

Siemens RDE10.1DHW Room Temperature Controller



# Siemens RDE10.1DHW Room Temperature Controller User Manual

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# SIEMENS

Siemens RDE10.1DHW Room Temperature Controller User Manual



- 2-position control with ON / OFF output for heating
- Independent ON / OFF control of DHW
- Operating modes: Auto, normal operation, energy saving and frost protection
- 7-day time switch and manual control
- Battery-powered DC 3 V (2 x 1.5 V AA)

## Use

The RDE10.1DHW is used for the control of the room temperature in heating systems with independent control of DHW.

## Typical applications

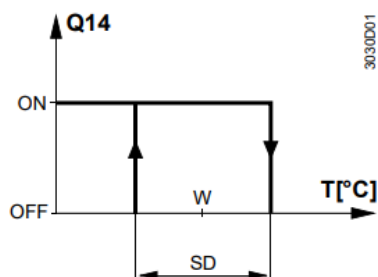
- Residential apartments

For the control of the following plant components and of DHW:

- Thermal valves or zone valves
- Gas or oil burners
- Fans
- Pumps
- Heat exchanger
- Continuous-flow water heater
- Small water heating systems

## Functions

### Function diagram



T Room temperature  
SD Switching differential  
W Room temperature setpoint  
Q14 Output signal for heating

- T Room temperature
- SD Switching differential
- W Room temperature setpoint
- Q14 Output signal for heating

## Operating modes



The RDE10.1DHW provides auto, normal operation, energy saving (or OFF) or frost protection mode. The difference between normal operation and energy-saving mode is merely the room temperature setpoint. The changeover from normal operation to energy saving or frost protection mode, or vice versa, is made by pressing a button. In auto mode changeover between operating modes is accomplished automatically according to the 7-day switching pattern.

### Normal operation





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

### Energy saving or OFF

When energy saving mode is activated, the symbol  appears on the display. The set point 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 the button  depressed for 4 seconds. In that case, the symbol does not  appear.

### Frost protection



When frost protection mode is activated, the symbol  appears on the display. 7-day time switch The changeover between “normal” and “energy saving” temperature setpoints can take place either automatically () or manually () , depending on the selection of the operating mode. When pressing the operating mode button until  appears on the display, the changeover will take place automatically according to the selected switching pattern. A specific switching pattern can be selected for every weekday.

### 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 button is set to  or  the controller will maintain normal operation or energy saving mode respectively. DHW mode The RDE10.1DHW features independent control of DHW.

The following DHW operating modes can be selected:

- Continuously ON: Symbol  appears on the display
- Continuously OFF: No symbol  on the display
- Auto: Symbol appears on the display, DHW is switched according to the selected switching pattern

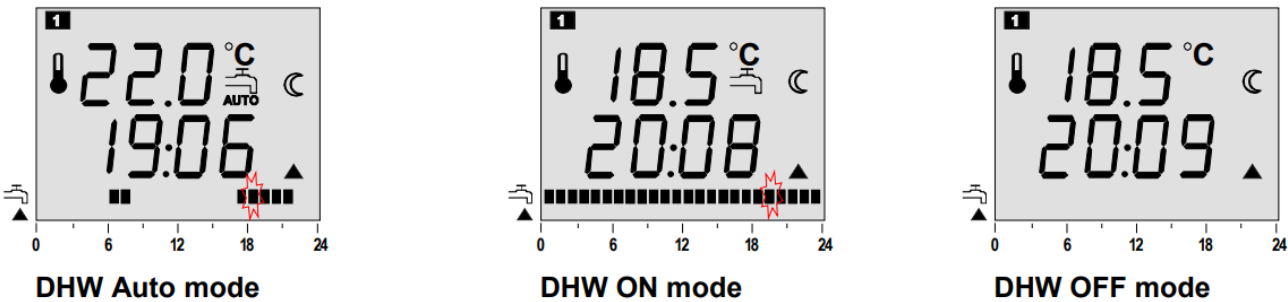
**Factory setting: Time switch for DHW**

Day(s)	DHW control ON 	DHW control OFF
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

Display The digital display shows the actual room temperature, the time of day, the weekday, the current switching pattern for heating, the switching pattern for DHW, and the symbol of the operating mode currently active. When the heating output is activated, the triangle symbol appears. The display of the switching pattern is split up into upper and lower rows.

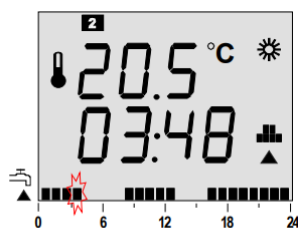
**Upper row with switching pattern for DHW control**

When the segment is displayed and flashing, the DHW output is activated. When no segment is displayed, the DHW output is deactivated.

