SIEMENS

Room thermostat with 24-hour time switch and large LCD
RDJ100

Programmable, for heating systems

- Operating modes: Automatic, Comfort, Energy saving, and Frost protection
- Large LCD display
- Battery powered: 2 x alkaline type AA batteries, 1.5 V
- TPI control for use with ON/OFF heating systems

The device is used to control the room temperature in heating systems.

Typical applications:

- Homes
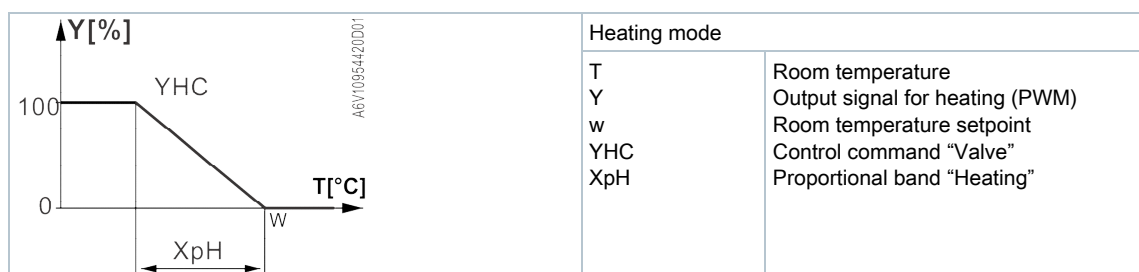- Residential buildings
- Schools
- Offices

The device is 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.

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

Backup

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

Operating modes

The device has the following modes: Automatic, Comfort, Energy saving and Frost protection.

Move the operating mode slider to the respective position to select another operating mode.

Automatic mode	Automatic mode is active when symbol ⏱ AUTO is displayed. The device operates as the selected 24-hour time program.
Comfort mode	Comfort mode is active when symbol ☼ is displayed. The device controls to the temperature setpoint adjusted at T☼. This setpoint can be adjusted by setting the program slider to T☼.
Energy saving mode	Energy saving mode is active when symbol ☾ is displayed. The device controls to the temperature setpoint adjusted at T☾. This setpoint can be readjusted by setting the program slider to T☾.
Frost protection	Frost protection is active when symbol ⏻ is displayed. The device controls to the preset temperature setpoint for frost protection.

Display

The digital display shows the current room temperature, the ON/OFF times as well as the symbol for the currently active operating mode which is currently active. When the heating output is active, the triangle symbol is displayed.

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.

Ordering

When ordering, specify both name and product number e.g. room temperature controller RDJ100.
Order valves and actuators as separate items.

Mechanical design

The device consists of 3 parts:
- Plastic housing with digital display containing the electronics, operating elements, and built-in room temperature sensor
- Baseplate (mounting base)
- Battery compartment

The housing engages in the baseplate and snaps on. The baseplate carries the screw terminals. There is a reset button on the rear of the device.
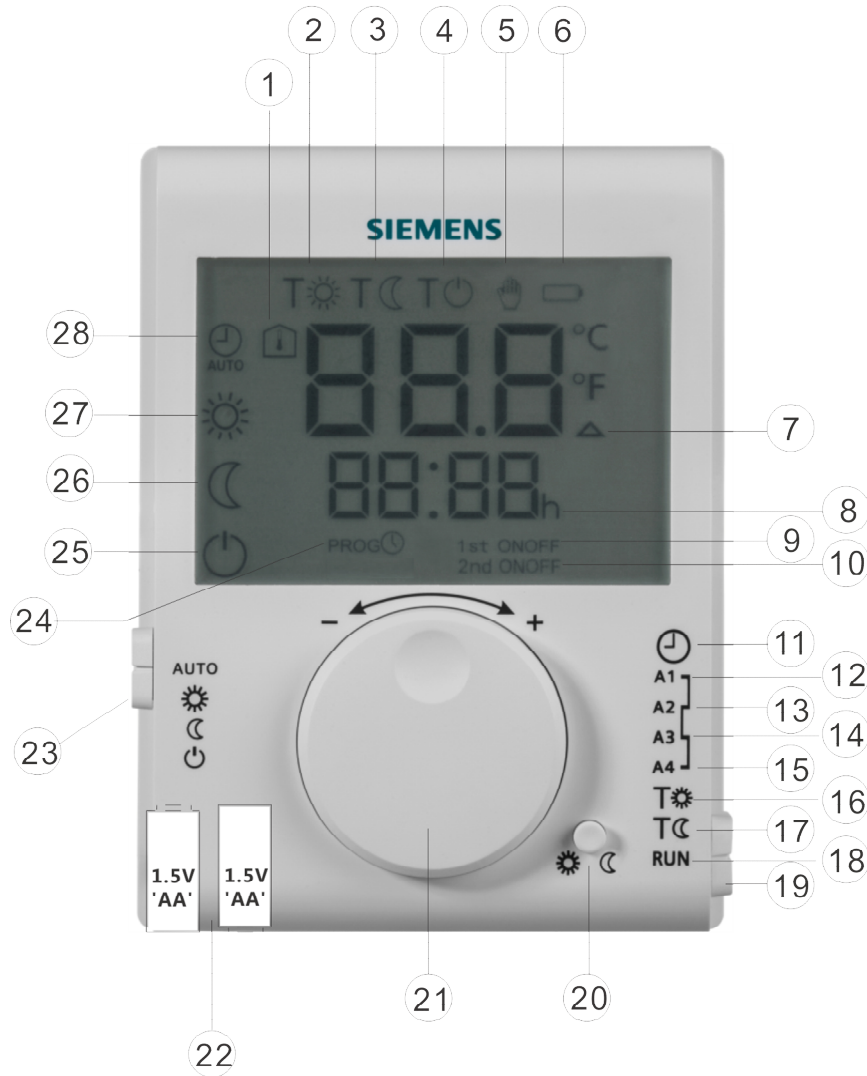
RDJ100 Elements	Functions
1	🌡 Room temperature display in °C
2	T☀ The device controls to the adjusted comfort temperature setpoint
3	T☾ The device controls to the adjusted energy saving temperature setpoint
4	T⏻ The device controls to the preset frost protection temperature setpoint
5	✋ Setpoint temporarily 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

