



RAA31



RAA31.16



RAA31.26

Room Thermostats

RAA31..

Adjustable room thermostat for heating only **or** cooling only systems

- Room thermostat with manual ON/OFF switch
- Two-position control
- Switching voltage AC 24...250 V

Use

The RAA31.. 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, thermal valves
- gas or oil burners
- fans
- pumps

Functions

The front of the unit carries an ON/OFF switch.

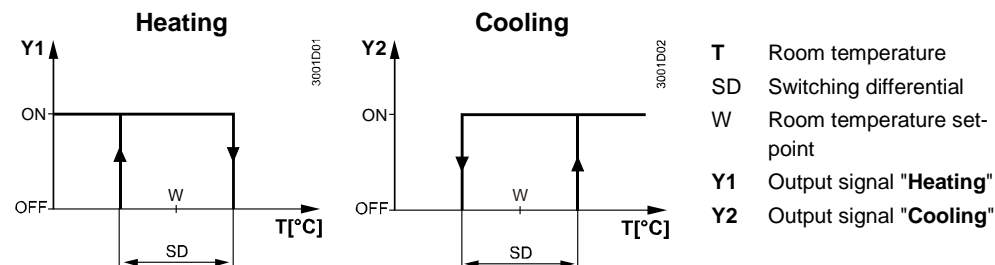
OFF

In the OFF position, the input voltage is physically separated from the output voltage.

ON

The RAA31.. 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 | Order number (ASN) |
|---|--------------------|
| Thermostat for heating or cooling application with ON/OFF switch Operating voltage AC 24...250 V | RAA31 |
| Thermostat for heating or cooling application with ON/OFF switch and operation mode indication (LED) Operating voltage AC 230 V + /-10 %. | RAA31.16 |
| Thermostat for heating or cooling application with ON/OFF switch and operation mode indication (LED) and independent ON/OFF switch Operating voltage AC 230 V +/-10 %. | RAA31.26 |

Equipment combinations

| Type of unit | Type reference | Data sheet ¹⁾ |
|---|----------------|--------------------------|
| Motoric on/off actuator | SFA21... | 4863 |
| Electric actuator (for small valves) | SFP21... | 4865 |
| Thermal actuator (for radiator valve) | STA21... | 4877 |
| Thermal actuator (for small valve 2.5 mm) | STP21... | 4878 |

¹⁾ The documents can be downloaded from <http://siemens.com/bt/download>.

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 |

Technical design

Key features of the RAA31.. room thermostat:

- Two-position control
- Manual ON/OFF switch
- Gas-filled diaphragm

Adjustments

The required temperature is selected by a setpoint adjuster on the front of the thermostat.

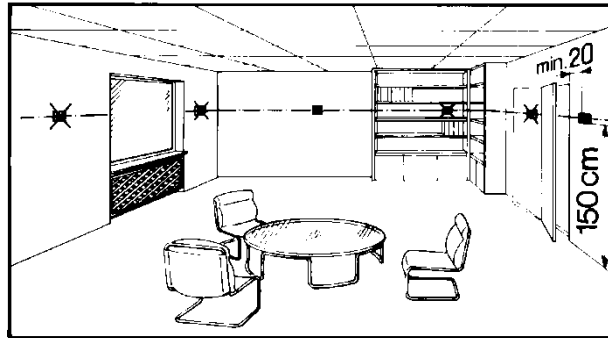
The setpoint setting range can be mechanically limited by means of setpoint limiter under the cover.

Notes

Mounting, installation and commissioning

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

Only authorised 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 base plate 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.



Warning:
AC 24...250 V!



Warning!

No internal line protection for supply lines to external consumers (Y1, Y2)

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.

Maintenance

The room thermostat is maintenance-free.

Mechanical design

The diaphragm is filled with environmentally friendly gas.

The thermostat housing is made of plastic.