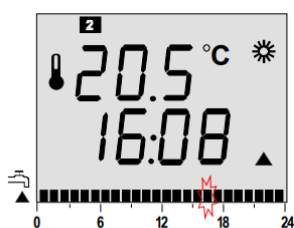


**Lower row with switching pattern for heating**

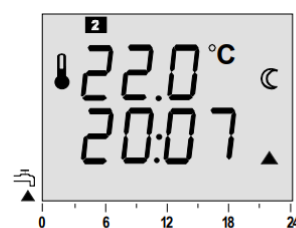
When the segment is displayed and flashing, the normal temperature setpoint is active. When no segment is displayed, the energy saving or frost protection temperature setpoint is active.



**Automatic changeover  
according to switching pattern**



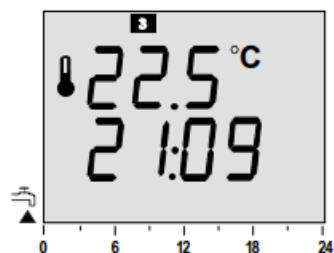
**Normal operation**



**Energy saving mode**

### OFF mode and frost protection display

Backup When taking out the batteries, the setpoints and the information required for operating mode changeover are memorized. However, the real-time clock must be reset after the batteries are replaced.



**OFF mode**



**Frost protection mode**

### Ordering

When ordering, please give name and type reference: Room temperature controller RDE10.1DHW. Valve actuators are to be ordered as separate items.

### Equipment combinations

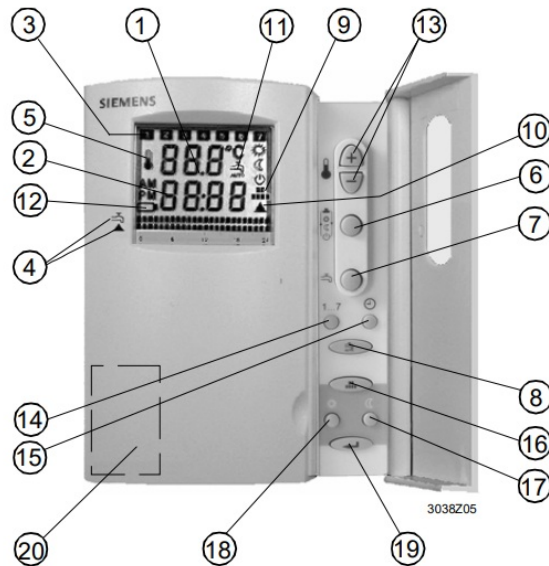
Type of unit	Type reference	Data sheet
Electromotoric ON / OFF actuator	<b>SFA21...</b>	4863
Thermal actuator (for radiator valve)	<b>STA21...</b>	4893
Thermal actuator (for small valve 2.5 mm)	<b>STP21...</b>	4878

### 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 112 x 130 mm	ARG70.2










### Mechanical design

The controller consists of 2 parts:



- Plastic housing with digital display, which accommodates the electronics, the operating elements and the built-in room temperature sensor
- Mounting base
- The housing engages in the mounting base and snaps on.
- The base carries the screw terminals.

## Legend

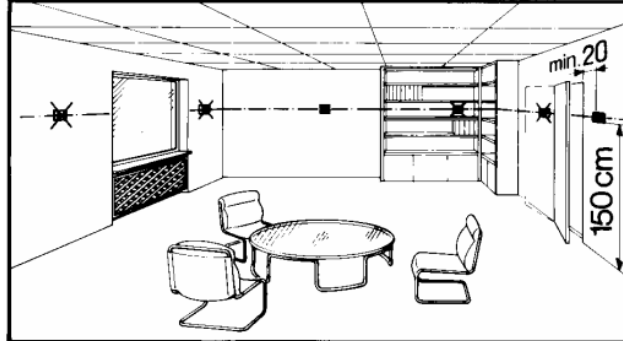
1. Display of the room temperature in °C, or setpoints
2. The current time of day using the 00:00... 23:59 format
3. Current weekdays from 1 (Monday) to 7 (Sunday)
4. Current heating ▲ and DHW switching pattern with flashing time pointer
5.  Symbol when the actual room temperature is displayed
6.  Button for operating mode
7.  Button for DHW control
8.  Selecting and leaving the setting mode for the DHW switching pattern
9.  Symbol in automatic mode or when selecting the switching pattern
10.  Heating ON
11.  or  will show when DHW heating is activated
12.  A symbol indicating that batteries need to be replaced
13. Buttons for adjusting the setpoints, the time of day and the switching times
14. Setting the weekday
15. Setting the time of day
16. Selecting and leaving the setting mode for the heating switching pattern
17. Setpoint adjustment for energy-saving mode
18. Setpoint adjustment for normal operation

19. Button for confirming the switching pattern settings

20. Battery compartment

### Notes

The room temperature controller should be mounted in a location where the air temperature can be acquired as accurately as possible without getting adversely affected by direct solar radiation or other heat or refrigeration sources. The mounting height is about 1.5 m above the floor.







