



## Room thermostat

## RAA21..

Adjustable for heating only or cooling only

- **2-position control**
- **Switching voltage AC 24...250 V**

### Use

The RAA21.. room thermostat is used in heating only or cooling only systems to maintain the selected room temperature.

Typical use:

- Residential buildings
- Light industrial buildings

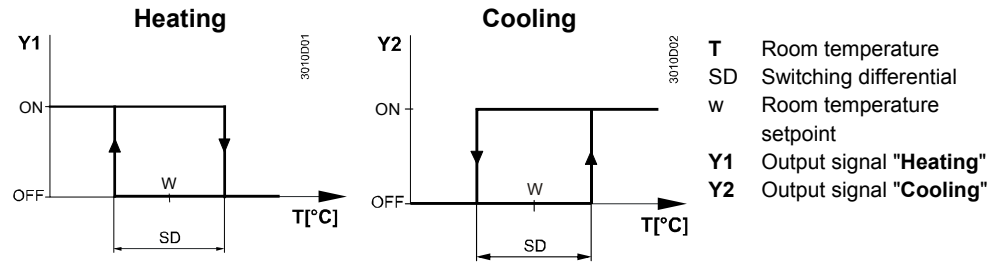
In conjunction with

- zone valves or thermal valves
- gas or oil burners
- fans
- pumps

### Functions

The RAA21.. room thermostat has separate outputs for heating only and cooling only. If the room temperature falls below the selected setpoint, the heating contact will close. If the room temperature exceeds the selected setpoint, the cooling contact will close.

## Function diagrams



## Type summary

Functionality	Product no. (ASN)
Room thermostat for heating or cooling mode Switching voltage AC 24...250 V	RAA21

## Equipment combinations

Description	Product no. (ASN)	Data sheet
Motoric on / off actuator	<b>SFA21...</b>	4863
Thermal actuator (for radiator valves)	<b>STA21...</b>	4893
Thermal actuator (for small valves 2.5 mm)	<b>STP21...</b>	4878

## Accessories

Description	Product no. (ASN)
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

## Technical design

Key features of the RAA21.. room thermostat:

- 2-position control
- Gas-filled diaphragm

## Adjustments

The required temperature setpoint is selected with the setting knob on the front of the thermostat.

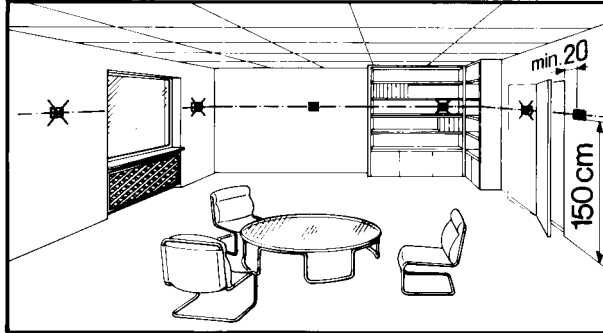
The setpoint setting range can be mechanically limited by means of setpoint limiters under the unit cover.

## Notes

### Mounting, installation and commissioning

The thermostat should be located where the room 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 thermostat can be fitted to most commercially available recessed conduit boxes or directly on the wall.

Only authorized personnel may open the unit to perform service.

The unit must be isolated from the mains supply before opening.

When installing the unit, fix the baseplate first, then hook on the thermostat body and make the electrical connections. Then, fit the cover and secure it (also refer to separate mounting instructions).

The thermostat must be mounted on a flat wall.

The local electrical regulations must be complied with.

If there are thermostatic radiator valves in the reference room, set them to their fully open position.

The room thermostat is maintenance-free.

The diaphragm is filled with environment-friendly gas.

The housing is made of plastic.



