



Room Temperature Controllers with 7-Day Time Switch and LCD for heating systems

RDE10...

2-position control with ON/OFF output for heating
Operating modes: normal operation and energy saving mode
7-day time switch and manual operation
Mains-powered AC 230 V (RDE10) or battery-powered DC 3 V (RDE10.1)

Use

The RDE10... is used for the control of the room temperature in heating systems.

Typical applications:

- Apartments
- Commercial spaces
- Schools

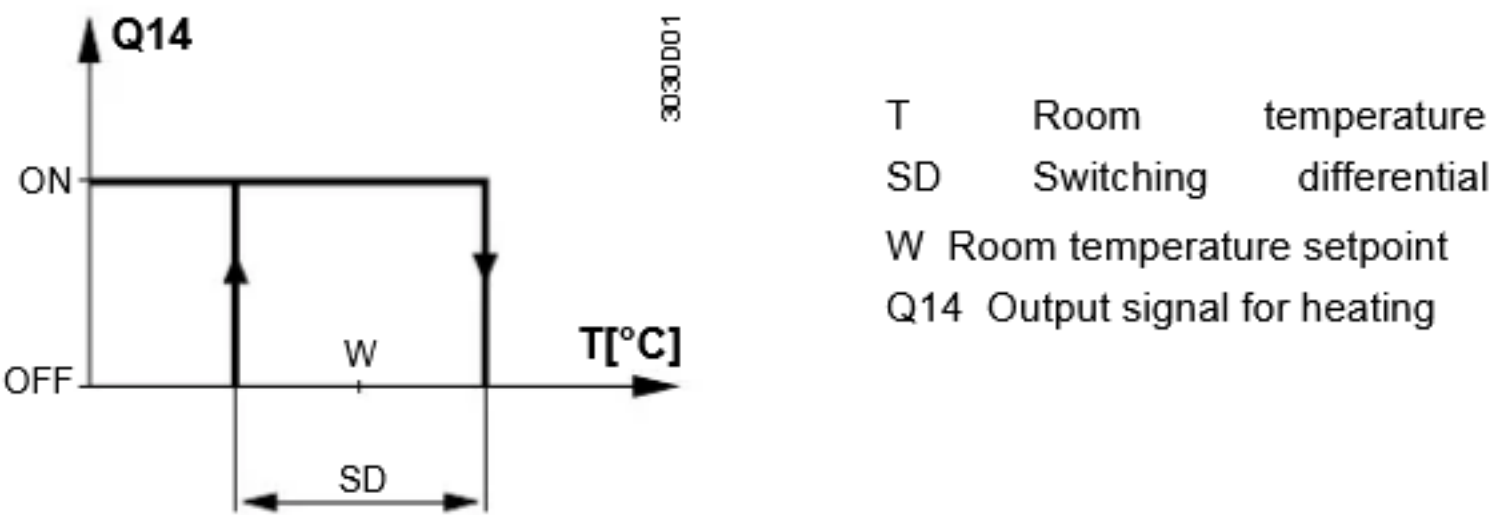
For the control of the following pieces of equipment:

- Thermic valves or zone valves
- Gas or oil burners
- Fans
- Pumps



The controller acquires the room temperature with its integrated sensor and maintains the setpoint by delivering control commands. The switching differential is 1 K.

Function diagram



Operating modes

The RDE10... provides normal operation and, optionally, energy saving mode or OFF. The difference between normal operation and energy saving mode is only the room temperature setpoint. The changeover between the operating modes can be made either automatically according to the 7-day time switch or manually with the operating mode selector.

Normal operation

When normal operation is activated, symbol "☀" appears on the display. The setpoint can be readjusted by pressing buttons , and .

Energy saving mode or OFF

When energy saving mode is activated, symbol "☾" appears on the display. The setpoint can be readjusted by pressing buttons , and .

In energy saving mode, the unit can also be switched to "Off". This is accomplished by selecting a setpoint of 5 °C and then keeping button depressed for 4 seconds. In that case, symbol '☾' does not appear.

7-day time switch

The changeover between the operating modes can take place either automatically () or manually (☀, ☾), depending on the position of the operating mode selector. When the operating mode selector is in position "", changeover will take place automatically according to the selected switching pattern. For every weekday, a specific switching pattern can be selected.

