SIEMENS

2261

Self-learning Room Temperature Controller REV12

5 operating modes, menu selection via roller selector

- **Mains-independent room temperature controller**
- **Straightforward, self-explanatory menu selection via roller selector**
- **Self-learning 2-position controller providing PID mode (patented)**
- **Choice of operating modes:**
  automatic with maximum 2 heating periods, continuously comfort mode, continuously economy mode, frost protection with one 24-hour operating mode and one heating period
- **In automatic mode, one temperature setpoint can be adjusted for each heating period**

Use

For the control of the room temperature in:

- Apartments, single-family or holiday houses
- Offices, individual rooms, consulting rooms or commercially used spaces

For the control of the following pieces of equipment:

- Solenoid valves of instantaneous water heaters
- Solenoid valves of atmospheric gas burners
- Forced draft gas or oil burners
- Circulating pumps in heating systems, zone valves
- Electric direct heating systems or fans of electric storage heaters
- Thermic actuators

CE1N2261en
23.04.2002

Siemens Building Technologies
HVAC Products

Functions

- PID mode with self-learning or selectable switching cycle
- 2-position control
- Automatic mode with one or 2 heating periods
- One temperature setpoint for each heating period
- 24-hour operating mode with one heating period
- Override button
- Sensor calibration and reset function
- Frost protection function
- Limitation of the minimum setpoint

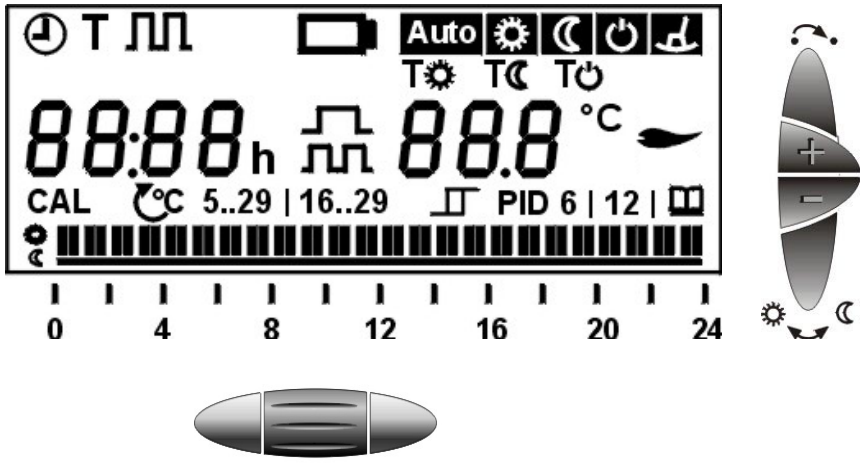
Ordering

Room temperature controller	**REV12**

When ordering, please give the type reference.
The controller is supplied complete with batteries.

Technical design

Display and operating elements



Operating elements

Selection of operating mode

Warmer button

Colder button

Override button

Roller selector for the menu, submenus and settings
Confirm by pressing

Display

	21:38 h	Time of day
	20.8 °C	Room temperature
		Change batteries (display appears about 3 months before batteries are exhausted)

Selection of operating mode (only one operating mode is active)

	Auto	Automatic mode
		Comfort mode
		Economy mode
		Frost protection
		24-hour mode with one heating period (heating period is automatically generated from the current 24-hour program)

Temporary change of the current setpoint temperature
(change only active until the next switching point is reached)

	19.0 °C	When pressing the + or – button once, the adjusted setpoint temperature will be displayed. It can be readjusted in increments of 0.2 °C (max. +/- 4 °C).

Override button

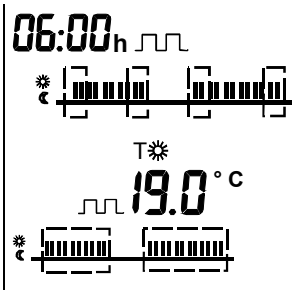
	In operating modes Auto and  , this button can be used to switch from comfort to economy temperature, or vice versa. The selection is maintained until the next switching point is reached or until the operating mode is changed.

