



RDE100.1RF



RCR100RF

Wireless room thermostat with auto timer

RDE100.1RFS

for heating systems

- Room temperature control
- 2-position / TPI control with On/Off output for heating
- Optimum Start / Stop
- Comfort, Economy, Auto Timer and Protection mode
- Auto Timer
- Adjustable commissioning and control parameters
- Battery-powered room thermostat DC 3 V (RDE100.1RF)
- Mains-powered receiver AC 230 V (RCR100RF)
- Multifunction input for external floor sensor, keycard contact, etc.

Use

The RDE100.1RFS is used to control the room temperature in heating systems.

Typical applications:

- Apartments
- Commercial spaces
- Schools

For the control of the following pieces of equipment:

- Thermal valves or zone valves
- Gas or oil boilers
- Fans
- Pumps
- Floor heating systems

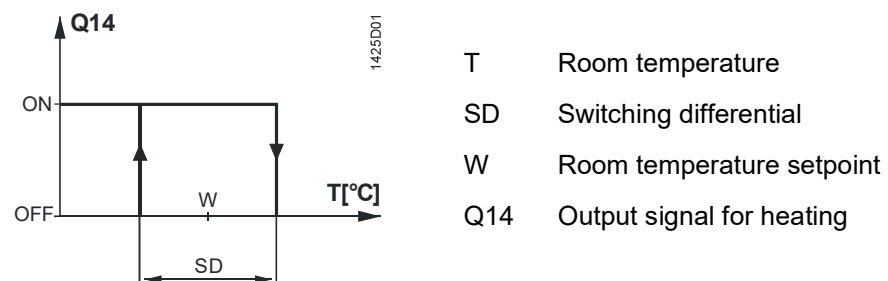
Functions

- Room temperature control via built-in sensor or external input
- Operating mode switchover contact (keycard, window contact, etc.)
- One multifunctional input freely selectable for floor heating temperature limitation function
- Selection of operating mode via touchkey
- Setting time switches (individual days, 7 days, or days 5-2)
- Display of current room temperature or setpoint in °C or °F
- Touchkey lock (manually)
- Setpoint lock
- Periodic pump run
- Optimum start / stop
- Comfort temperature limitation by Economy setpoint locked
- Reloading factory settings for commissioning and control parameters
- Standalone wireless transmitter and receiver
- Wireless operating frequency 433 MHz

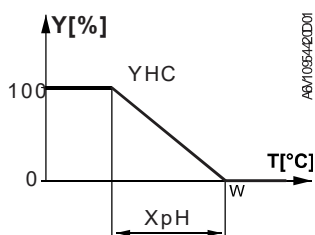
Temperature control

RDE100.. comprises of both 2-position and TPI temperature controls, which can be configured by parameter P78 (Control Behavior).

2-position control algorithm is to switch on and off the heating system within a switching differential according to comparison between setpoint setting and the measured room temperature.



TPI (Time proportional Integral) control algorithm is to periodically switch on and off the heating system. The period time and pulse length of the control signal (PWM) are determined by the setpoint and the measured room temperature.



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

Floor heating application

The factory setting for this function is Off (disabled) and must be set to "On" if floor heating is used.

The external floor temperature sensor is connected to input X1, \perp and acquires the floor temperature. If the floor temperature exceeds the parameterized temperature limit xx °C (P14 = 1, P15 = 1, P16 = xx °C), the heating valve is fully closed until the floor temperature returns to a level below the parameterized limit. Typical application is rooms (dry floor).

If the application does not require floor heating temperature limitation but instead uses the external sensor as a source for both room temperature display and control, the parameters will have to be set as follows: P14 = 1, P15 = 0. A typical application is the bathroom (wet floor) where a constant floor temperature is required.

It is not recommended to have **only** an internal built-in room sensor for floor heating since there is a potential risk of overheating.

Typical application: Maximum temperature limitation for under floor heating systems

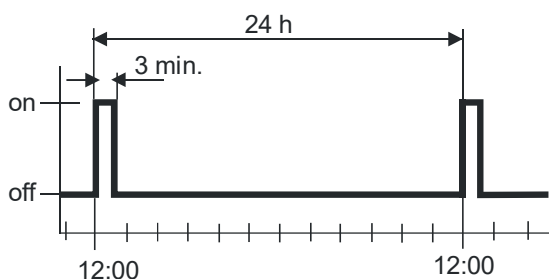
Operating mode changeover function

This function offers the keycard application (refer to the section "Operating notes", "Economy mode").

Periodic pump or valve kick

This function can only be used when a circulating pump or valve is controlled! It protects the pump or valve against seizing during longer off periods. The pump or valve kick is activated for 3 minutes every 24 hours at 12:00.

| Parameter | Pump state |
|-------------------|------------|
| P12 = 0 (default) | Off |
| P12 = 1 | On |



Optimum start control

The purpose of optimum start control is to reach a temperature level 0.25 K below the Comfort setpoint when occupancy according to the time program starts in Auto timer mode. For that purpose, the heating circuit must be switched on at an earlier point in time. The extent of forward shift depends primarily on the outside temperature.

