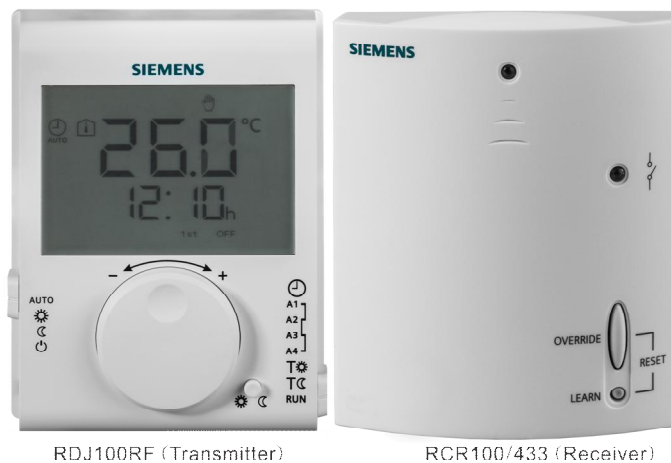# SIEMENS

Wireless room temperature controller with 24-hour time switch and LCD

RDJ100RF/SET

RDJ100RF (Transmitter)   RCR100/433 (Receiver)

Programmable, for heating (or cooling) systems

- Operating modes: Automatic, Comfort, Energy Saving, and Frost Protection
- Large LCD display
- RDJ100RF, transmitter, battery powered
- RCR100/433, receiver, mains powered
- Communication of the set is bonded ex factory
- Two-position controller with TPI (PID) response

Use

The RDJ100RF/SET comprises with 1 x RDJ100RF (transmitter) and RCR100/433 (receiver), is used to control the room temperature in heating (or cooling) systems.

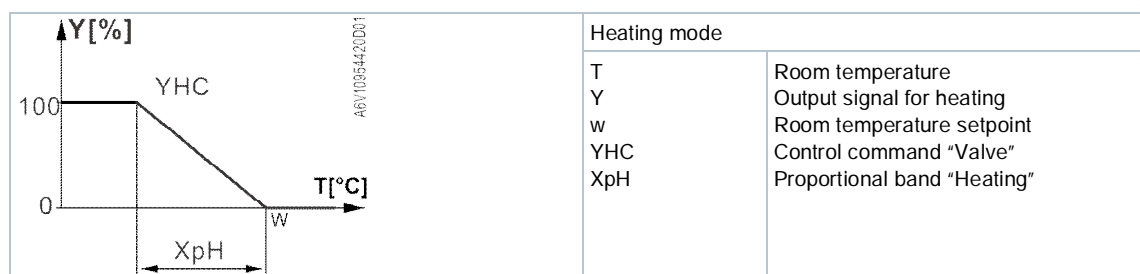Typical applications include:

- Homes
- Residential buildings
- Schools
- Offices

The RDJ100RF/SET can be used together with the following equipment:

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

Functions

Function diagram

	Heating mode	
	T	Room temperature
	Y	Output signal for heating
	w	Room temperature setpoint
	YHC	Control command "Valve"
	XpH	Proportional band "Heating"

Temperature sensor

The RDJ100RF/SET provides TPI (PID) control of the room temperature only.

Operating modes

The RDJ100RF/SET has the following modes: Automatic, Comfort, Energy saving and Frost protection.

Move the operating mode slider to the respective position to changeover between the operating modes.

Automatic mode	Automatic mode is active when the symbol ⊕ AUTO appears on the display. The RDJ100RF operates per the selected 24-hour time program.
Comfort mode	Comfort mode is active when the symbol appears ☀ on the display. The RDJ100RF controls to the temperature setpoint adjusted at T☀. This setpoint can be adjusted by setting the programming slider to T☀.
Energy saving mode	Energy saving mode is active when the symbol ☾ appears on the display. The RDJ100RF controls to the temperature setpoint adjusted at T☾. This setpoint can be readjusted by setting the programming slider to T☾.
Frost protection	Frost protection is active when the symbol ⊙ appears on the display. The RDJ100RF

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	controls to the fixed temperature setpoint for frost protection.