Factory setting:

Day(s)	Normal operation	Energy saving mode
Mo (1) – Fr (5)	6:00 – 8:00 h and 17:00 – 22:00 h	22:00 – 6:00 h and 08:00 – 17:00 h
Sa (6) – Su (7)	7:00 – 22:00 h	22:00 – 7:00 h

The current setpoint can be temporarily readjusted by pressing buttons and . The setpoint will then be reset to its initial value the next time automatic or manual changeover takes place.

When the operating mode selector is set to "☀" or "☾", the RDE10... will maintain normal operation or energy saving mode respectively.

Display

The digital display shows the actual room temperature, the time of day, the weekday, the current switching pattern and the symbol of the operating mode currently active. The switching pattern shows normal operation as a double bar and energy saving mode as a single bar with a flashing time pointer. When the heating output is activated, the triangle symbol appears.



Automatic changeover according to the switching pattern



Normal operation



Energy saving mode

Backup

In the event of a power failure, the setpoints and the information required for operating mode changeover are retained for 3 minutes. This is enough to cope with power failures of short duration (with RDE10) or when changing the batteries (with RDE10.1).

Type summary

Type reference	Features
RDE10	Mains-powered AC 230 V
RDE10.1	Battery-powered DC 3 V

Ordering

When ordering, please give name and type references, e.g. **room temperature controller RDE10**.

Valve actuators are to be ordered as separate items.

Equipment combinations

Type of unit	Type reference	Data sheet
Motoric on/off actuator	SFA21...	4863
Thermal actuator (for radiator valve)	STA21...	4893
Thermal actuator (for small valve 2,5 mm)	STP21...	4878

Accessories

Description	Type reference
Adapter plate 120 x 120 mm for 4" x 4" conduit boxes	ARG70
Adapter plate 96 x 120 mm for 2" x 4" conduit boxes	ARG70.1
Adapter plate for surface wiring 112x130 mm	ARG70.2

The unit consists of two parts:

- A plastic housing with digital display, which accommodates the electronics, the operating elements and the built-in room temperatures sensor
- A mounting base

The housing engages in the mounting base and snaps on.

The base carries the screw terminals.