AC 24...250 V



### Maintenance

### Mechanical design

### Ordering

<i>Typ (ASN)</i>	<i>Partnumber (SSN)</i>	<i>Description</i>
RAA21	S55770-T220	Room thermostat RAA21

## Technical data

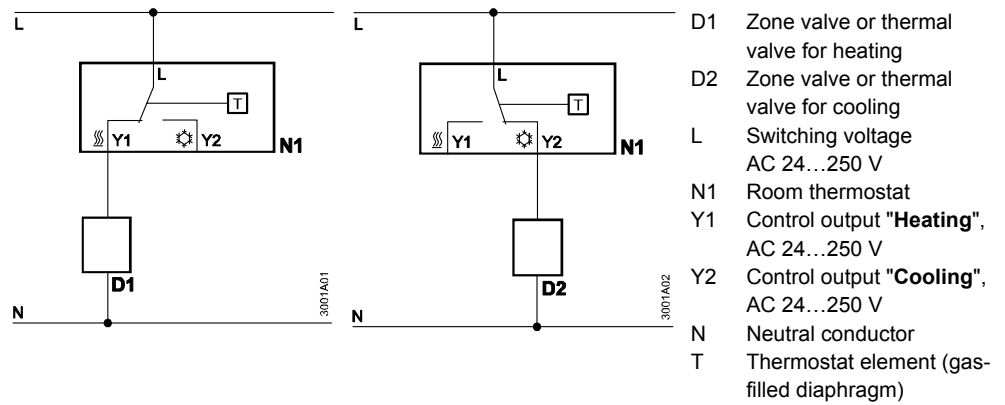
<b>Power</b>	Switching capacity	
	Voltage	AC 24...250 V
	Current	0.2...6(2.5) A
	Frequency	50 or 60 Hz
	Screw terminals for	2 x 1.5 mm <sup>2</sup> (min. 0.5 mm <sup>2</sup> )
<b>Operational data</b>	Switching differential SD	≤1 K
	Setpoint setting range	8...30 °C
<b>Environmental conditions</b>	Operation	To IEC 721-3-3
	Climatic conditions	Class 3K5
	Temperature	0...50 °C
	Humidity	<95% r.h.
	Pollution degree	Normal, to EN 60730-1
	Transport / storage	To IEC 721-3-2
	Climatic conditions	Class 2K3 / 1K3
	Temperature	-20...50 °C
	Humidity	<95% r.h.
	Mechanical conditions	Class 2M2
<b>Industry standards</b>	Electromagnetic compatibility	
	Emissions (Residential, business and commercial)	EN 55014
	 -Conformity	
	EMC guidelines	2004/108/EC
	Low voltage directive	2006/95/EC
	 -Conformity	
	Australian EMC Framework	CISPR 14-1: 2009
	Radio Interference Emission Standard	
	Environmental compatibility	
	The product environmental declaration	2002/95/EC (RoHS)
	Safety standard	II to EN 60730-1
	Degree of protection of housing	IP30 to EN 60529
	Weight	0.14 kg (RAA21)
	Color	White, NCS S 0502-G (RAL 9003)

## Disposal



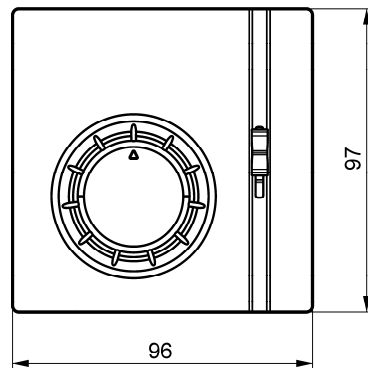
*Dispose of the device as electronic waste in compliance with European directive 2002/96/EEC (WEEE) and not as municipal waste. Observe all relevant national regulations and dispose of the unit correctly. Observe all local and applicable laws.*

## Connection diagrams

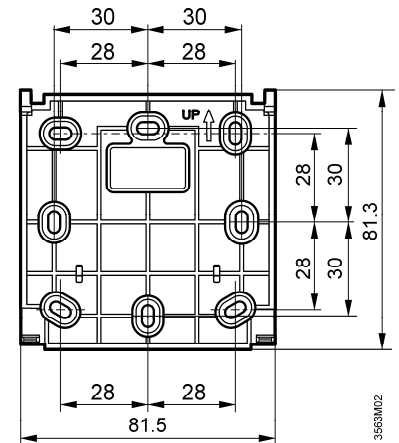


## Dimensions

**Room thermostat**



**Baseplate**



## Remarks

### Heating:

Because of the unavoidable self heating effects of the electrical current, any loads of more than 3 Amperes connected to the unit can influence the control behavior and temperature accuracy in a negative way.