Display

The digital display shows the actual room temperature, the ON / OFF times and the symbol of the operating mode which is currently active. When the heating output is active, the triangle symbol appears.
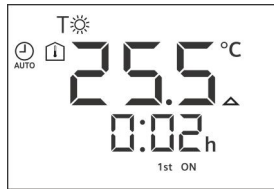
Backup

When taking out the batteries, the setpoints and the information required for operating mode changeover are retained for maximum 2 minutes.

Equipment combinations

Description		Product number	Data sheet *)
Electromotoric actuator		SFA21..	4863
Electrothermal actuator (for radiator valves)		STA23..	4884
Electrothermal actuator (for small valves 2.5mm)		STP23..	4884
Ball valve actuator		GDB..	N6150
Ball valve actuator		GSD..	N4655
Ball valve actuator		GQD..	N4659
Rotary damper actuator		GXD	4622

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

Ordering

When ordering, please give name and product number. Room temperature controller RDJ100RF/SET.

Valves and actuators are to be ordered as separated items.

Mechanical design

The transmitter consists of 4 parts:

- Plastic housing with digital display accommodating 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.
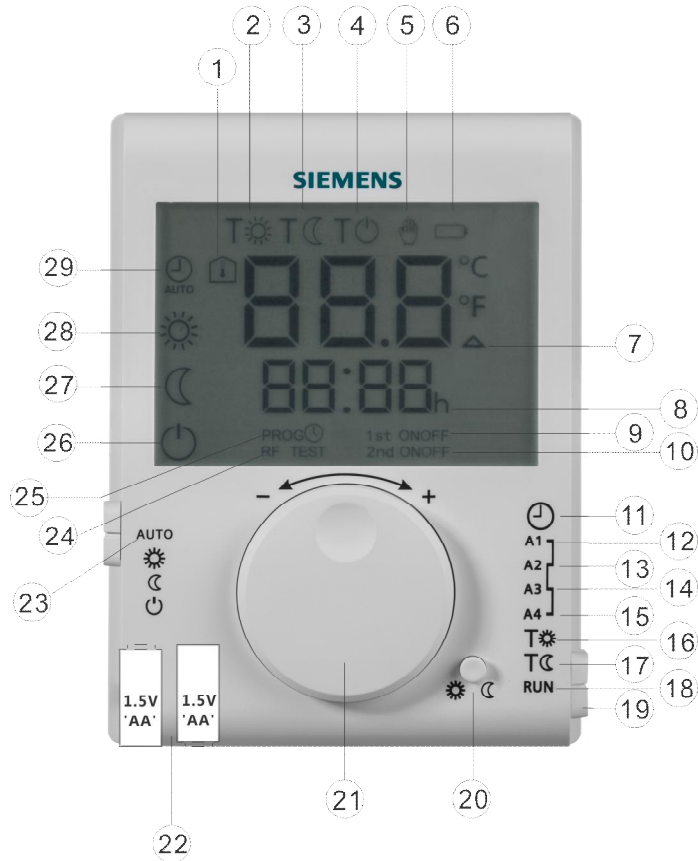
RDJ100RF (Transmitter) Elements	Functions
1	⬆️ Room temperature display in °C
2	T☀ The transmitter controls over the adjusted comfort temperature setpoint
3	T☾ The transmitter controls over the adjusted energy saving temperature setpoint
4	T⏻ The transmitter controls over the fixed frost protection temperature setpoint
5	✋ Setpoint is temporarily overridden until the next switching time
6	🔋 Indicates low battery power; replace batteries
7	△ Indicates a heat request
8	Time of day (00:00...23:59 format)
9	Indicates first switch ON / OFF time
10	Indicates second switch ON / OFF time
11	Time setting position

12	First switch ON time
13	First switch OFF time
14	Second switch ON time
15	Second switch OFF time
16	Comfort temperature setting
17	Energy saving temperature setting
18	RUN position
19	Programming slider
20	Advance button (override / presence button)
21	Temperature setting knob
22	Battery compartment
23	Operating mode slider
24	**RF TEST** indicates RF signal test
25	Indicates that programming is taking place
26	⏻ Frost protection; the transmitter's control to a fixed temperature setpoint of 5 °C for frost protection
27	☾ Energy saving mode; the transmitter's continuous control to the energy saving temperature setpoint
28	☀ Comfort mode; the transmitter's continuous control to the comfort temperature setpoint
29	🕐 AUTO Automatic mode; the transmitter operates per the selected time & temperature program

