens.com/bt/download>.

General	
Weight (including package)	
RDH100RF/SE	475 g
Color of housing front	Signal-white RAL9003
Housing material	ABS (LCD lens:PC)

## Receiver RCR100/433

General unit data	
Operating voltage	AC 230 V +10/-15%
Power	<10 VA
Frequency	50...60 Hz

Outputs	
Switching capacity of relays	
Voltage	AC 24...250 V
Current	8 (3) A

Switching outputs (LX, L1, L2)		
Relay contacts	Switching voltage	Max. AC 250 V; Min. AC 24 V
	Switching current	Max. 8 A res., 3 A ind.
	At AC 250 V	Min. 200 mA
Contact life at AC 250 V	At 5 A res.	1 x 10 <sup>5</sup> cycles (guide value)
Insulating strength	Between relay contacts and coil	AC 5,000 V
	Between relay contacts (same pole)	AC 1,000 V

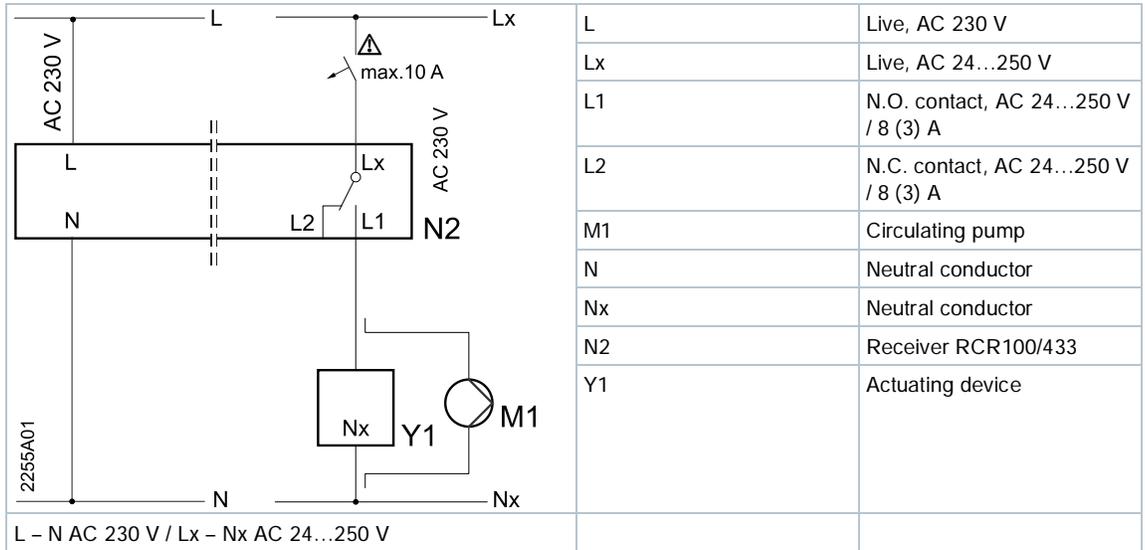
Electrical connections	
Connections terminals (via baseplate) For solid wires For stranded wires	Screw terminals 2 x 1.5 mm <sup>2</sup> 1 x 2.5 mm <sup>2</sup> (min. 0.5 mm <sup>2</sup> )

Environmental conditions	
Operation	IEC 60 721-3
Climatic conditions	Class 3K3
Temperature	0...+45 °C
Humidity	<85% r.h.
Storage and transport	IEC 60 721-3
Climatic conditions	Class 2K3
Temperature	-25...+70 °C
Humidity	<93% r.h.
Mechanical conditions	Class 2M2