Menu-driven user settings: 4 main menus available

Time of day	Main menu		Settings
		12:00 h	Current time of day

Temperature	Main menu	Submenu	Factory settings	
	T		Setpoint comfort mode	19 °C
			Setpoint economy mode	16 °C
			Setpoint frost protection	5 °C

Time switch	Main menu	Submenu	Settings
			1 heating period per day
			2 heating periods per day



Selection of heating period start time
Selection of heating period end time

Selection of heating period setpoint temperature

Menu-driven heating engineer settings	Menu items	Settings
	**CAL**	**Sensor calibration**
	°C 5..29 | 16..29	**Setpoint limitation**
		**2-position control**
	PID 	**PID mode, self-learning**
	PID 6 | 12	**PID mode with a switching cycle of 6 or 12 minutes**

Temperature set-points

In the automatic operating modes, temperature setpoints can be individually adjusted for every comfort period and for the continuous operating modes. The temperature setpoint of economy mode is the same in automatic and continuous operation.

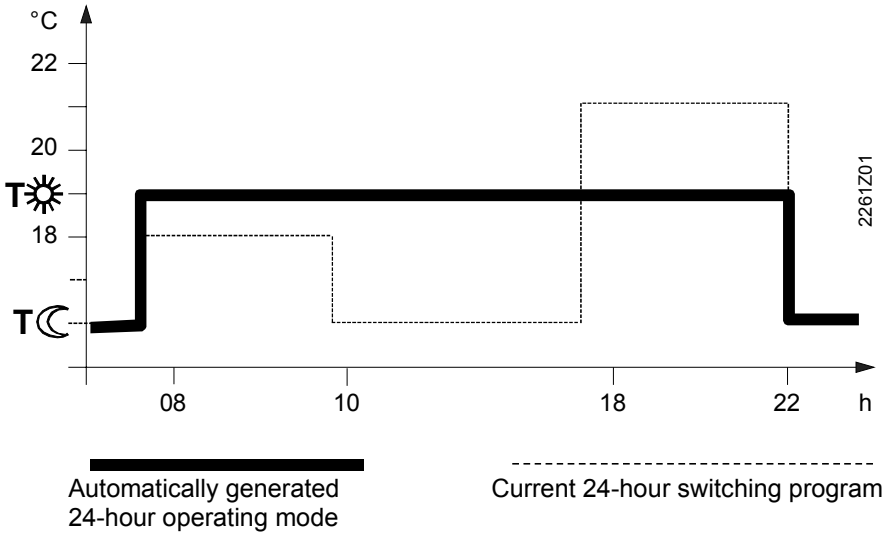
Protective function

In frost protection mode, the room temperature is constantly monitored. If it falls below the adjusted setpoint, heating is switched on to maintain the adjusted frost protection setpoint temperature T⏻.

24-hour operating mode

The controller generates the 24-hour operating mode from the current 24-hour program. It automatically selects the switch-on time of the first heating period and the switch-off time of the last heating period to generate and display a complete heating period. The comfort temperature used by the controller is the currently stored standard setpoint of the continuous operating mode ☼. The self-generated 24-hour operating mode is maintained until another operating mode is selected.