The receiver is located in a plastic housing with LEDs and buttons.
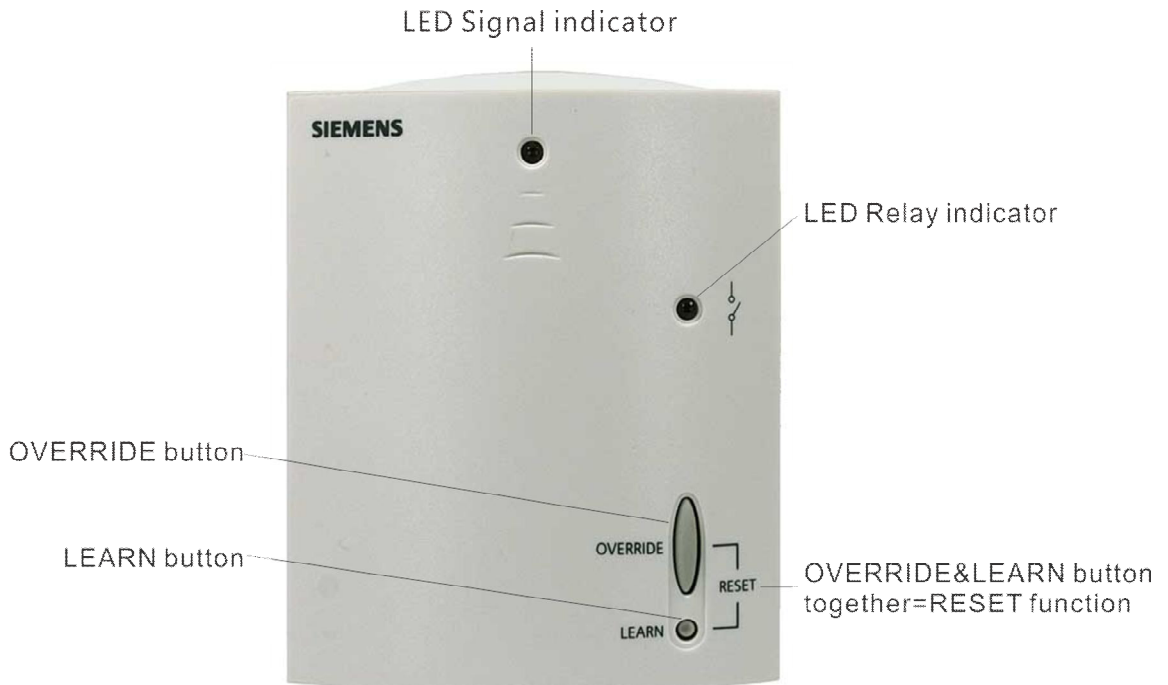
The transmitter is located in a plastic housing. Two buttons are visible on the rear side when removing the baseplate.