The maximum forward shift on time can be adjusted by parameter P89. A Forward shift on maximum "0" means the function is disabled.

| Parameter | Range | Factory setting |
|----------------------------|----------------|-----------------|
| Forward shift on max (P89) | 0, 0.5,...24 h | 0 |

Optimum stop control

Optimum stop control switches off the heating circuit at the earliest possible point in time so that the room temperature will lay 0.5 K below the Comfort setpoint when the time switch changes from Comfort mode to Economy mode in Auto timer mode. The early shut down maximum time can be adjusted by parameter P90. Early shut down maximum "0" means the function is disabled.

| Parameter | Range | Factory setting |
|--------------------------|---------------|-----------------|
| Early shutdown max (P90) | 0, 0.5,...6 h | 0 |

Control behavior (P78)

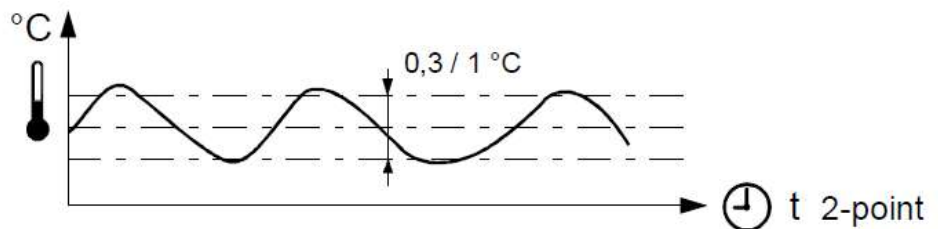
The new control algorithm of RDE100.. family offers a choice of control actions that can be configured via parameter **P78**. This means that optimum control can be selected for every type of application (**factory setting "TPI slow"**).

2-position, 1 K

2-Position controller with 1 [K] switching hysteresis

2-position, 0.3 K

- 2-Position controller with 0.3 [K] switching hysteresis.
- For general control situations. Provides a better comfort than 1 [K] switching hysteresis.
- Can also be used for difficult control situations.



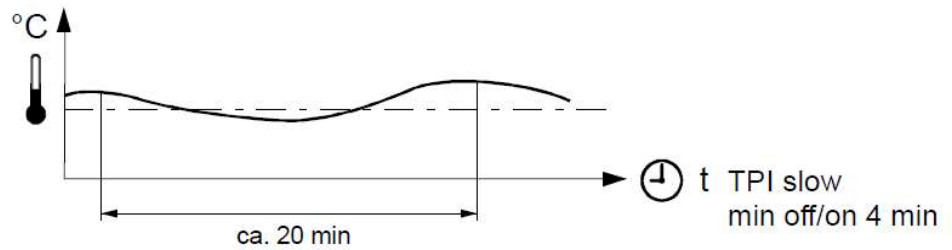
TPI slow

TPI control behavior for slow heating systems that require longer minimum On times and limited numbers of switching cycles per hour.

Typical applications:

- Floor heating systems, oil fired boilers
- Can also be used for all other types of heating applications. (Alternative setting)

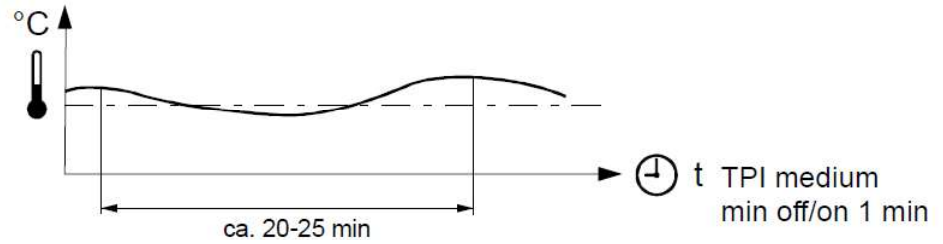
| | |
|---------------------------------|--------------------------|
| Minimum switching on / off time | > 4 minutes |
| Average period time | Approximately 20 minutes |



TPI medium

TPI control behavior for general heating applications such as radiator systems, thermal actuators, ...

| | |
|---------------------------------|-----------------------------|
| Minimum switching on / off time | > 1 minute |
| Average period time | Approximately 20-25 minutes |



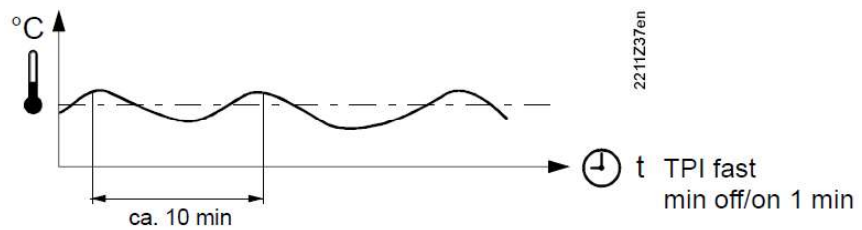
TPI fast

TPI control behavior for fast heating systems that tolerate a high number of switching cycles.

Typical applications: electric heaters, gas boilers, fast thermal actuators

| | |
|---------------------------------|--------------------------|
| Minimum switching on / off time | > 1 minute |
| Average period time | Approximately 10 minutes |

⚠ Do not use TPI fast for oil boilers or electro mechanical actuators!



Type summary

| Product No. | Stock No. | Features |
|-------------|--------------------|--|
| RDE100.1RF | S55770-T320 | Battery-powered room thermostat DC 3 V |
| RCR100RF | S55770-T418 | Receiver AC 230 V |










Ordering

When ordering, please indicate product No. / stock No. and description.

| Product No. | Stock No. | Description |
|-------------|--------------------|--|
| RDE100.1RFS | S55770-T282 | Set consisting of room thermostat and receiver |

Valve actuators/external sensor must be ordered separately.