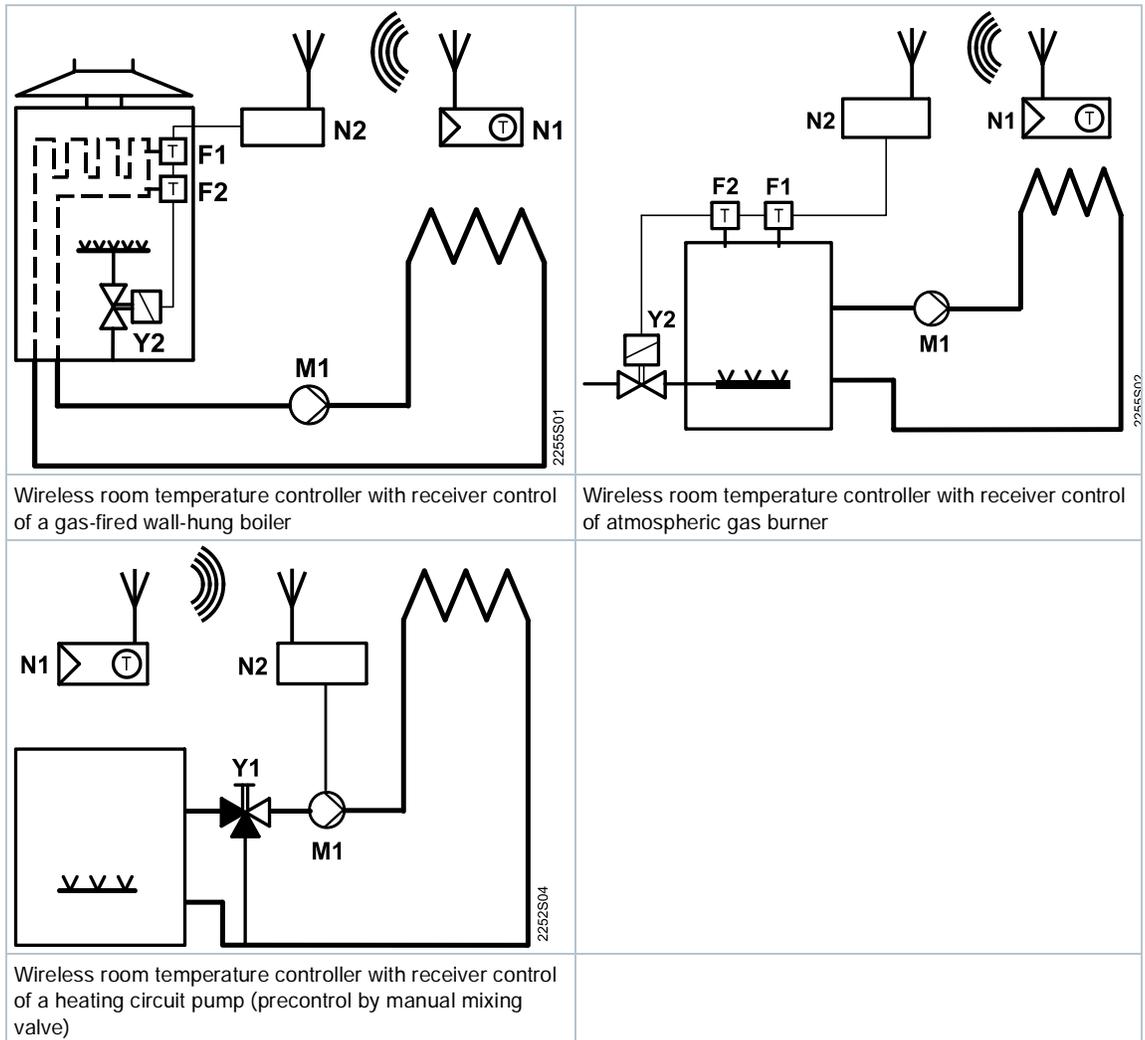
Standards, directives and approvals	
EU conformity (CE)	A6V101123354
Safety class	II as per EN 60 730-1
Degree of pollution	2

Color	
Unit front	Signal-white RAL 9003
Base	Gray RAL 7035
Dimensions	83x104x32 mm

## Connection diagram



## Application examples

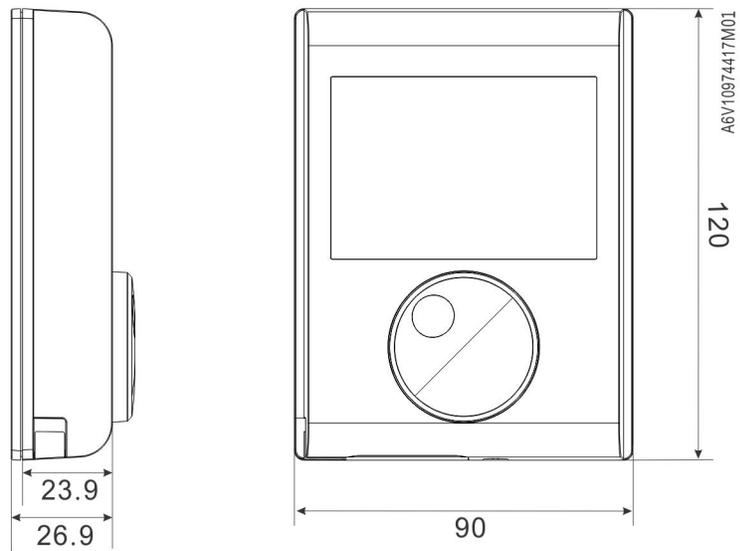


F1	Thermal reset limit thermostat	N1	Room temperature controller RDH100RF (Transmitter)
F2	Safety limit thermostat	N2	RCR100/433 (Receiver)
M1	Circulating pump	Y1	3-port valve with manual adjustment
Y2	Magnetic valve		