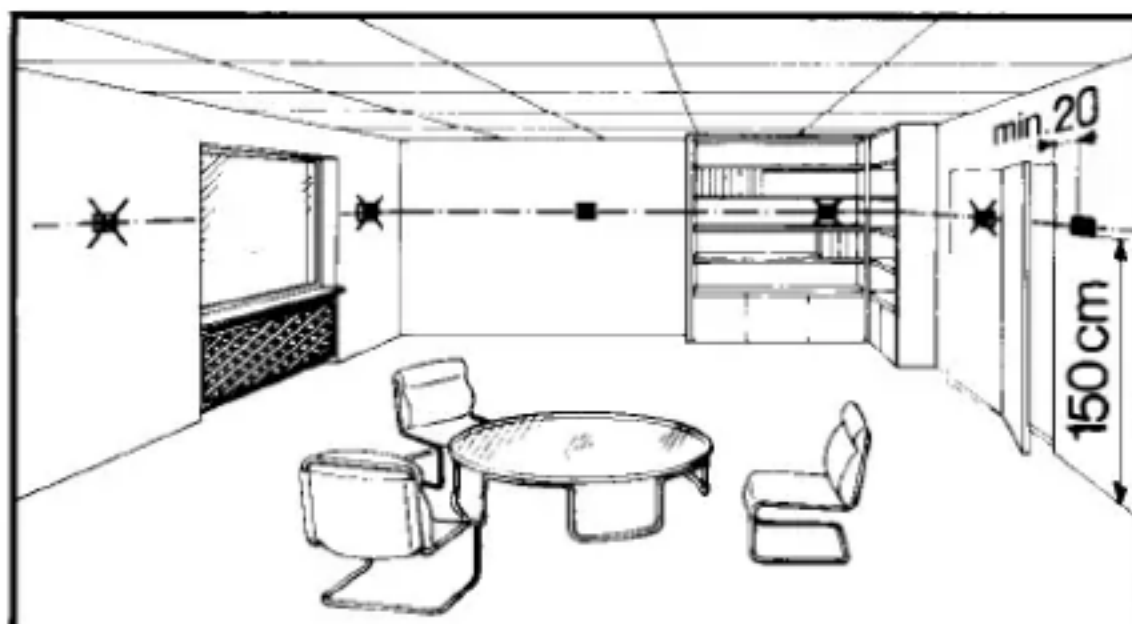


Legend

- 1 Display of the room temperature in °C or setpoints
- 2 Current time of day using the format 00:00 ... 23:59
- 3 Current weekday from 1 (Monday) to 7 (Sunday)
- 4 Current switching pattern with flashing time pointer
- 5 symbol when actual room temperature is displayed
- 6 Normal operation
 Energy saving mode
- 7 symbol in automatic mode or when selecting the switching pattern
- 8 heating on
- 9 symbol indicating that batteries need to be replaced
(only with battery-powered versions)
- 10 Buttons for adjusting the setpoints, the time of day and the switching times
- 11 Operating mode selector
- 12 Setting the weekday
- 13 Setting the time of day
- 14 Selecting and leaving the setting mode for the switching pattern
- 15 Setpoint adjustment for energy saving mode
- 16 Setpoint adjustment for normal operation
- 17 Button for confirming the switching pattern settings
- 18 Battery compartment (only with battery-powered versions)

The room temperature controller should be mounted in a location where the air temperature can be measured as accurately as possible without getting adversely affected by direct solar radiation or other heat or refrigeration sources.

Mounting height is about 1.5 m above the floor.



The unit can be fitted to a recessed conduit box.

- Only authorized staff may open the controller.
Caution: AC 230 V!
- The cables used must satisfy the insulation requirements with regard to mains potential





Mounting, installations and commissioning

When mounting the unit, fix the baseplate first. Then, make the electrical connections and fit and secure the cover (also refer to separate Mounting Instructions). The controller must be mounted on a flat wall and in compliance with local regulations. If there are thermostatic radiator valves in the reference room, they must be set to their fully open position.

Maintenance

The controller is maintenance-free.




Sensor calibration

If the temperature on the display does not agree with the room temperature effectively measured, the temperature sensor can be recalibrated. For that purpose, both buttons  and  must be pressed simultaneously for 3 seconds. Then, the temperature displayed can be changed by a maximum of +/- 3 K by pressing the  and  buttons. Five seconds after the last push of a button, the controller will automatically return to the normal operational statuses.

Change of batteries (only with battery-powered versions)

If the battery symbol appears, the battery power is almost exhausted and the batteries should be replaced.

Reset

To reset, first press and hold the button , then press the two buttons  and  simultaneously for 3 seconds. All individual settings will be reset to their standard values.

Technical data



Power supply

Operating voltage

- RDE10 at L and N
- RDE10.1

AC 230 V +10/-15 %

DC 3 V (2 x 1.5 V AAA Alkaline - batteries)

Frequency (RDE10)

50 or 60 Hz

Power consumption (RDE10)

4VA

Battery life (RDE10.1)

> 1 years (AAA Alkaline - batteries)

Control outputs

Control output Q12 (N.C. contact)

Rating RDE10 (AC 230 V)

max. 5 A

Rating RDE10.1 (AC 24...250 V)

max. 5(2) A

Control output Q14 (N.O. contact)

Rating RDE10 (AC 230 V)

max. 5 A

Rating RDE10.1 (AC 24...250 V)

max. 5(2) A

Functional data

Switching differential SD

1 K

Setpoint setting range

5...35 °C (normal operation)

0 (OFF) and 5...35 °C (energy saving mode)

Factory setting normal operation

20 °C

Factory setting energy saving mode

8 °C

Resolution of settings and displays

Setpoints

0.5 °C

Switching times

60 min

Actual value displays

0.5 °C

Time of day displays

1 min

Environmental conditions

Operation

to IEC 721-3-3

Climatic conditions

class 3K5

Temperature

0...+50 °C

Humidity

<95 % r. h.

Transport

to IEC 721-3-2

Climatic conditions

class 2K3

Temperature

-25...+60 °C

Humidity

<95 % r. h.

Mechanical conditions

class 2M2

Storage

to IEC 721-3-1

Climatic conditions

class 1K3

Temperature

-25...+60 °C

Humidity

<95 % r. h.