Equipment combinations

| Description | | Product No. | Data Sheet *) | Use with the type of Temperature Control |
|--|---|-----------------|---------------|--|
| Electromotoric actuators |  | SFA21.. | 4863 | 2-Position & TPI slow |
| Electrothermal actuators (for radiator valves) |  | STA23.. | 4884 | 2-Position & All TPI |
| Electrothermal actuators (for small valves 2.5 mm) |  | STP23.. | 4884 | 2-Position & All TPI |
| Damper actuators |  | GDB.. | 4634 | 2-Position & TPI slow |
| Damper actuators |  | GSD.. | 4603 | 2-Position & TPI slow |
| Damper actuators |  | GQD.. | 4604 | 2-Position & TPI slow |
| Rotary damper actuators |  | GXD.. | 4622 | 2-Position & TPI slow |
| Cable temperature sensor |  | QAH11.1 | 1840 | N/A |
| Room temperature sensors |  | QAA32 .. | 1747 | N/A |

*) The documents can be downloaded from <http://siemens.com/bt/download>.

Mechanical design

The room thermostat consists of 3 parts:

- Plastic housing which accommodates the electronics, the operating elements and the room temperature sensor
- Mounting plate with screw terminals
- Table stand

The housing engages in the mounting plate and is secured with a screw. The optional table stand snaps onto the rear of the mounting plate.

The RCR100RF receiver consists of 2 parts:

- Plastic housing which accommodates the electronics
- Mounting plate with screw terminals

Operation and settings

RDE100.1RF



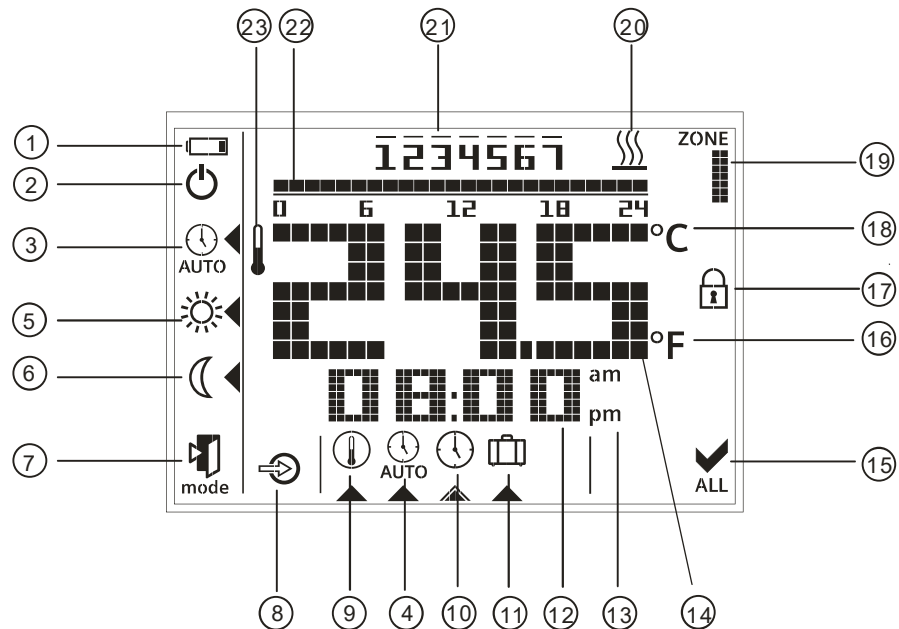
- 1) Touchkey for operating mode
- 2) Settings
- 3) Ok
- 4) Touchkey for decreasing a value
- 5) Touchkey for increasing a value

RCR100RF



- 1) LED for indication of operating state
- 2) LEARN button (or override)