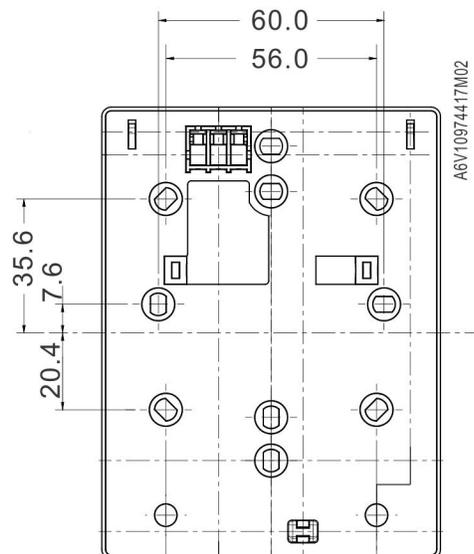
## Dimensions

[mm]

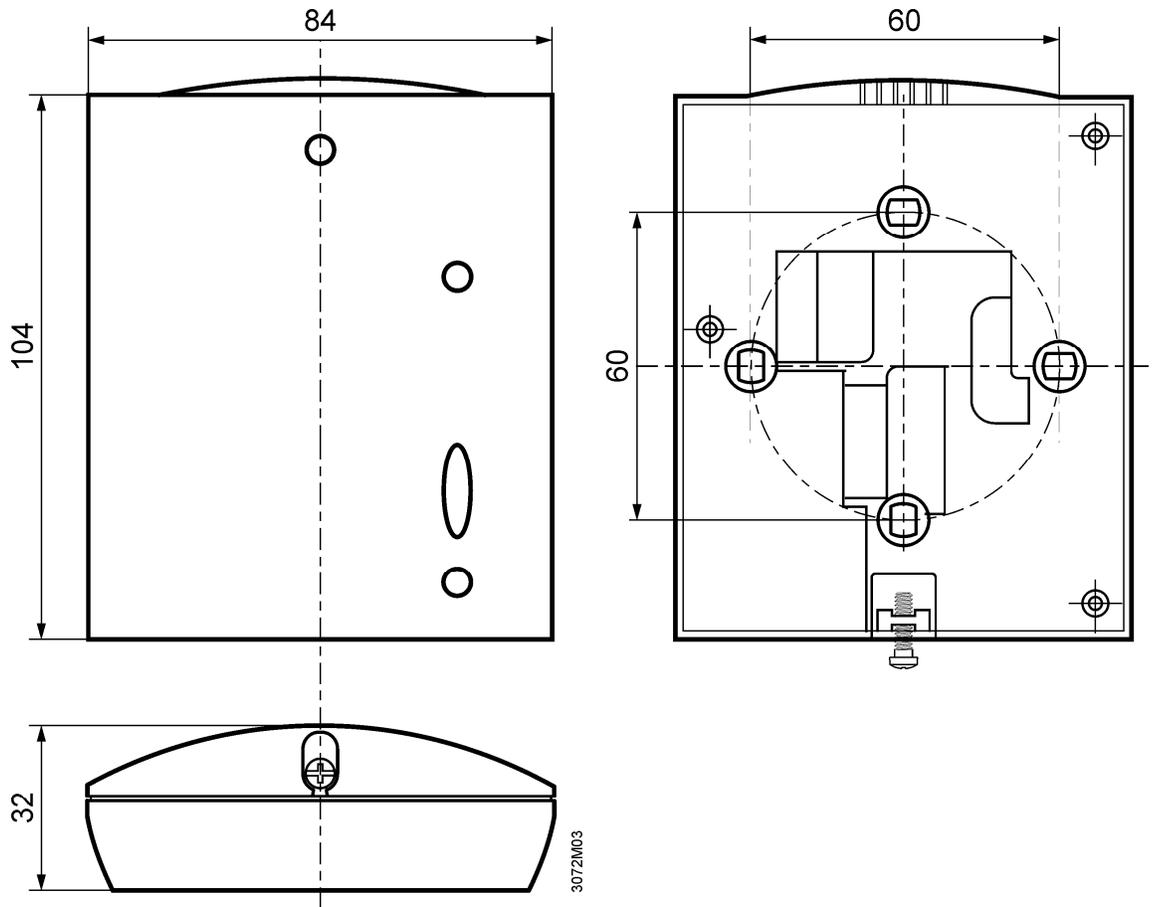
### Room temperature controller



### Room temperature controller mounting plate



Room temperature receiver with mounting plate



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