Ordering

| Type (ASN) | Part number (SSN) | Description |
|------------|-------------------|--------------------------|
| RAA31 | S55770-T221 | Room thermostat RAA31 |
| RAA31.16 | S55770-T222 | Room thermostat RAA31.16 |
| RAA31.26 | S55770-T223 | Room thermostat RAA31.26 |

Disposal



The devices are considered electronics devices for disposal in term of European Directive 2012/19/EU and may not be disposed of as domestic waste.

- Dispose of the device via the channels provided for this purpose
- Comply with all local and currently applicable laws and regulations.

Technical Data

Power



| | |
|-------------------------------|-------------------------------------|
| Switching capacity | |
| Voltage | |
| • RAA31... | AC 24...250 V / 50 or 60 Hz |
| • RAA31.16 and 31.26 | AC 230 V +/-10 % |
| Power consumption of each LED | 0.5 VA (Only RAA31.16 and RAA31.26) |
| Current | 0.2...6 (2.5) A |
| Frequency | 50 or 60 Hz |



No internal fuse

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

Operational data

| | |
|---------------------|---|
| Screw terminals for | 2 x 1.5 mm ² (min. 0.5 mm ²) |
|---------------------|---|

| | |
|---------------------------|------|
| Switching differential SD | ≤1 K |
|---------------------------|------|

| | |
|------------------------|-----------|
| Setpoint setting range | 8...30 °C |
|------------------------|-----------|

Environmental conditions

| | |
|---------------------|-----------------------|
| Operation | to IEC 60721-3-3 |
| Climatic conditions | Class 3K5 |
| Temperature | 0...50 °C |
| Humidity | <95 % r.h. |
| Pollution degree | Normal, to EN 60730-1 |

| | |
|-----------------------|------------------|
| Transport / storage | to IEC 60721-3-2 |
| Climatic conditions | Class 2K3/1K3 |
| Temperature | -20...50 °C |
| Humidity | <95 % r.h. |
| Mechanical conditions | Class 2M2 |

Industry standards

| | |
|--------------------|--------------------------|
| EU Conformity (CE) | CE1T3561xx ¹⁾ |
|--------------------|--------------------------|

| | |
|----------------|-----------------------------|
| RCM Conformity | CE1T3561en_C1 ¹⁾ |
|----------------|-----------------------------|

| | |
|---------------------------------|------------------|
| Safety standard | II to EN 60730-1 |
| Degree of protection of housing | IP30 to EN 60529 |

Environmental compatibility

The product environmental declarations CE1E3015, CE1E3561¹⁾ contain data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

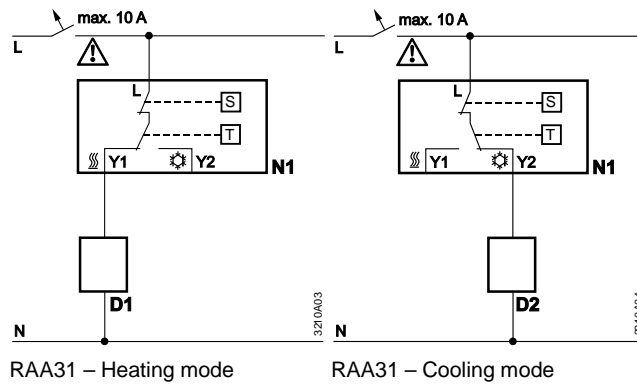
Mechanical design

| | |
|--------|---------|
| Weight | 0.14 kg |
|--------|---------|

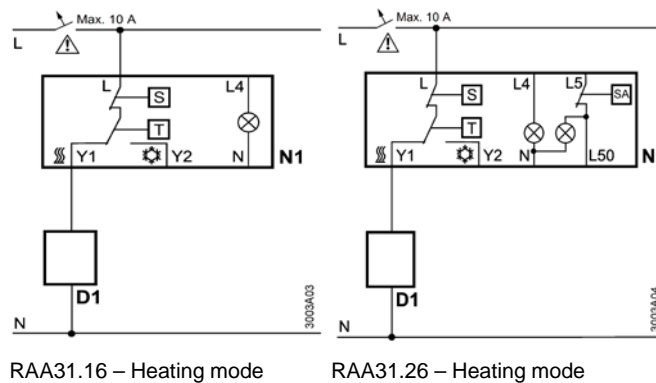
| | |
|---------------------|-------------------------------|
| Colour of top cover | white, NCS 50502-G (RAL 9003) |
|---------------------|-------------------------------|

¹⁾ The documents can be downloaded from <http://siemens.com/bt/download>.