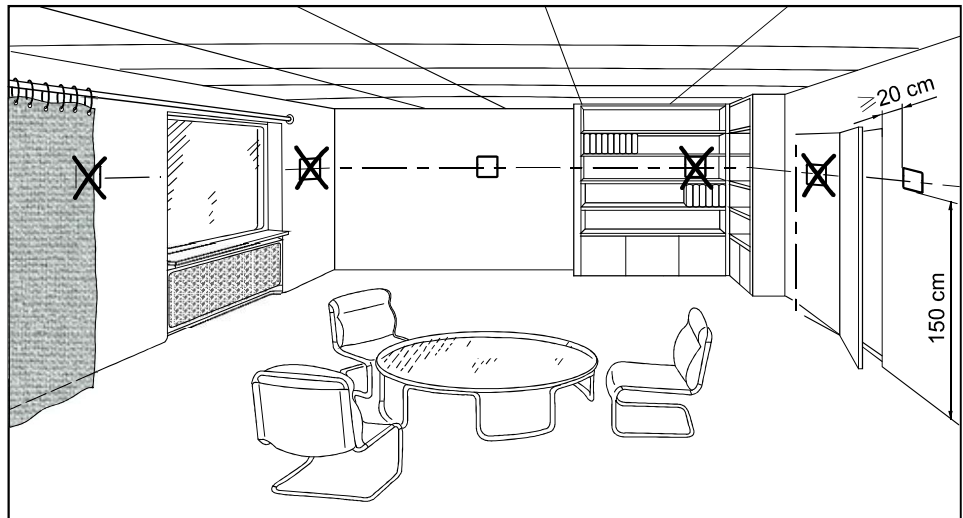
Display



| # | Symbol | Description | # | Symbol | Description |
|----|--------|--|----|----------|--|
| 1 | | Indicating that batteries need to be replaced | 13 | am pm | Morning: 12-hour format Afternoon: 12-hour format |
| 2 | | Protection mode (Protection mode symbol can be enabled via parameter settings) | 14 | | Display of room temperature, setpoint, etc. |
| 3 | | Auto Timer mode | 15 | | Confirmation |
| 4 | | View and set time switches | 16 | °F | Room temperature in degrees Fahrenheit |
| 5 | | Comfort mode | 17 | | Touchkey lock activated |
| 6 | | Economy mode | 18 | °C | Room temperature in degrees Celsius |
| 7 | | Escape | 19 | | Display of zone (default is 1) |
| 8 | | External input enabled | 20 | | Heating On |
| 9 | | Adjustment of setpoint | 21 | | Weekday 1 = Monday Weekday 7 = Sunday |
| 10 | | Setting of weekday and time of day | 22 | | Timer bar |
| 11 | | Setting of Holiday mode | 23 | | Current room temperature |
| 12 | | Display of time of day | | | |

Mounting and installation notes

Do not mount the thermostat in niches or bookshelves, not behind curtains, not above or near heat sources, and not exposed to direct solar radiation. Mount it about 1.5 m above the floor.



Mounting



- Mount the room thermostat in a clean and dry location without direct air flow from heating/cooling equipment, and not exposed to drip or splash water
- Install the receiver close to the controlled unit if possible
- Choose the location to ensure largely interference-free reception. When mounting the receiver, observe the following:
 - Do not mount in a control panel
 - Do not mount on metallic surfaces
 - Do not mount near electrical cables and equipment such as PCs, TVs, microwaves, etc.
 - Do not mount near larger metallic structures or constructional elements with fine metal meshes such as special glass or special concrete

Wiring

See Mounting Instructions CB1M1439xx enclosed with the thermostat.



- Ensure that wiring, protection and earthing comply with local regulations
- Correctly size the cables to the thermostat and the valve actuators
- Use only valve actuators rated for AC 24... 230 V
- If the thermostat cannot accommodate all cables, power must be fed to the system via an external terminal block



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 AC 230 V mains supply line must have a circuit breaker with a rated current of no more than 10 A



- Disconnect from power supply before removing the unit from its mounting plate
- External inputs X1, **⊥** may carry mains potential. Sensor cables or window contact must be carefully installed before applying power to the thermostat



- Make sure the receiver is not connected to power during wiring

Commissioning notes

| | |
|-------------------------------|---|
| Commissioning | <p>After power is applied, the thermostat carries out a reset during which all LCD segments flash, indicating that the reset is correctly made. After the reset, the thermostat is ready for commissioning by qualified HVAC personnel.</p> <p>The control parameters of the thermostat can be set to ensure optimum performance of the entire system (refer to Operating Instructions CB1B1425en, section "Do you want to change parameters?").</p> |
| Sensor calibration | <p>If the temperature shown on the display does not agree with the room temperature effectively measured, the temperature sensor can be recalibrated. For that purpose, adjust parameter P04.</p> |
| Setpoint lock | <p>We recommend to review the setpoint lock (for public spaces) using parameters P06 and P08 and change them as needed. If the Economy setpoint is locked then the Comfort temperature setpoint can not be set lower than the locked Economy setpoint.</p> |
| Touchpad scanning rate | <p>Since the thermostat uses touch technology and to minimize battery power consumption, parameter P21 (adjustable from 0.25 to 1.5 seconds) is implemented for the user to adjust.</p> <p>This means that when, for a certain time, the user does not touch the touchpad, the unit operates in power saving mode and the touchpad is running at a scanning rate of 1 second.</p> <p>(From the calculation – assuming 4 operations per day on the thermostat, the estimated 1-second scanning rate results in a battery life of 1 year. If the user increases the scanning rate, the batteries' life is extended.</p> |
| X1 external input | <p>Different parameter setting of X1 external input is described below:</p> <p>Parameter P14=0 (No Input) is a default setting, which provides no external input function.</p> <p>Digital input</p> <p>An external contact can switch the thermostat from any operating mode to Economy.</p> <p>Typical applications: Window contact Key card application</p> <p>Set parameter P14 = 2 (X1 External input = Digital Input) and adapt parameter P17 (Window contact = Normally Open / Closed) accordingly.</p> <p>External sensor (used for controlling)</p> <p>The measured external sensor temperature is displayed and used for calculating heating demand instead of temperature detected by thermostat built-in internal sensor. In case of problems with the external sensor, the thermostat uses the internal sensor instead.</p> <p>Typical applications: External room temperature sensor Floor heating temperature control bath room</p> |

Setting parameter P14 = 1 (X1 External input = External Sensor) and parameter P15 = 0 (Temperature limitation = Off)


Notes for floor heating temperature control:

- External safety thermostat is needed to prevent overheating of certain floor heating systems!
- Use of "Comfort setpoint lock" function (Parameter P06) is recommended.

External sensor for Floor heating application with temperature limitation

Refer to Floor Heating application section above when setting parameter P14 = 1 (X1 External input = External Sensor) and parameter P15 = 1 (Temperature limitation = On). Parameter P16 now allows to limit the maximum temperature.