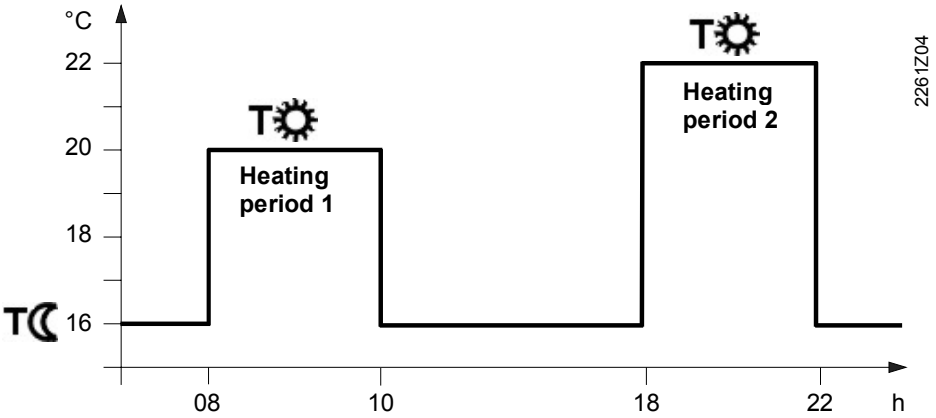
Example



Switching program

The switching program is used as the 24-hour program. It is also possible to select one of the continuous operating modes with which the switching program is not used.
When a heating period is programmed, 2 different switching patterns are available.
It is possible to select one or 2 heating periods.
For each heating period, the start time, end time and comfort temperature setpoint are to be entered. In between heating periods, it is always the same economy temperature setpoint that is used. This economy temperature setpoint can be adjusted on the temperature menu.

Example with 2 heating periods per day



Factory settings

Operating mode	Switching times				Temperatures in °C			
Daily					1st heating period	2nd heating period		
Auto	06:00	09:00	17:00	22:00	19	20		
	00:00	24:00			19			
	00:00	24:00					16	
	00:00	24:00						5

Factory settings heating engineer

Setpoint limitation °C 5..29 and self-learning PID mode PID

Heating engineer level

Accessing

To access the heating engineer level, keep the warmer and colder buttons depressed and simultaneously roll the roller selector away from the display and then toward the display.

Sensor calibration

CAL

If the displayed temperature does not correspond to the effective room temperature, the temperature sensor can be recalibrated (recalibration to be made on the heating engineer level).
The displayed temperature can be matched to the effective room temperature in increments of 0.2 °C (max. ±2 °C).

Limitation of setpoint

°C 5..29 | 16..29

Minimum setpoint limitation of 16 °C prevents undesired heat transfer to neighboring apartments in buildings with several heating zones.

Control

The REV12 is a 2-position controller providing PID mode. The room temperature is controlled through the cyclic switching of an actuating device.

The controller generates the positioning signals depending on the deviation of the set-point from the actual value acquired by the built-in temperature sensor.

The rate of response to the deviation depends on the selected control algorithm.

Self-learning mode

PID

The controller is supplied with an active self-learning operating mode, enabling it to automatically adapt to the controlled system (type of building construction, type of radiators, size of the rooms, etc.). After a certain learning period, the controller optimizes its parameters and then operates with the learned parameters.

Exceptions

In exceptional cases, in which the self-learning mode may not be ideal, it is possible to select PID 12, PID 6 or 2-Pt mode:

PID 12

PID 6

PID 12 mode	Switching cycle of 12 minutes for normal or slow controlled systems (massive building structures, large spaces, cast-iron radiators, oil burners).
PID 6 mode	Switching cycle of 6 minutes for fast controlled systems (light building structures, small spaces, plate radiators or convectors, gas burners).
2-Pt mode	Pure 2-position control with a switching differential of 0.5 °C (±0.25 °C) for very difficult controlled systems with considerable outdoor temperature variations.

Reset functions

User-defined data:
Press the button behind the pin opening for at least one second: this resets the user-specific settings to their default values (the heating engineer settings will not be changed). The clock starts at 12:00. During the reset time, all sections of the display light up, enabling them to be checked.
All user-defined data plus the heating engineer settings:
Press the button behind the pin opening together with the warmer and colder buttons for at least one second.
After this reset, all **factory settings** will be reloaded (also refer to section “Factory settings“).

Mechanical design

Battery change

About 3 months before the batteries are exhausted, the battery symbol appears on the display, but all functions will be fully maintained. When changing the batteries, the current data will be retained for a maximum of one minute.