RDJ100 Elements	Functions
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	Program slider
20	Advance button (override / presence button)
21	Temperature setting knob
22	Battery compartment
23	Operating mode slider
24	Indicates that programming is taking place
25	⏻ Frost protection; control to a preset temperature setpoint of 5 °C for frost protection
26	☾ Energy saving mode; continuous control to the energy saving temperature setpoint
27	☼ Comfort mode; continuous control to the comfort temperature setpoint
28	⏲ AUTO Automatic mode; the device operates as per the selected program

Product documentation

Topic	Title	Document ID:
Operating	Operating instructions	A6V101035986
Installation	Mounting instructions	A6V10974419
CE declaration		A6V101123354

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

Notes

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.

Mounting

When mounting the device, attach the baseplate first. Then make the electrical connections, and fit and secure the device (refer to the separate mounting instructions A6V10974419). Mount the device on a flat wall and in compliance with local regulations.

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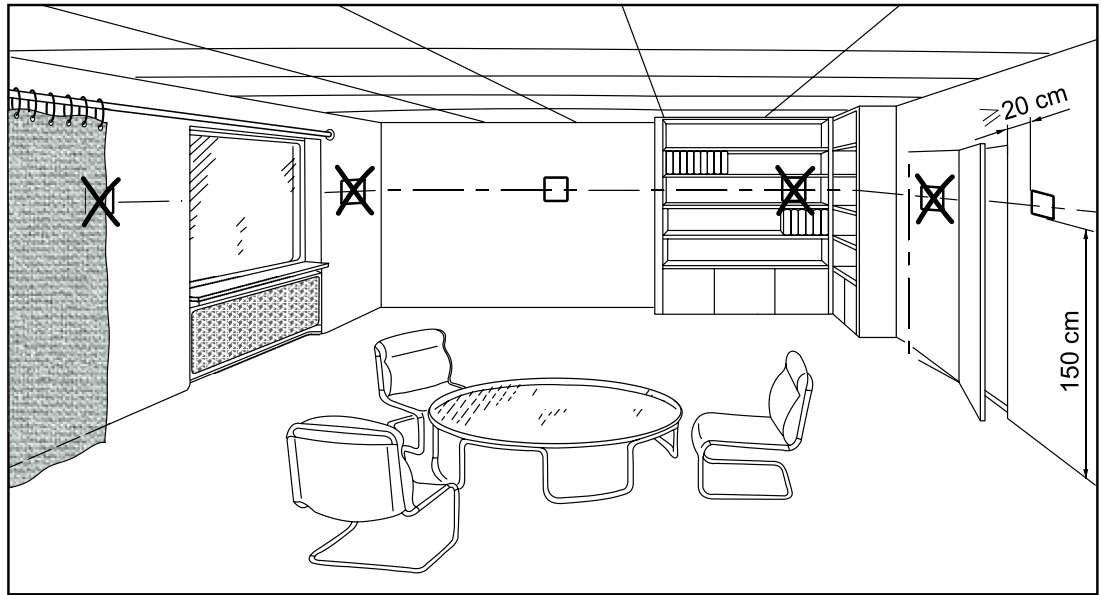
- The devices are suitable for wall mounting.
- Recommended height: 1.5 m above the floor.
- Do not mount the devices in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Avoid direct solar radiation and drafts.
- Seal the conduit box or the installation tube if any, as air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

Installation

⚡	**⚠ WARNING**
	No internal line protection for supply lines to external consumers.
	Risk of fire and injury due to short-circuits!
	• Adapt the line diameters as per local regulations to the rated value of the installed overcurrent protection device.
	• The power supply lines must have an external circuit breaker with a rated current of max. 10 A.