Change of batteries

If the battery symbol  appears, the batteries are almost exhausted and should be replaced. Use alkaline batteries type AAA.


LED indication on RCR100RF

For the pairing process between transmitter and receiver, refer to Operating Instructions CB1B1425en, section "Do you want to pair transmitter and receiver?". The table below describes the behavior of the RCR100RF:

| State of receiver | State of LED |
|---|---|
| Power up (or reset) | The red and green LEDs flash alternately for 5 seconds and then change to constantly red. Note: If the receiver was programmed before, it will immediately change to constantly red. |
| Learning mode Successful learning mode | The red and green LEDs flash alternately. If learning was successful, the green LED will flash for 10 minutes. |
| Signal ok and output status change | The green LED is lit. If the output state changes, the green LED flashes for 3 seconds and then changes back to constantly green. |
| Fails to receive wireless data | If the RCR100RF fails to receive wireless data, the red LED will start to flash after 125 minutes. If the RCR100RF signal is recovered, it will resume the previous LED state. |

Override via the RCR100RF

The receiver provides an override function (boiler test, emergency operation). It allows the installer to override the relay to be permanently energized, regardless of the wireless data received.


To activate the override function, press and hold the  button for at least 10 seconds and release. The LED is constantly green and off once every 5 seconds, indicating that the override function is enabled.

To disable the override function, press the  button once.


Operating notes


The RDE100.1RF provides Comfort, Economy, Auto Timer and Protection mode. The difference between Comfort and Economy mode is only the room temperature setpoint. The changeover between Comfort, Economy and Protection mode is made either automatically by the time switch or by pressing the touchkey for the operating mode.

Comfort mode


When Comfort mode is activated, symbol  appears on the display. The setpoint (20 °C) can be readjusted by pressing touchkeys + and –.

Economy mode

When Economy mode is activated, symbol  appears on the display. The setpoint (16 °C) can be readjusted by pressing touchkeys + and –.

With the RDE100.1RF, the user can connect a window contact to input X1, . Depending on whether the window contact is configured for NO or NC (P14 = 2, P17 = 0 or 1), a change in this state will automatically switch the thermostat from any operating mode to Economy. This feature is suited for public spaces. The factory setting is Off (disabled).

Protection mode

If the temperature falls below 5 °C, the unit automatically activates the heating output. Symbol  appears only if the icon is enabled via parameter settings.


Auto Timer

When Auto Timer mode is enabled, the changeover between the operating modes (Comfort and Economy) takes place automatically. There are 3 options for time switch settings: Individual days, 7 days, or days 5-2. You can select Comfort or Economy mode at 15-minute intervals of the day. The 0:00 to 24:00 hour time bar allows you to set the operating mode throughout the selected day(s).

| Default value | Day/s | Comfort mode | Economy mode |
|---------------|-----------------|------------------------------------|------------------------------------|
| | Mo (1) – Fr (5) | 6:00 – 8:00 hr 17:00 – 22:00 hr | 22:00 – 6:00 hr 8:00 – 17:00 hr |
| | Sa (6) – Su (7) | 7:00 – 22:00 hr | 22:00 – 7:00 hr |

Refer to Operating Instructions CB1B1425, section "Do you want to enter your own time switch?".

Holiday mode

When Holiday mode is activated, symbol  appears on the display. The setpoint (12 °C) and the number of days a user is absent can be adjusted by pressing touchkeys + and –.

Parameters

Changing the parameters by the following steps:

- Press + and – simultaneously for 5 seconds
- Release them and parameter "P01" is displayed on the bottom segment
- Press + or – to scroll to the parameter that needs to be adjusted
- Press **ok** to select this parameter
- Press + or – to adjust the value
- Press **ok** to confirm the adjusted value
- Press mode to exit the parameters without saving or wait for the program to exit automatically

Parameter list

| Parameter no. | Description | Setting range (default) |
|---------------|-----------------------|--|
| P01 | Time format | 1 = 24:00 hours (default) 2 = 12:00 AM/PM |
| P02 | Selection of °C or °F | 1 = °C (default) 2 = °F |

| | | |
|-----|--|---|
| P03 | Standard temperature display | 1 = room temperature (default) 2 = setpoint |
| P04 | Temperature sensor calibration | -3...3 °C Step 0.5 °C (-6...6 °F, step 1 °F) Default: 0 °C |
| P06 | Comfort setpoint lock | 0 = OFF (default) 1 = ON → locked according to setting in permanent temperature setpoint |
| P08 | Economy setpoint lock | 0 = OFF (default) 1 = ON → locked according to setting in permanent temperature setpoint |
| P09 | Buzzer | 0 = OFF 1 = ON (default) |
| P10 | Show frost protection icon | 0 = OFF (default) 1 = ON |
| P11 | Time switch type for auto timer | 0 = Individual Days (default) 1 = All 7 days 2 = 5/2 days |
| P12 | Periodic pump run | 0 = OFF (default) 1 = ON |
| P14 | X1 External input | 0 = No input (default) 1 = External sensor 2 = Digital Input |
| P15 | Temperature limitation | 0 = OFF (default) ← 1 = ON ← |
| P16 | Max limitation temperature for underfloor heating | 25...60 °C, step 1 °C or 77...140 °F, step 1 °F ← Default: 30 °C |
| P17 | Window contact | 0 = Normally Open Contact (default) 1 = Normally Closed Contact |
| P19 | Sequence number of room unit | 0 = no display of zone (RF off) 1 = zone number 1 (for standard RF) (default) 6 = zone number 6 |
| P20 | RF learn | 0 = OFF (default) 1 = ON |
| P21 | Button scanning rate for the capacitive buttons Note: a shorter scanning rate means shorter battery life. | 0.2 = 0.25 s 0.5 = 0.5 s 1.0 = 1.0 s (default) 1.5 = 1.5 s |
| P22 | Reload factory settings | 0 = OFF (default) 1 = reload |
| P23 | Software version information | No adjustment possible |