Norms and standards

CE conformity to

EMC directive

89/336/EEC

Low voltage directive

73/23/EEC and 93/68/EEC



C-Tick conformity to

EMC emission standard

AS/NSZ 4251.1:1994

Product standards

Automatic electrical controls for
household and similar use

EN 60 730 – 1 and
EN 60 730 – 2 - 9

Electromagnetic compatibility

Emissions

EN 50 081-1

Immunity

EN 50 082-1

Safety class

II to EN 60730

Pollution class

normal

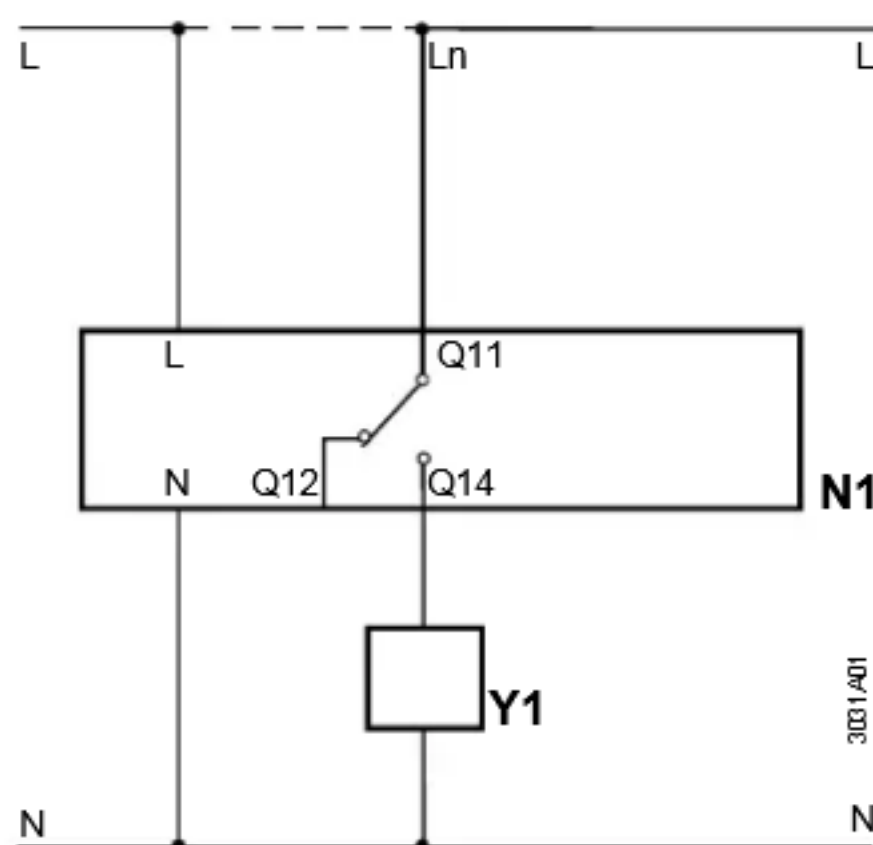
Degree of protection of housing

IP30 to EN 60529



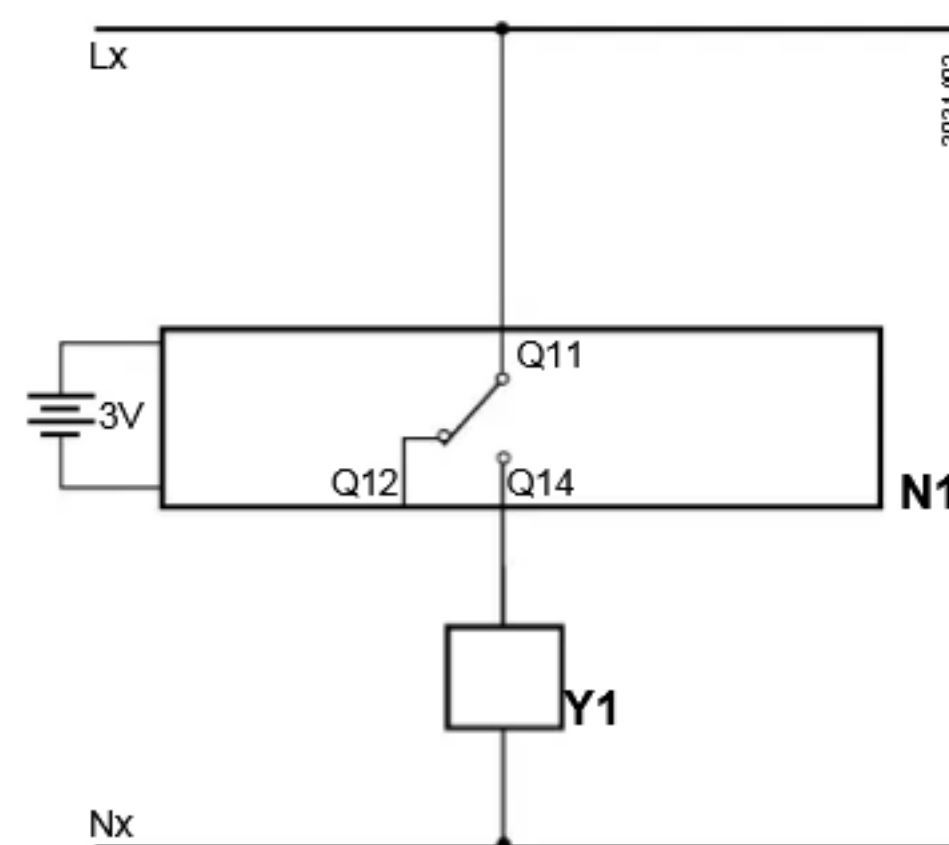
Connection terminals for	Use solid wires or prepared stranded wires. 2 x 1.5 mm ² or 1 x 2.5 mm ² (min. 0.5 mm ²)
Weight	0.21 kg
Colour of housing front	white, NCS S 0502-G (RAL 9003)