Controller

The REV12 has a plastic housing with a large display and easily accessible operating elements. The controller is removed from its base by sliding it upward. It is thus possible to replace the two 1.5 V alkaline batteries type **AAA** in the compartment at the rear of the controller.

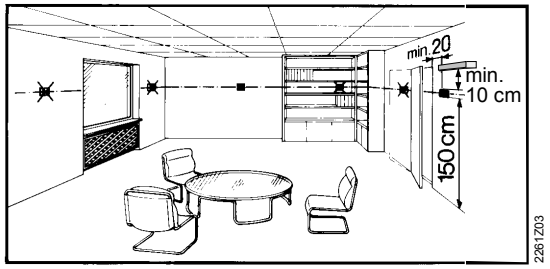
Base

The base can be fitted to most types of commercially available recessed conduit boxes or directly on the wall for wiring. The base only houses the terminals for the electrical connection between the controller and the connected devices. The entire electronics (including the relay with a potentialfree N.O. contact) are accommodated in the controller.

Notes

Engineering

- The room temperature controller should be fitted in the main living room
- The place of installation should be chosen such that the sensor can capture the room temperature as accurately as possible, without being affected by direct solar radiation or other heating or cooling sources
- Mounting height is approximately 1.5 m above the floor
- The controller can be fitted to most commercially available recessed conduit boxes or directly on the wall
- Above the unit, there must be sufficient clearance to remove the controller from its base and to replace it



Mounting and installation

- When installing the controller, the base must first be fitted and wired. Then, the unit can be slid onto the base from above
- For more detailed information, please refer to the installation instructions supplied with the controller
- For the electrical installation, the local safety regulations must be complied with

Commissioning

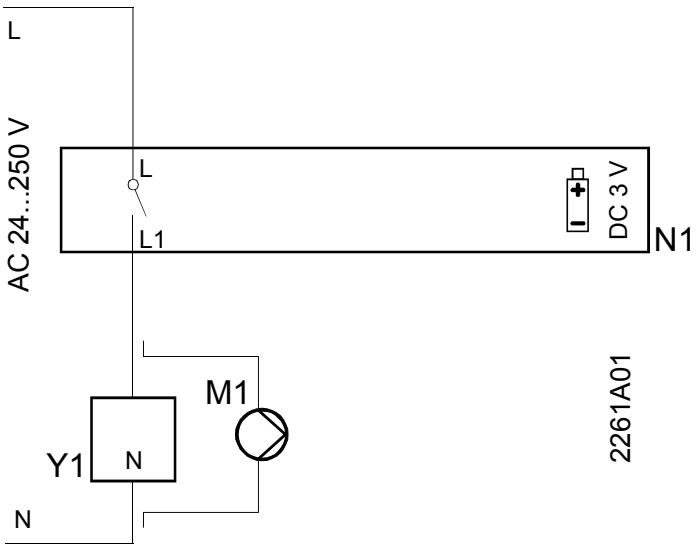
- The battery transit tab, which prevents inadvertent operation of the controller during transport and storage, must be removed
- The control mode can be changed on the heating engineer level
- If the reference room is equipped with thermostatic radiator valves, they must be set to their fully open position
- If the displayed room temperature does not correspond to the effective room temperature, the temperature sensor should be recalibrated (refer to “Sensor calibration”)

Technical data

General unit data	Operating voltage	DC 3 V
	Batteries (alkaline AAA)	2 x 1.5 V
	Battery life	approx. 2 years
	Backup for batter change	max. 1 min
	Switching capacity of relay	
	Voltage	AC 24…250 V
	Current	6 (2.5) A
	Safety class	II to EN 60 730-1
	Sensing element	NTC 10 kΩ ±1 % at 25 °C
	Measuring range	0…50 °C
	Time constant	max. 10 min
	Setpoint setting ranges	
	Normal temperature	5…29 °C
	Economy temperature	5…29 °C
	Frost protection temperature	5...29 °C (factory setting 5 °C)