Test button — TEST RESET

Learn button — LEARN

Test&Learn button together=RESET function
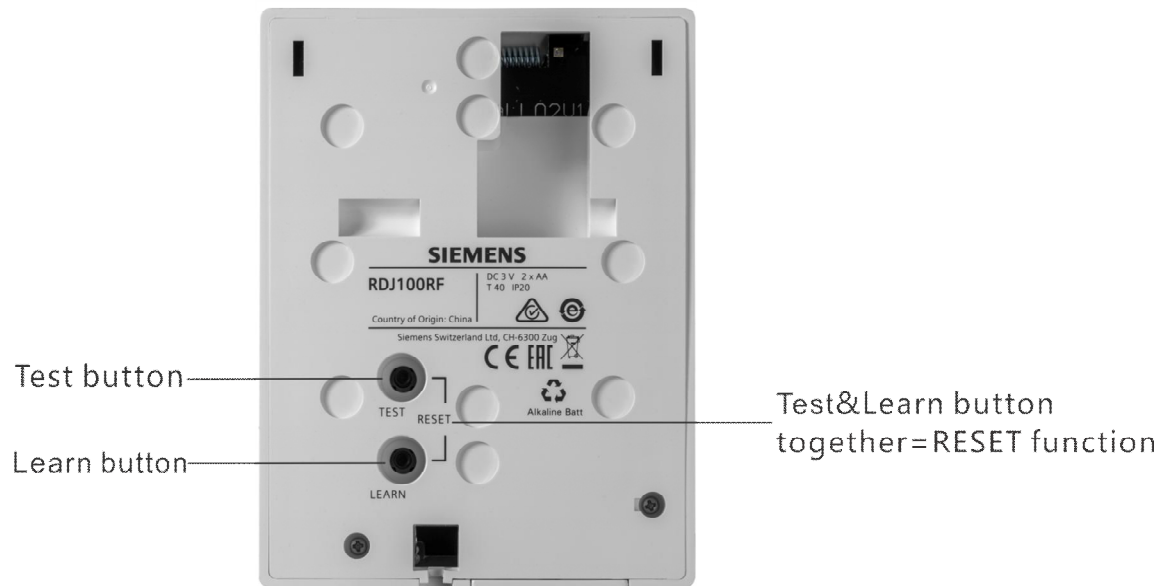
OVERRIDE

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

Example A: normal connection between sender and recipient

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 recipient

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

RF LED

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

| 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

Notes

Mounting

When mounting the transmitter, fix the baseplate first. You need to mount the transmitter on a flat wall. (For more details refer to the separated mounting instructions A6V10974424.)

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

Mounting the receiver doesn't require a baseplate. Connect the electrical connections first and then fit and secure the receiver in compliance with local regulations. (For more details refer to the separated mounting instructions A6V10974424.)

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

For commissioning, refer to the Operating instructions A6V101035990.
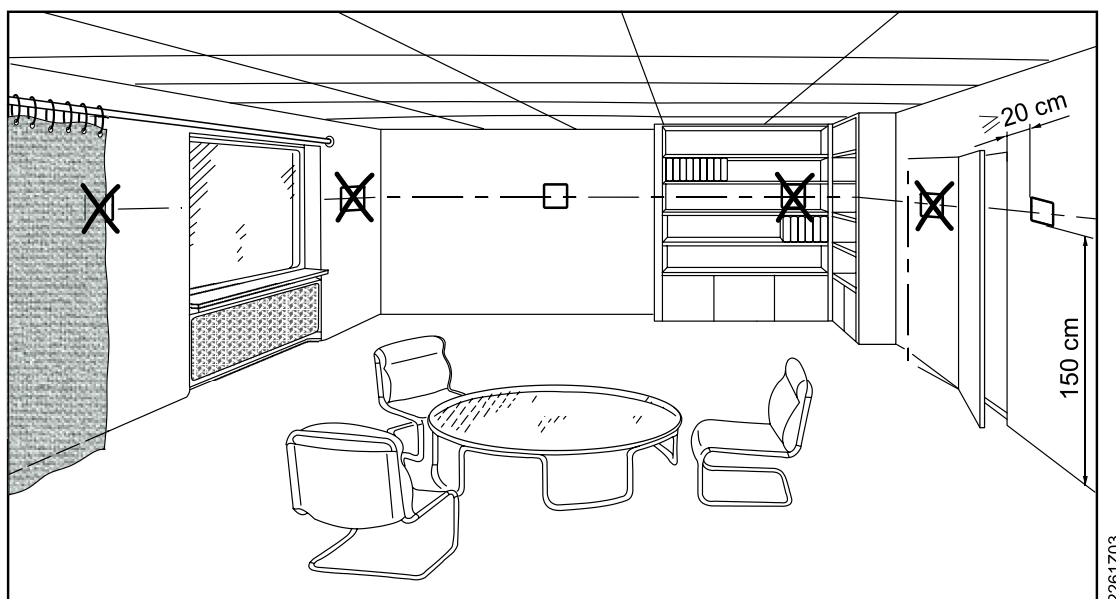
- The devices are suitable for wall mounting.
- Recommended height: 1.5 m above the floor.
- Do not mount the devices in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Avoid direct solar radiation and drafts.
- Seal the conduit box or the installation tube if any, as air currents can affect sensor readings.
- Adhere to allowed ambient conditions.