The controller can be fitted to a recessed conduit box.



- Only authorized staff may open the unit.
- Caution: AC 230 V!
- The cables used must satisfy the insulation requirements for the main potential

### Mounting, installations and commissioning

When mounting the controller, fix the base first. Then, make the electrical connections and fit and secure the cover (also refer to the relevant 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  $\pm 3$  K by pressing the  and  buttons. 5 seconds after the last push of a button, the controller will automatically return to the normal operating state. **Change of batteries** If the battery symbol appears, the battery power is almost exhausted and the batteries should be replaced. To make a

reset, first press  and hold the button, then  press the 2 buttons simultaneously for 3 seconds. All individual settings will be reset to their standard values.

### Reset

### Technical data

- Operating voltage DC 3 V (2 x 1.5 V AA Alkaline batteries)
- Battery life (RDE10.1DHW) > 1 year (AA Alkaline batteries)

### Power supply

- Heating valve or wall-hung boiler – Y1
- Control output Q12 (NC contact)
- Rating RDE0.1DHW (AC 24...250 V) max. 5(2) A
- Control output Q14 (NO contact)
- Rating RDE10.1DHW (AC 24...250 V) max. 5(2) A

### **Control outputs**

- DHW control – Y2
- Control output Q22 (NC contact)
- Rating RDE10.1DHW (AC 24...250 V) max. 5(2) A
- Control output Q24 (NO contact)
- Rating RDE10.1DHW (AC 24...250 V) max. 5(2) A
- Switching differential SD 1 K

### **Setpoint setting range**

- Normal operation 5...35 °C
- Energy saving 0 (OFF) and 5...35 °C
- Factory setting normal operation 20 °C
- Factory setting energy saving 8 °C
- Frost protection 5 °C (fixed)

### **Resolution of settings and displays**

- Setpoints 0.5 °C
- Switching times 60 min
- Actual temperature value displays 0.5 °C
- Time of day displays 1 min

### **Operational data**

- An 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

### **Environmental conditions**



- Storage to IEC 721-3-1
- Climatic conditions class 1K3
- Temperature -25...+60 °C
- Humidity <95 % r. h. conformity to
- EMC directive 89/336/EEC
- Low-voltage directive 73/23/EEC and 93/68/EEC
- N474 C-Tick conformity to EMC emission standard AS/NSZ 4251.1:1994

### Product standards

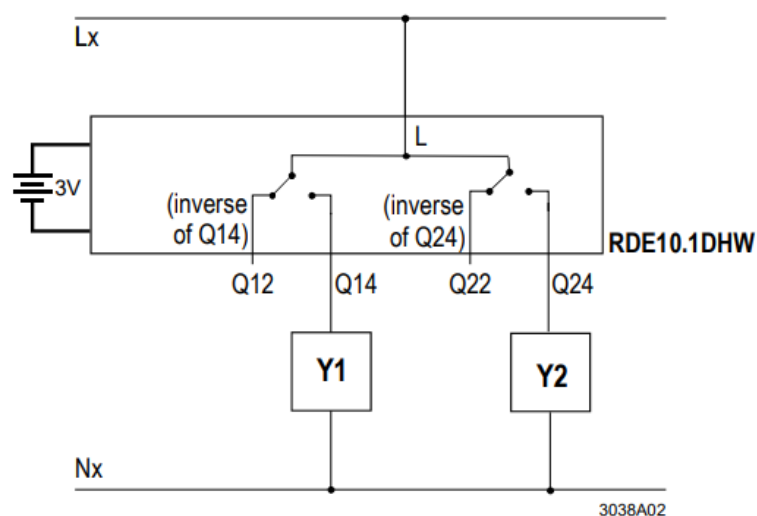
- Automatic electrical controls for EN 60 730 – 1 and household and similar use EN 60 730–2-9
- Electromagnetic compatibility
- Emissions EN 61 000–6-3
- Immunity EN 61 000–6-1
- Safety class II to EN 60730