Connection diagram



RDE10

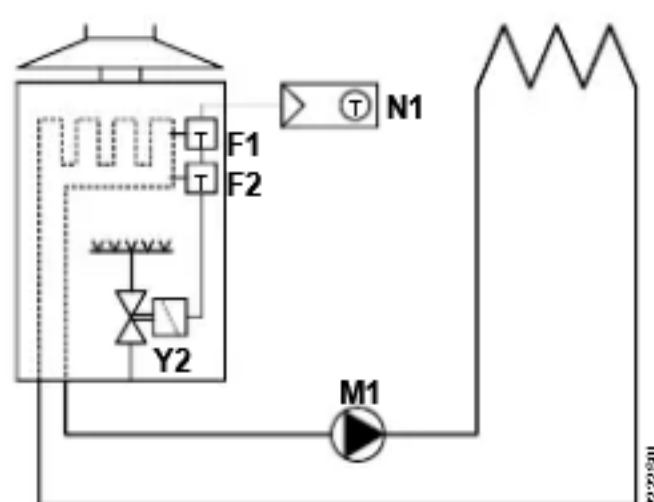
N1 Room temperature controller
Y1 Regulating unit
L, Ln Live, AC 230 V
N Neutral, AC 230 V
Lx Live, AC 24 ... 250 V



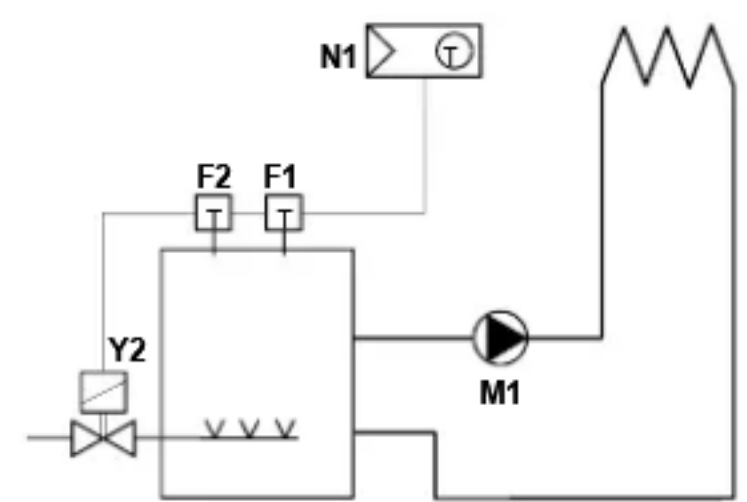
RDE10.1

Q11, Q12 N.C. contact (for N.O. valves)
Q11, Q14 N.O. contact (for N.C. valves)
Nx Neutral, AC 24 ... 250 V