| | | |
|-----|----------------------|--|
| P78 | Control behavior | 0 = On/Off, 1.0 K 1 = On/Off, 0.3 K 2 = TPI fast 3 = TPI medium 4 = TPI slow (default) |
| P89 | Forward shift on max | 0, 0.5,...24 h Default: 0 h |
| P90 | Early shutdown max | 0, 0.5,...6 h Default: 0 h |

Maintenance note

Thermostat and receiver are maintenance-free.

Disposal



This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to www.siemens.com/bt/disposal.



⚠ WARNING

Risk of explosion due to fire or short-circuit, even if the batteries are empty

Risk of injuries from by flying parts

- Do not allow the batteries to come into contact with water.
- Do not charge the batteries.
- Do not damage or destroy the batteries.
- Do not heat the batteries to more than 85 °C.



⚠ WARNING

Electrolyte leakage


Chemical burns

- Only grasp damaged batteries using suitable protective gloves.
- If electrolyte comes into contact with eyes, immediately rinse eyes with plenty of water. Consult a doctor.

Observe the following:

- Only replace batteries with batteries of the same type and from the same manufacturer.
- Observe the polarities (+/-).
- The batteries must be new and free from damage.
- Do not mixed new batteries with used batteries.
- Store, transport, and dispose of the batteries in accordance with local regulations, guidelines, and laws. Also observe information from the battery manufacturer.

Technical data of RDE100.1RF

| | | |
|---|--|---|
|  Power supply | Operating voltage | DC 3 V (2 x 1.5 V alkaline batteries AAA) |
| | RDE100.1RF | |
| | For battery life (RDE100.1RF), see below (alkaline batteries type AAA). Battery life calculation is based on the touchpad scanning rate during idle time (assuming a user presses 4 touchkeys per day with default TPI Slow control): | |
| | Scanning rate 0.25 s | 1.1 year battery life |
| | Scanning rate 0.5 s | 1.1 year battery life |
| | Scanning rate 1 s (default) | 1.3 year battery life |
| External sensor | External sensor (RDE100.1RF) | |
| | 'X1' - '⏏' (reference) | QAH11.1 (NTC 3K) / QAA32 |
| | Temperature range | 0...60 °C |
| | Cable length | Max. 80 m |
| Function data | or | |
| | Digital On/Off | |
| | 'X1' - '⏏' (reference) | On/Off switch |
| | Comfort mode | 20 °C (5...35 °C) |
| | Economy mode | 16 °C (5...35 °C) |
| | Holiday mode | 12 °C (5...35 °C) (standalone) |
| Environmental conditions | Built-in room temperature sensor | |
| | Setpoint setting range | 5...35 °C (Comfort/Economy mode) |
| | Accuracy at 25 °C | < ±0.5 K |
| | Temperature calibration range | ±3.0 K |
| | Resolution of settings and displays | |
| | Setpoints | 0.5 °C |
| | Temperature value displays | 0.5 °C |
| | Operation | As per IEC 60721-3-3 |
| | Climatic conditions | Class 3K5 |
| | Temperature | 0...50 °C |
| Humidity | <95% r.h. | |
| Standards and directives | Transport | As per IEC 60721-3-2 |
| | Climatic conditions | Class 2K3 |
| | Temperature | -25...65 °C |
| | Humidity | <95% r.h. |
| | Mechanical conditions | Class 2M2 |
| | Storage | As per IEC 60721-3-1 |
| | Climatic conditions | Class 1K3 |
| | Temperature | -25...65 °C |
| | Humidity | <95% r.h. |
| | EU Conformity (CE) | CE1T1420xx ^{*)} |
| RCM conformity | CE1T1420en_C1 ^{*)} | |
| Environmental compatibility | Safety class | II as per EN 60730-1, EN 60730-2-9 |
| | Pollution class | II as per EN 60730-1 |
| | Degree of protection of housing | IP30 as per EN 60529 |
| | The product environmental declaration CE1E1420xx ^{*)} contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal). | |



Meets the requirements for eu.bac certification as per EN 15500-1
 See product list at: <http://www.eubacert.eu/licences-by-criteria.asp>
 RDE100.1RF (license 221178)

Control accuracy [K]
0.4

Water Heating System
(thermal actuator, On/Off)

Water Floor Heating Systems
(thermal actuator, On/Off) 0.3

Eco design and labelling directives

Based on EU Regulation 813/2013 (Eco design directive) and 811/2013 (Labelling directive) concerning space heaters, combination heaters, the following classes apply:

- Application with On/Off operation Class I value 1%
of a heater
- TPI (PWM) room thermostat, for Class IV value 2%
use with On/Off output heater

General

| | |
|--------------------------|--|
| 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 | 0.179 kg |
| Color of housing front | RAL9003 |

*) The documents can be downloaded from <http://siemens.com/bt/download>.