### Cooling:

Because of the unavoidable self heating effects of the electrical current, any loads of more than 1 Amperes connected to the unit can influence the control behavior and temperature accuracy in a negative way.

**de** Installationsanleitung

**en** Installation Instructions

**fr** Instructions d'installation

**it** Istruzioni di montaggio

**nl** Installatie-aanwijzing

**zh** 安装说明书

**es** Instrucciones de montaje

**pt** Instruções de montagem

**sv** Installationsanvisning

**fi** Asennusohje

**da** Installationsvejledning

**el** Οδηγίες Εγκατάστασης

**sk** Návod na montáž

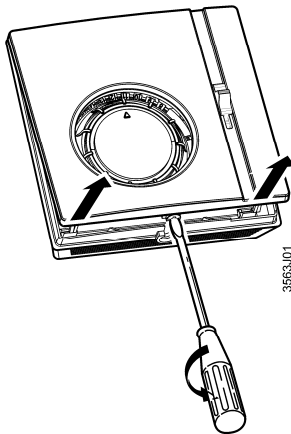
**cs** Montážní list

**pl** Instrukcja montażu

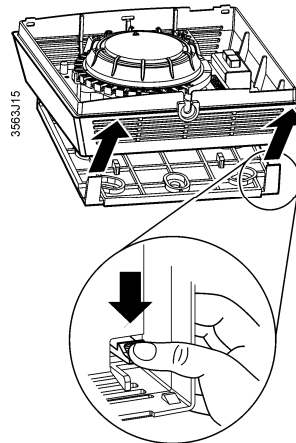
**hu** Telepítési leírás

## RAA...

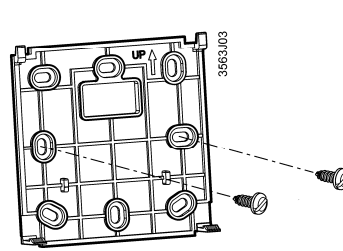
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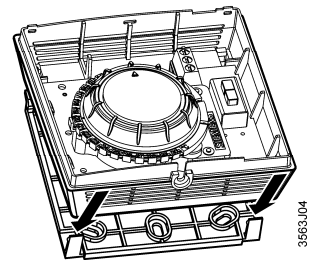
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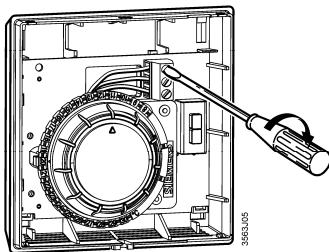
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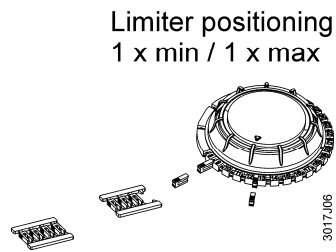
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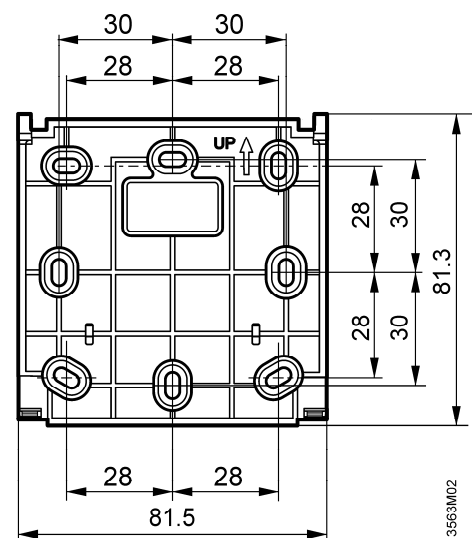
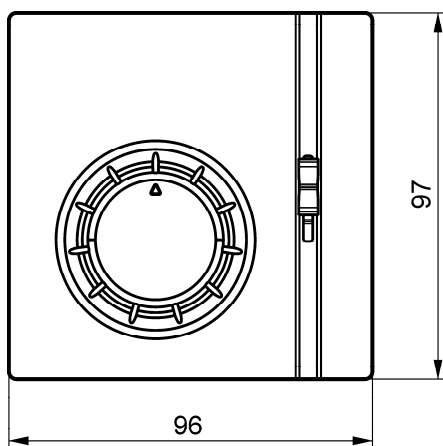
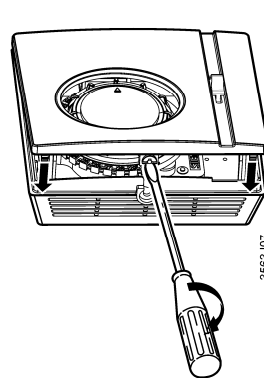
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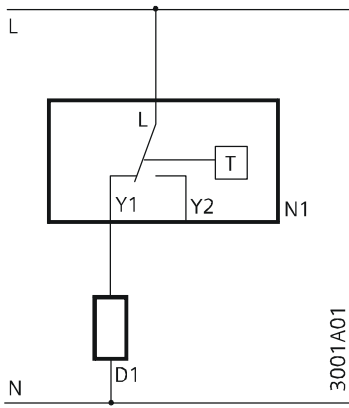