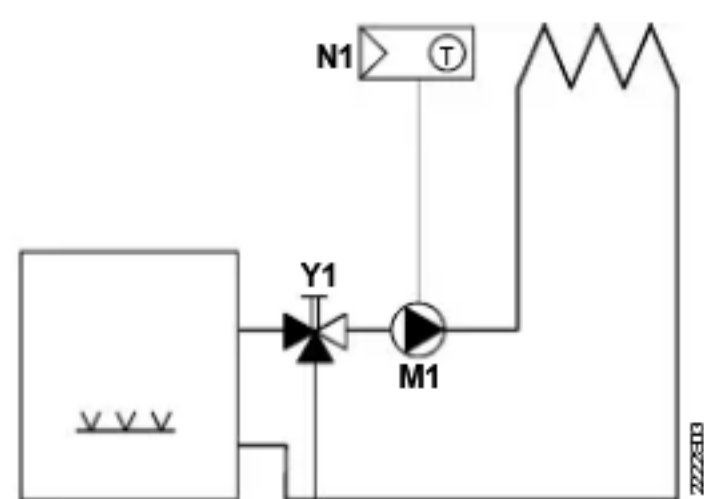
Application examples



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



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



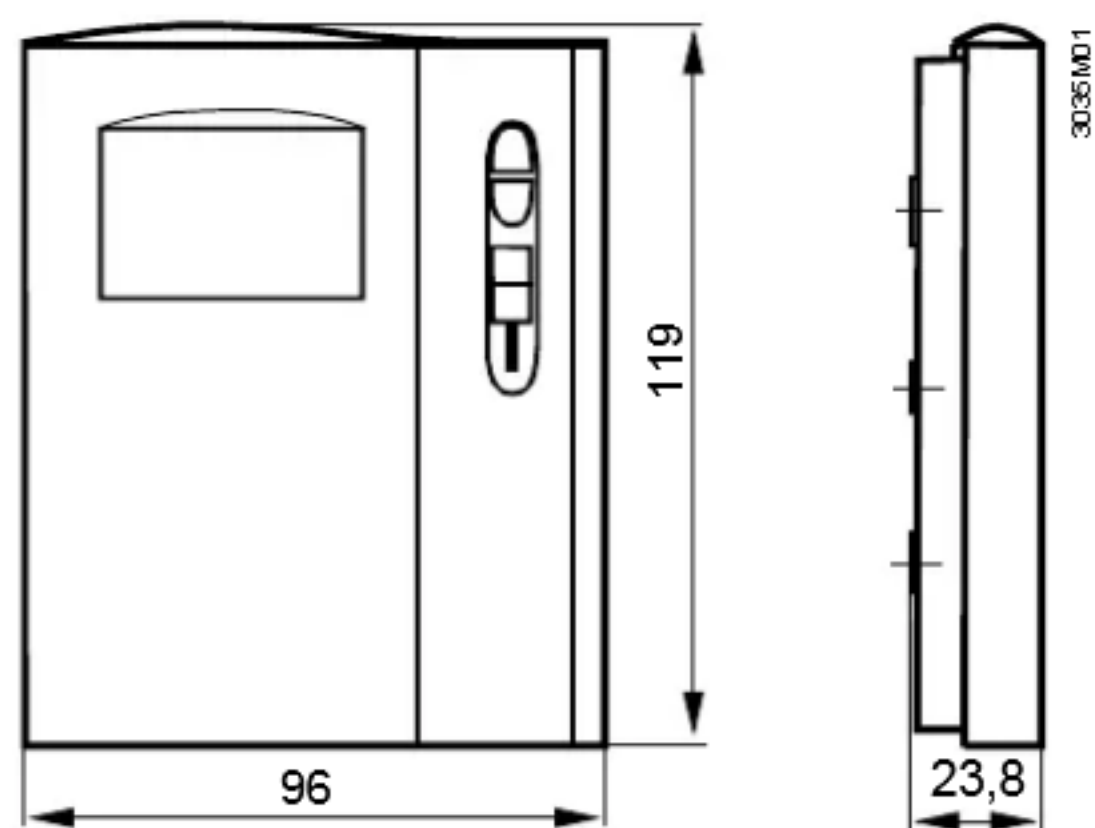
Room temperature controller with direct control of a heating circuit pump (precontrol by manual mixing valve)

F1 Thermal reset limit thermostat
F2 Safety limit thermostat
M1 Circulating pump

N1 RDE10... room temperatures controller
Y1 3-port valve with manual adjustment
Y2 Magnetic valve

Dimensions

Controller



Baseplate