Change of batteries

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

Reset

To reset, press the reset button on the rear of the device. This resets all individual settings to their default values.

Maintenance

The device is maintenance-free.

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

Internal sensor inputs	
Thermistor	10 kΩ ± 1% at 25 °C

Switching outputs (Lx, L1, L2)		
Relay contacts	Switching voltage	Max. AC 250 V Min. AC 24 V
	Switching current	Max. 5 A res., 2 A ind.
	At AC 250 V	Min. 200 mA
Insulating strength	Between relay contacts and coil	AC 3,750 V
	Between relay contacts (same pole)	AC 1,000 V

⚠ **WARNING**

No internal fuse

External preliminary protection with max. C 10 A circuit breaker in the supply line required under all circumstances.

Operational data	
TPI control: Minimum period Minimum pulse length	 12 min 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 Factory setting for energy saving mode	20 °C 10 °C
Resolution of settings and displays	Temperature setpoint	0.5 °C
	Display of actual temperature value	0.5 °C

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

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.

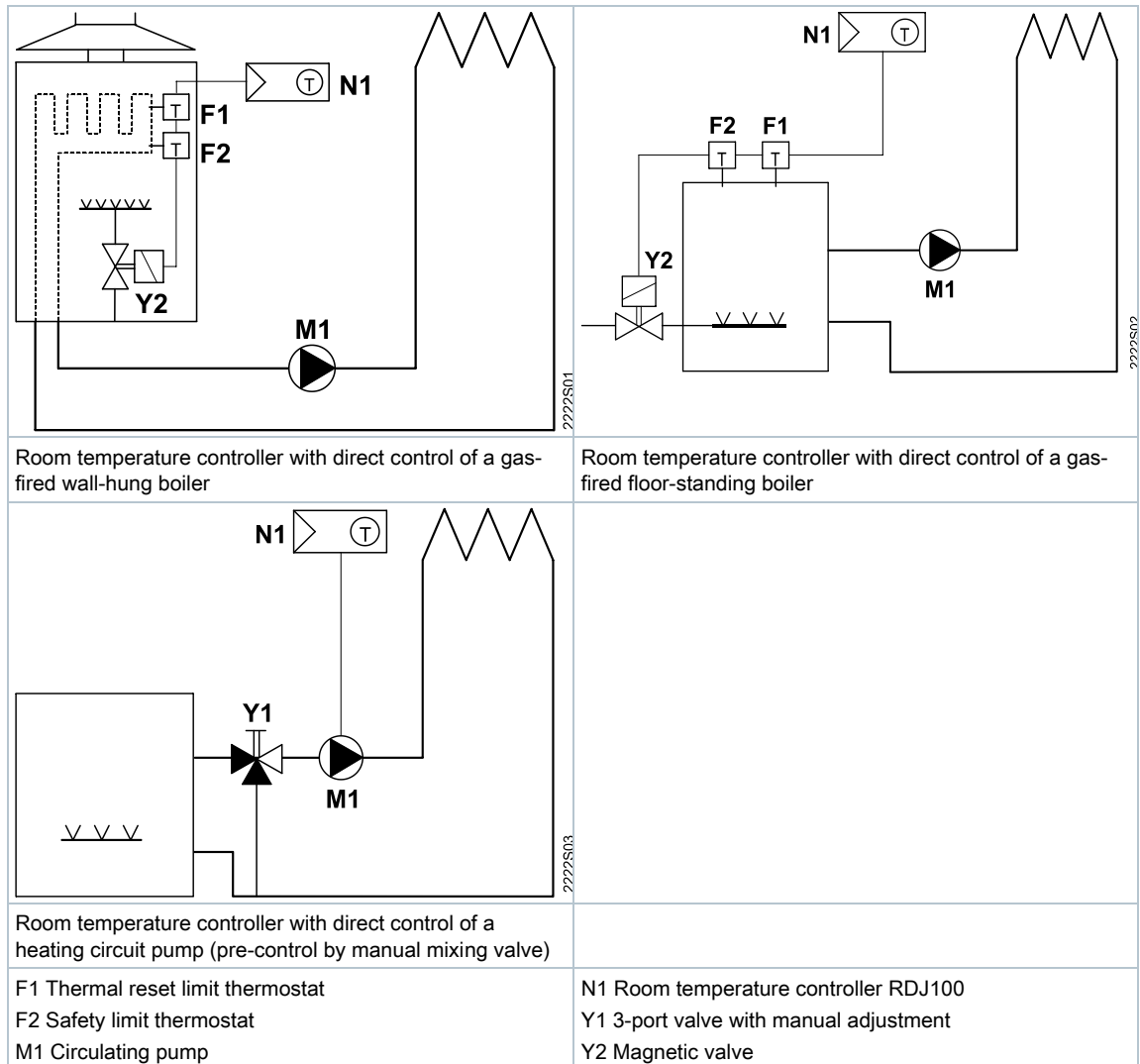| Standards, directives and approvals	
EU conformity (CE)	A6V101123363 *)
RCM conformity	A6V11161600 *)
Safety class	II as per EN 60730-1
Pollution degree	2
Degree of protection of housing	IP20
Eco design and labeling directives	Based on EU Regulation 813/2013 (Eco design directive) and 811/2013 (Labeling 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.