Dimensios in mm

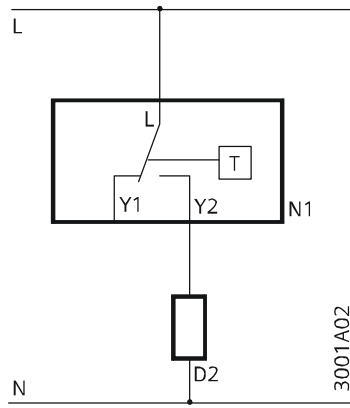
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### RAA11



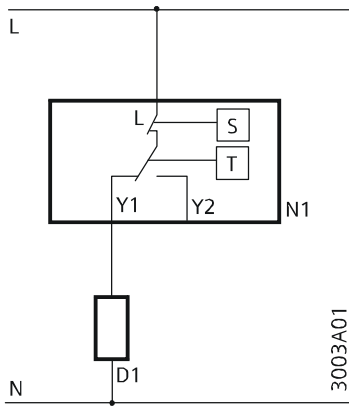
3001A01



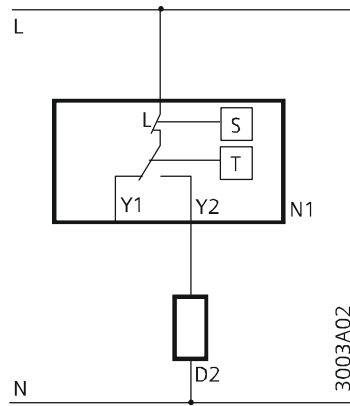
3001A02

- D1 Zone valve or thermal valve for heating
- D2 Zone valve or thermal valve for cooling
- L Switching voltage  
AC 24...250V
- N1 Room thermostat
- Y1 Control output  
"Heating", AC 24...250V
- Y2 Control output  
"Cooling", AC 24...250V
- N Neutral
- T Thermostat element  
(gas-filled diaphragm)

### RAA31



3003A01



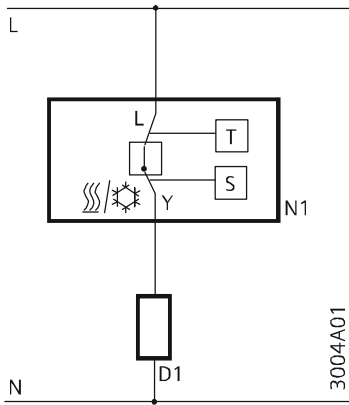
3003A02

- D1 Zone valve or thermal valve for heating
- D2 Zone valve or thermal valve for cooling
- L Switching voltage  
AC 24...250V
- N1 Room thermostat
- S ON/OFF switch
- Y1 Control output  
"Heating", AC 24...250V
- Y2 Control output  
"Cooling", AC 24...250V
- N Neutral
- T Thermostat element  
(gas-filled diaphragm)

RAA31 - Heating mode

RAA31 - Cooling mode

### RAA41



3004A01

- D1 Zone valve or thermal valve for heating
- L Switching voltage  
AC 24...250V
- N1 Room thermostat
- S Selector for Heating / OFF / Cooling
- Y Control output  
"Heating", AC 24...250V
- T Thermostat element  
(gas-filled diaphragm)