



Room Temperature Controller with 7-Day Time Switch and independent DHW Control

RDE10.1DHW

- 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

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

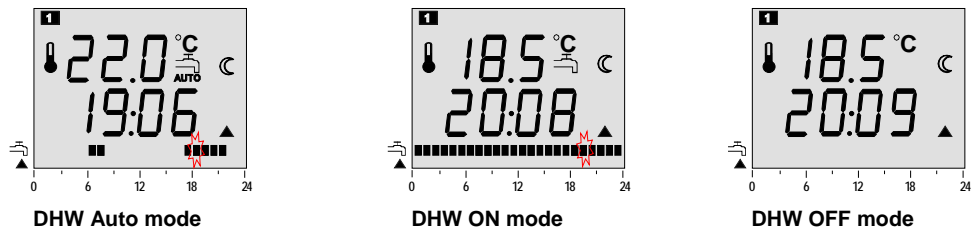
Display

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.

Display of the switching pattern is split up in upper and lower row.

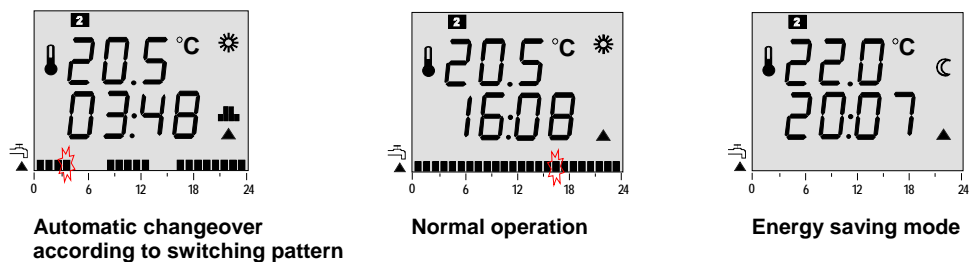
Upper row with switching pattern for DHW control

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

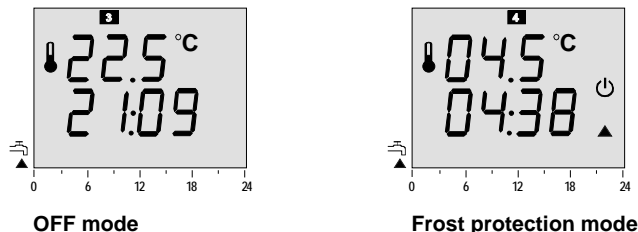


Lower row with switching pattern for heating

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.



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.

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	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 112 x 130 mm	ARG70.2

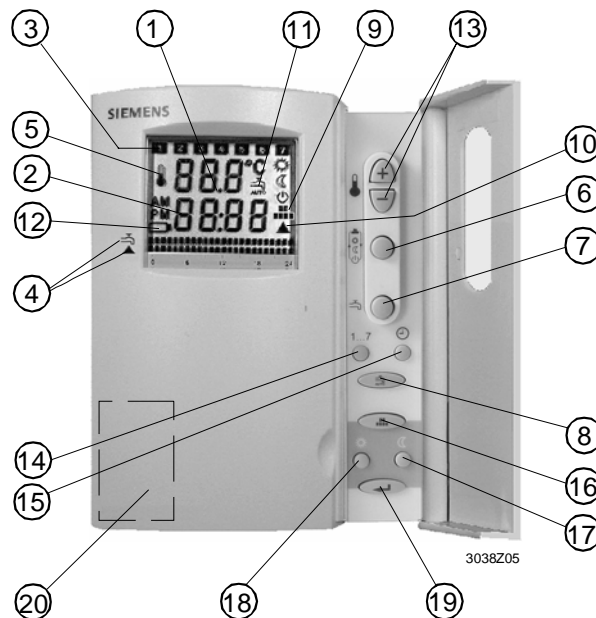
Mechanical design

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






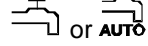

The housing engages in the mounting base and snaps on.

The base carries the screw terminals.



Legend

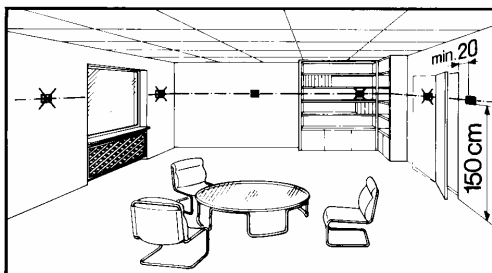
- 1 Display of the room temperature in °C, or setpoints
- 2 Current time of day using the 00:00... 23:59 format
- 3 Current weekday from 1 (Monday) to 7 (Sunday)
- 4 Current heating ▲ and DHW  switching pattern with flashing time pointer
- 5  Symbol when the actual room temperature is displayed

- 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  will show when DHW heating is activated
- 12  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.