Technical data of RCR100RF



Power supply

| | |
|------------------------------|-------------------|
| Operating voltage | AC 230 V +10/-15% |
| Power | <10 VA |
| Frequency | 48...63 Hz |
| Switching capacity of relays | |



Switching outputs (Q11, Q12, Q14)

| | |
|-------------------|-------------------------------|
| Voltage | AC 24...230 V |
| Current | 8 (2) A |
| Switching voltage | Max. AC 230 V Min. AC 24 V |
| Switching current | Max. 8 A res., 2 A ind. |
| At AC 230 V | Min. 200 mA |



No internal fuse.

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

External protection for incoming cable

| | |
|---|---|
| Circuit breaker | Max. 10 A |
| Circuit breaker tripping characteristic | Type B, C or D to EN 60898 and EN 60947 |
| Contact life at AC 230 V | Guide value: |
| At 8 A res. | 1 x 10 ⁵ cycles |

Insulating strength

| | |
|------------------------------------|------------|
| Between relay contacts and coil | AC 5,000 V |
| Between relay contacts (same pole) | AC 1,000 V |

Electrical connections

| | |
|----------------------|---|
| Connection terminals | Screw terminals |
| For solid wires | 2 x 1.5 mm ² |
| For stranded wires | 1 x 2.5 mm ² (Min. 0.5 mm ²) |

Environmental conditions

| | |
|---------------------|----------------------|
| Operation | As per IEC 60721-3-3 |
| Climatic conditions | Class 3K5 |
| Temperature | 0...50 °C |
| Humidity | <95% r.h. |

| | |
|---------------------------------|------------------------------------|
| Transport | As per IEC 60721-3-2 |
| Climatic conditions | Class 2K3 |
| Temperature | -25...65 °C |
| Humidity | <95% r.h. |
| Mechanical conditions | Class 2M2 |
| Storage | As per IEC 60721-3-1 |
| Climatic conditions | Class 1K3 |
| Temperature | -25...65 °C |
| Humidity | <95% r.h. |
| Standards and directives | |
| EU Conformity (CE) | CB1T1420xx *) |
| RCM conformity | CE1T1420en_C1*) |
| Safety class | II as per EN 60730-1, EN 60730-2-9 |
| Pollution class | II as per EN 60730-1 |
| Degree of protection of housing | IP30 as per EN 60529 |

Environmental compatibility

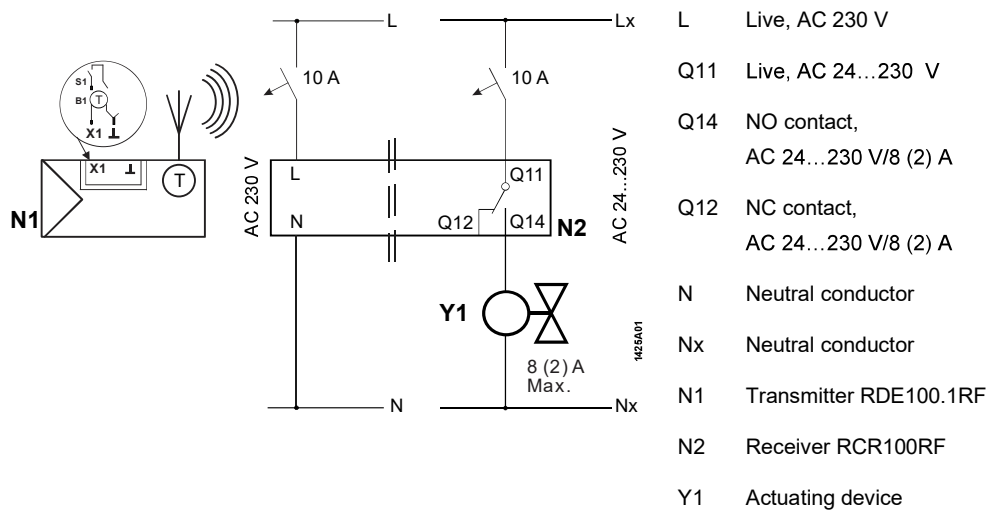
The product environmental declaration CE1E1420xx *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

General

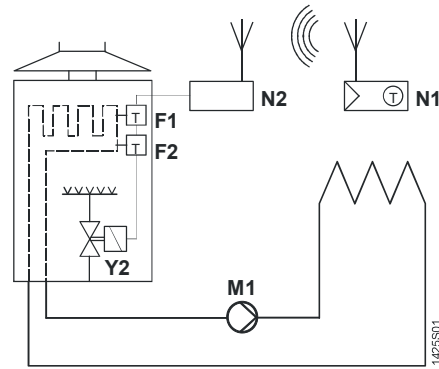
| | |
|------------------------|----------|
| Weight | 0.152 kg |
| Color of housing front | RAL9003 |

*) The documents can be downloaded from <http://siemens.com/bt/download>.