Change of batteries

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

Reset

Simultaneously press the TEST and LEARN buttons on the rear side of the transmitter to reset it (reset function).

Simultaneously press the OVERRIDE and LEARN buttons to reset the receiver (reset function).

All individual settings are reset to the default values.

Maintenance

The transmitter and receiver are maintenance-free except for the transmitter's 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	A6V101035990
Installation	Mounting instructions	A6V10974424
CE declaration		
Product environmental declaration		

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at 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)

Operational data		
Thermistor	10 kΩ ± 1% at 25 °C	
Minimum Period Time	12 min	
Minimum pulse length	4 min	
Setpoint setting range	5…30 °C (Comfort mode)	
	5…30 °C (Energy saving mode)	
	5 °C (Frost Protection, fixed value)	
Factory setting comfort setpoint	20 °C	
Factory setting for energy saving mode	10 °C	
Resolution of settings and displays	Setpoints	0.5 °C
	Actual value displays	0.5 °C
	Display of time of day	1 min

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Environmental conditions	
Operation Climatic conditions Temperature Humidity	IEC 60721-3-3 Class 3K5 0…+40 °C <90% r.h.
Transport Climatic conditions Temperature Humidity Mechanical conditions	IEC 60721-3-2 Class 2K3 -25…+60 °C <95% r.h. Class 2M2
Storage Climatic conditions Temperature Humidity	IEC 60721-3-1 Class 1K3 -10…+60 °C <90% r.h.

Standards, directives and approvals	
EU conformity (CE)	
RCM conformity to EMC emission standard	
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: PWM (TPI) room thermostat, for use with On/Off output heaters Class IV Value 2%

General	
Weight (including package) RDJ100RF/SET	
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 Current	AC24…250 V 8 (3) A

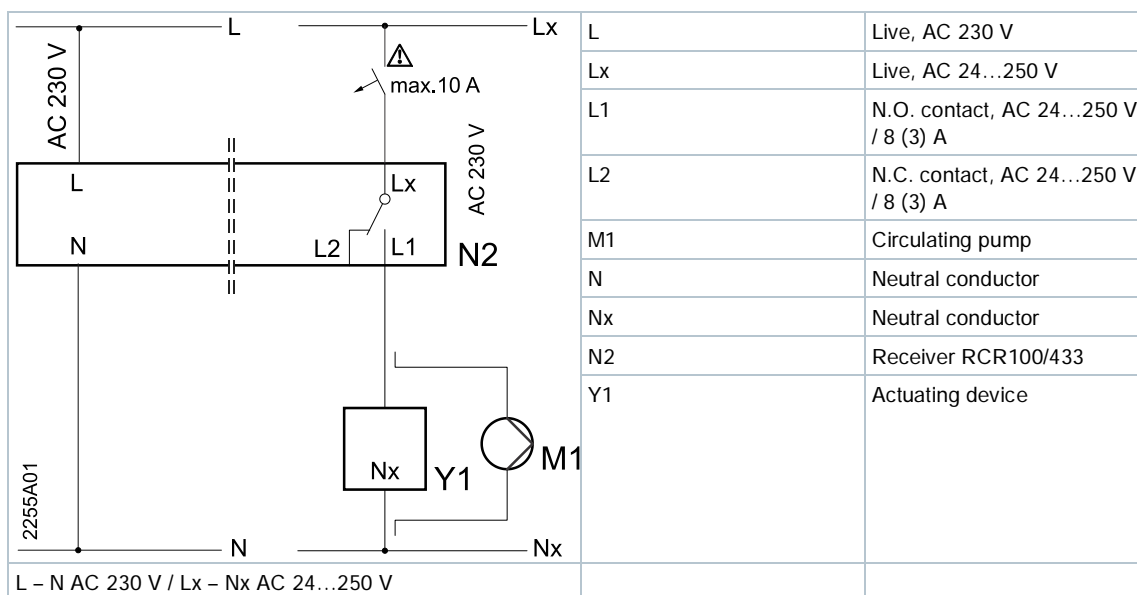| Switching outputs (LX, L1, L2)		
Relay contacts	Switching voltage	Max. AC 250 V; Min. AC 24 V
	Switching current	Max. 8 A res., 3 A ind.
	At AC 250 V	Min. 200 mA
Contact life at AC 250 V	At 5 A res.	1×10^5 cycles (Guide value)
Insulating strength	Between relay contacts and coil	AC 5,000 V
	Between relay contacts (same pole)	AC 2,500 V