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 with regard to mains 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 +/- 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.

Reset 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.

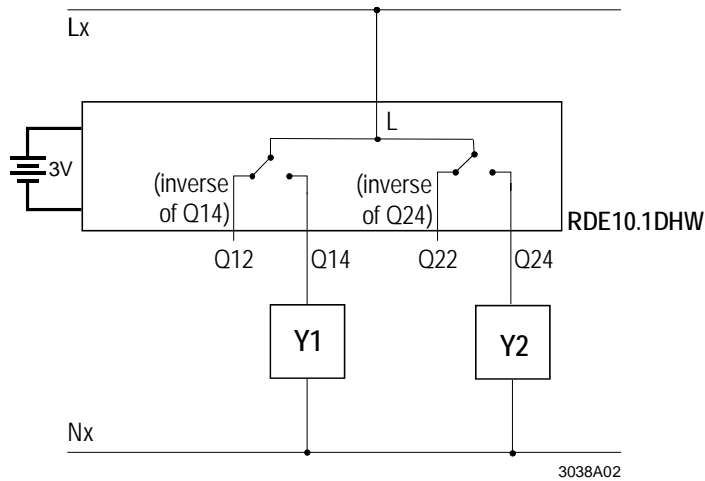
Technical data

Power supply	Operating voltage	DC 3 V (2 x 1.5 V AA Alkaline batteries)
	Battery life (RDE10.1DHW)	> 1 year (AA Alkaline batteries)
Control outputs	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
	DHW control – Y2	
	Control output Q22 (NC contact)	
	Rating RDE10.1DHW (AC 24...250 V)	max. 5(2) A
Operational data	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
Environmental conditions	Operation	
	Climatic conditions	to IEC 721-3-3 class 3K5
	Temperature	0...+50 °C
	Humidity	<95 % r.h.
	Transport	
	Climatic conditions	to IEC 721-3-2 class 2K3
	Temperature	-25...+60 °C
	Humidity	<95 % r. h.
	Mechanical conditions	class 2M2
	Storage	
	Climatic conditions	to IEC 721-3-1 class 1K3
	Temperature	-25...+60 °C
Humidity	<95 % r. h.	
Standards	CE 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 household and similar use	EN 60 730 – 1 and EN 60 730–2-9
	Electromagnetic compatibility	
	Emissions	EN 61 000–6-3
	Immunity	EN 61 000–6-1

General

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 ² or 1 x 2.5 mm ² (min. 0.5 mm ²)
Weight	0.21 kg
Color of housing front	white, NCS S 0502-G (RAL 9003)

Connection diagram

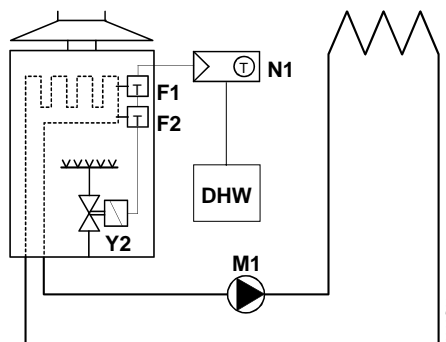


Lx - Nx AC 24...250 V / max. 5 (2) A

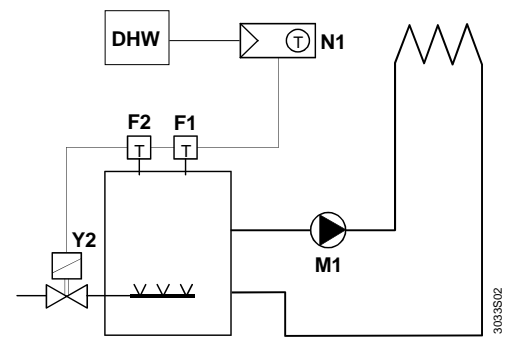
Legend

- Y1** Heating valve or wall-hung boiler
- Y2** DHW heating equipment

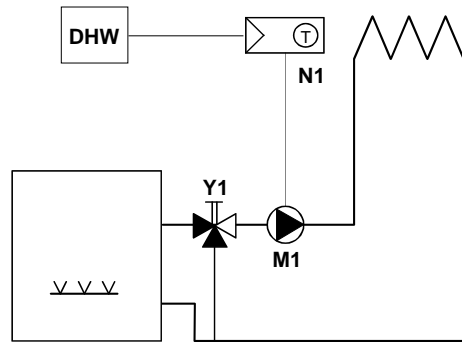
Application examples



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

- F1 Thermal reset limit thermostat
- F2 Safety limit thermostat
- M1 Circulating pump
- N1 RDE10.1DHW room temperatures controller
- Y1 3-port valve with manual adjustment
- Y2 Magnetic valve
- DHW DHW heating equipment

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

Dimensions

Controller and base