Connection diagrams



- D1 Zone valve or thermal valve for **heating**
- D2 Zone valve or thermal valve for **cooling**
- L Switching voltage
AC 24...250 V (RAA31 only)
AC 230 V
(RAA31.16 / 26/ only)
- N1 Room thermostat
- S ON/OFF switch
- Y1 Control output "**Heating**",
AC 24...250 V (RAA31 only)
AC 230 V
(RAA31.16 / 26 only)
- Y2 Control output "**Cooling**",
AC 24...250 V (RAA31 only)
AC 230 V
(RAA31.16 / 26 only)
- N Neutral
- T Thermostat element
(gas-filled diaphragm)

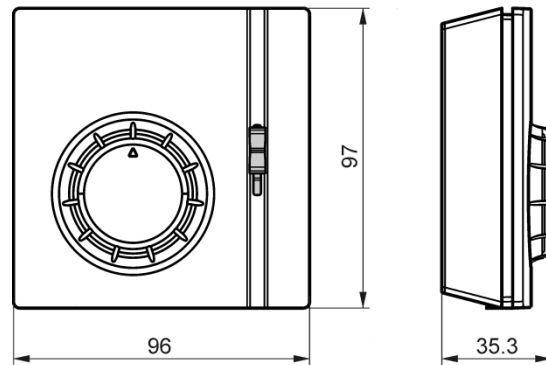


- L4, L5 Input AC 230 V
- L50 Output
- SA Auxiliary switch

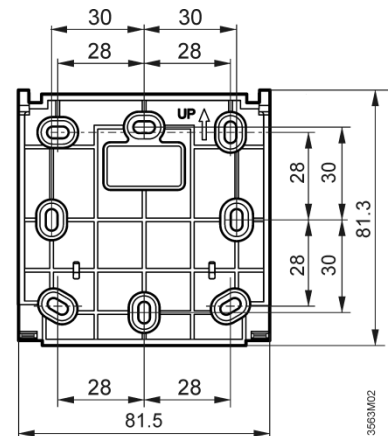
Dimensions

RAA31 and
RAA31.16

Room thermostat

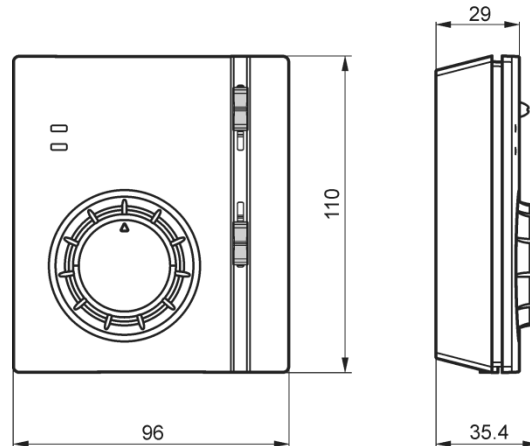


Base plate

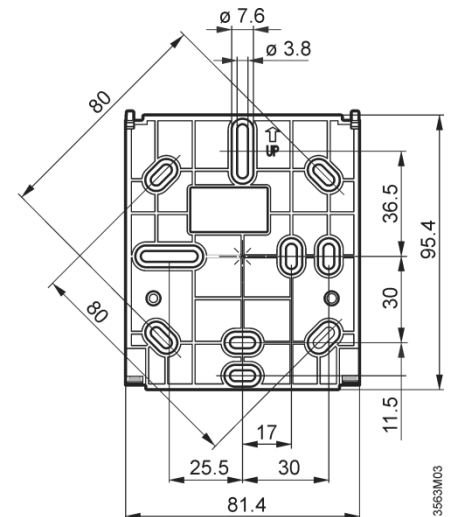


RAA31.26

Room thermostat



Base plate



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.