Electrical connections	
Connections terminals (via baseplate) For solid wires For stranded wires	Screw terminals 2×1.5 mm^2 1×2.5 mm^2(min. 0.5 mm^2)

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

Standards, directives and approvals	
EU conformity (CE)	
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

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Connection diagram

L	Live, AC 230 V
Lx	Live, AC 24…250 V
L1	N.O. contact, AC 24…250 V / 8 (3) A
L2	N.C. contact, AC 24…250 V / 8 (3) A
M1	Circulating pump
N	Neutral conductor
Nx	Neutral conductor
N2	Receiver RCR100/433
Y1	Actuating device

L – N AC 230 V / Lx – Nx AC 24…250 V

Application examples

Wireless room temperature controller with receiver control of a gas-fired wall-hung boiler

Wireless room temperature controller with receiver control of atmospheric gas burner

Wireless room temperature controller with receiver control of a heating circuit pump (pre-control by manual mixing

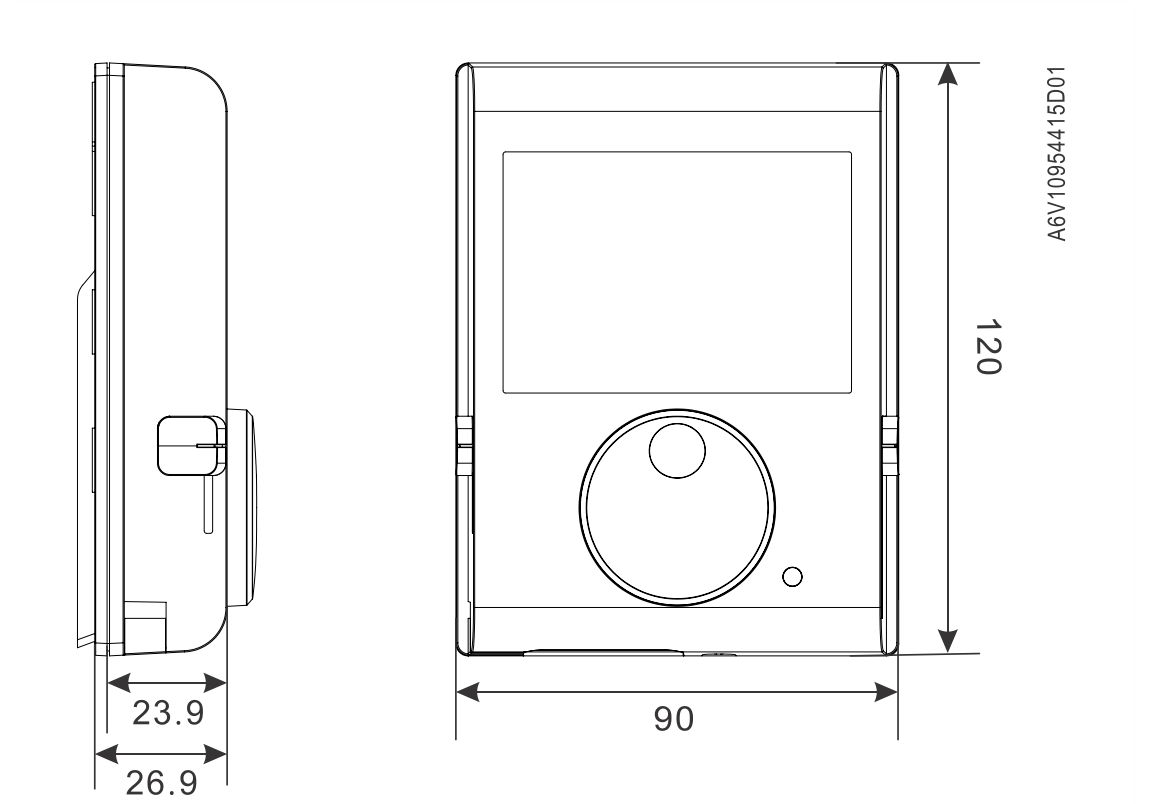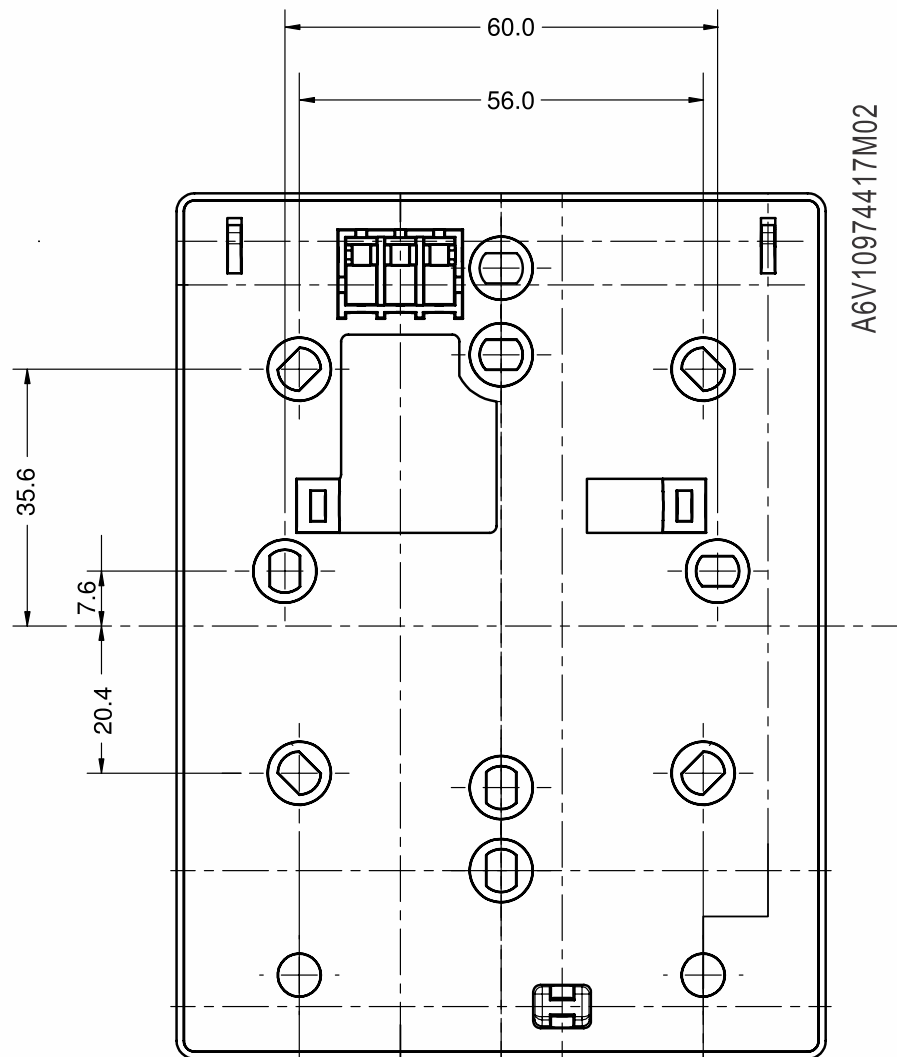|			
valve)			
F1	Thermal reset limit thermostat	N1	Room temperature controller RDJ100RF (Transmitter)
F2	Safety limit thermostat		
M1	Circulating pump	N2	RCR100/433 (Receiver)
		Y1	3-port valve with manual adjustment
		Y2	Magnetic valve

Dimensions

[mm]

Room temperature controller

23.9

26.9

120

90

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60.0

56.0

35.6

7.6

20.4

Room temperature reveiver with mounting plate

84

60

104

60

60

32

3072M03

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Edition   2017-01-01