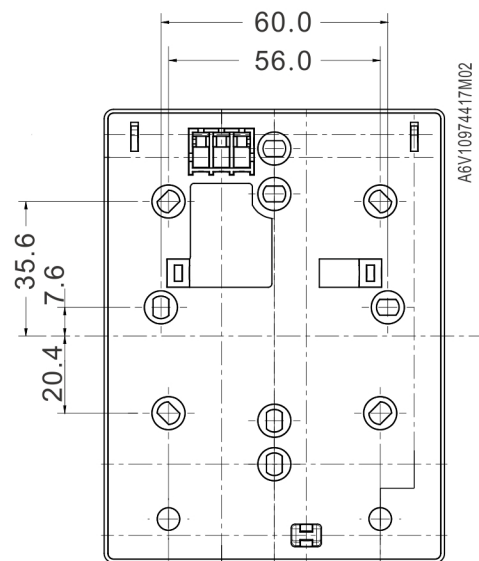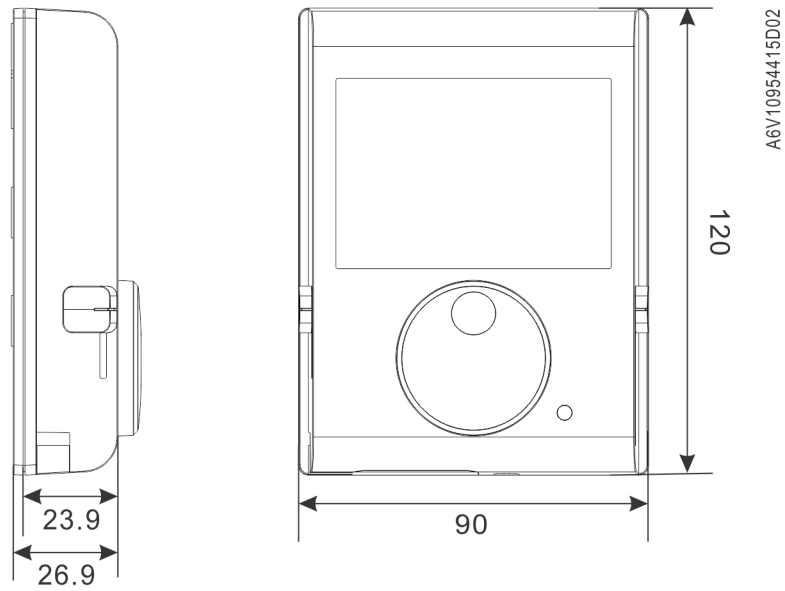| General	
Weight (including package)	350 g
Color of housing front	Signal-white RAL9003
Housing material	ABS (LCD lens:PC)

Connection diagram

A6V10974417M03

Lx, Nx Live, neutral conductor, AC 24…250 V
Lx, L2 N.C. contact (for N.O. valves)
Lx, L1 N.O. contact (for N.C. valves)

Application examples

Room temperature controller with direct control of a gas-fired wall-hung boiler

2222S01

Room temperature controller with direct control of a gas-fired floor-standing boiler

2222S02

Room temperature controller with direct control of a heating circuit pump (pre-control by manual mixing valve)

2222S03

F1 Thermal reset limit thermostat	N1 Room temperature controller RDJ100
F2 Safety limit thermostat	Y1 3-port valve with manual adjustment
M1 Circulating pump	Y2 Magnetic valve

[mm]

A6V10954415D02

120

23.9

26.9

90

60.0

56.0

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35.6

7.6

20.4

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