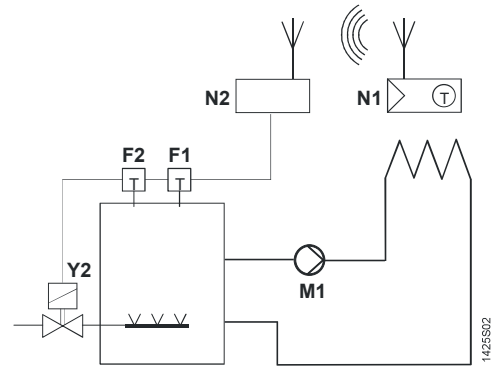
Connection diagrams



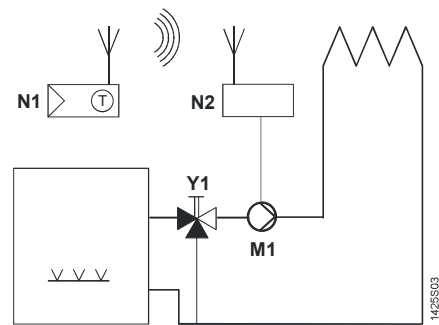
⚠ L – N AC 230 V / Lx – Nx AC 24...230 V



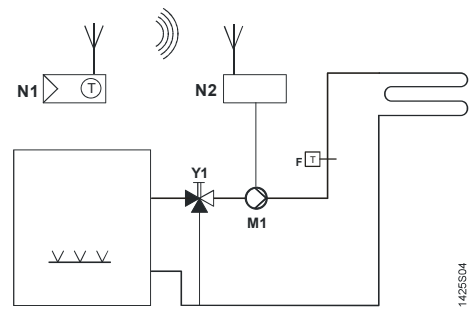
Room thermostat with direct control of a gas-fired wall-hung boiler



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



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



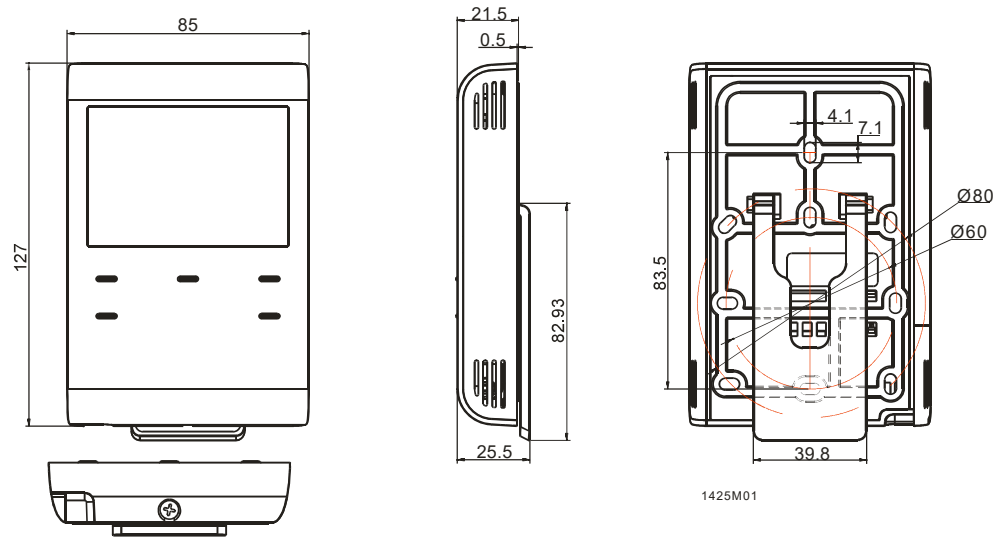
Room thermostat with direct control of a hydronic floor heating system

- F1 Thermal reset limit thermostat
- F2 Safety limit thermostat
- M1 Circulating pump
- N1 RDE100.1RF room thermostat
- Y1 3-port valve with manual adjustment
- Y2 Magnetic valve

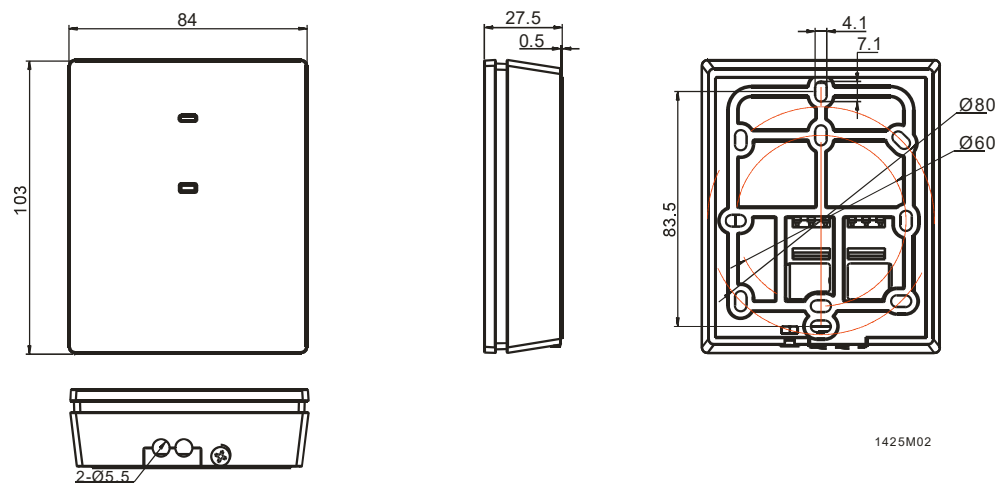
Dimensions

Dimensions in mm

Room thermostat RDE100.1RF



Receiver RCR100RF



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