### Pollution class normal

- Degree of protection of housing IP30 to EN 60529
- Connection terminals for solid wires or prepared stranded wires.
- 2 x 1.5 mm<sup>2</sup>
- or 1 x 2.5 mm<sup>2</sup>
- (min. 0.5 mm<sup>2</sup>)
- Weight 0.21 kg
- The colour of the housing front is white, NCS S 0502-G (RAL 9003)

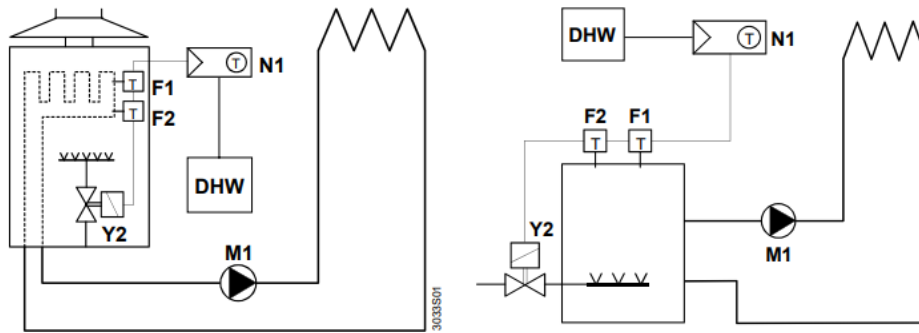
### General

### Connection diagram

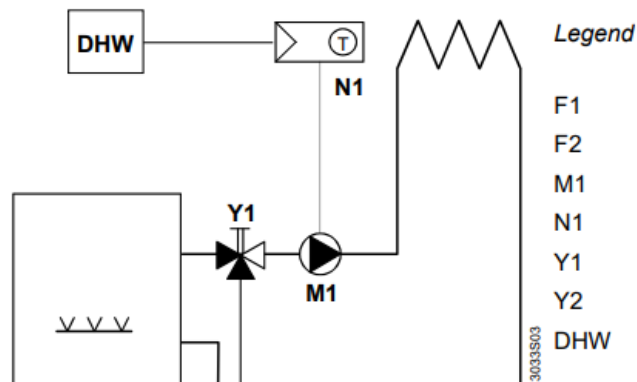


**Lx - Nx AC 24...250 V / max. 5 (2) A**

### Application examples



- Room temperature controller with direct control of a gas-fired wall-hung boiler and independent control of DHW
- Room temperature controller with direct control of a gas-fired floor-standing boiler and independent control of DHW



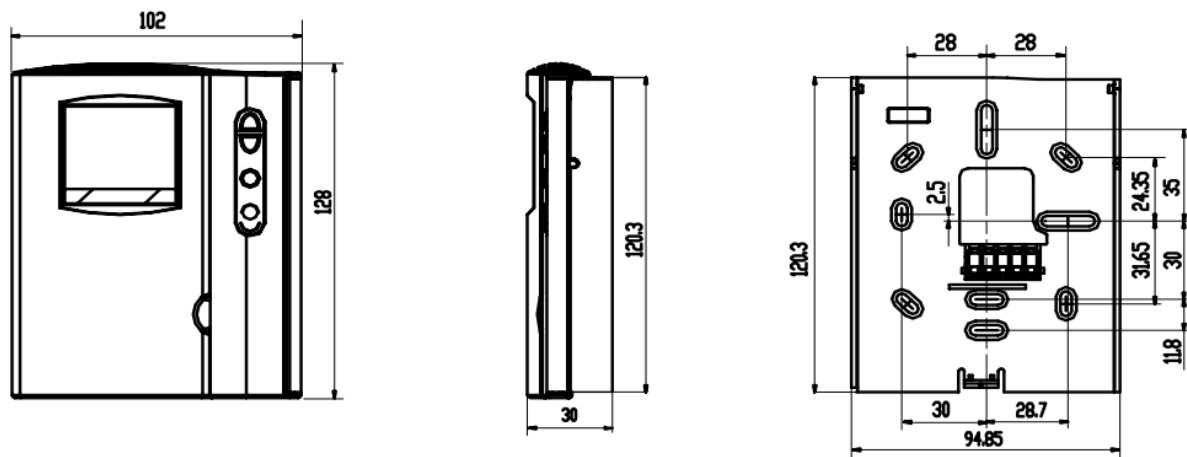
## Legend

- Thermal reset limit thermostat
- Safety limit thermostat
- Circulating pump
- RDE10.1DHW room temperatures controller
- 3-port valve with manual adjustment
- Magnetic valve
- DHW heating equipment

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

## Dimensions

## Controller and base



Building Technologies Room temperature controller RDE10.1DHW CE1N3038en 2005 Siemens Switzerland Ltd  
Subject to alteration HVAC Products

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## References

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