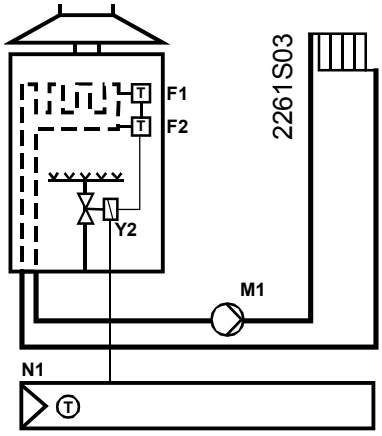
	Resolution of settings and display	
	Setpoints	0.2 °C
	Switching times	10 min
	Measurement of actual value	0.1 °C
	Display of actual value	0.2 °C
	Display of time	1 min
Norms and standards	CE conformity	
	Electromagnetic compatibility	89/336/EEC
	Low voltage directive	73/23/EEC
	C-Tick	 N474
Product standards	Automatic electrical controls for household	
	and similar use	EN 60 730-1
	Electromagnetic compatibility	
	Immunity	EN 50082-1
	Emissions	EN 50081-1
Environmental	Operation	
conditions	Climatic conditions	class 3K3 to IEC 60 721-3
	Perm. ambient temperature	5...40 °C
	Humidity	< 85 % r.h.
	Storage and transport	
	Climatic conditions	class 2K3 to IEC 60 721-3
	Ambient temperature	-25…+70 °C
	Humidity	< 93 % r.h.
	Mechanism	class 2M2 to IEC 60 721-3
Weight	Incl. package	0.270 kg
Color	Housing	signal-white RAL9003
	Base	grey RAL7038
Size	Housing	128 x 96 x 30 mm

Connection diagram

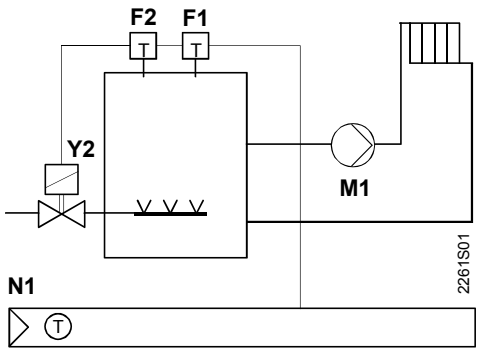


L	Live, AC 24…250 V
L1	N.O. contact, AC 24…250 V / 6 (2.5) A
M1	Circulating pump
N	Neutral conductor
N1	Room temperature controller REV12
Y1	Actuating device

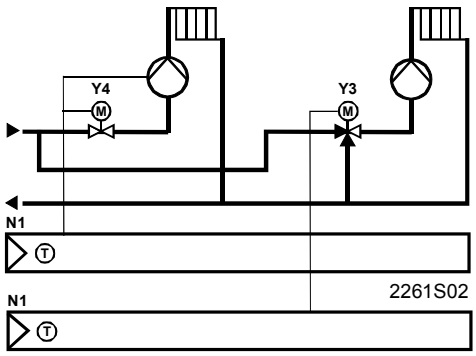
Application example



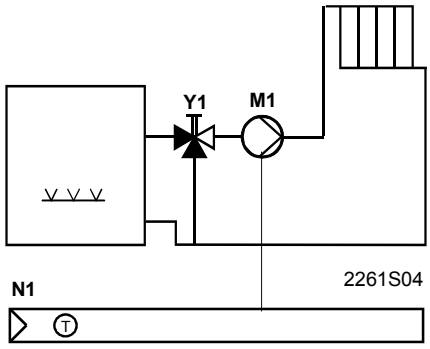
Instantaneous water heater



Atmospheric gas burner



Zone valve



Circulating pump with precontrol by manual mixing valve

F1	Limit thermostat
F2	Safety limit thermostat
M1	Circulating pump
N1	Room temperature controller REV12
Y1	2-port valve with manual adjustment
Y2	Solenoid valve
Y3	Motorized 3-port valve
Y4	Motorized 2-port valve

Dimensions