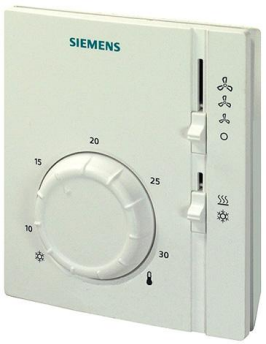


RAB 31

RAB31.1

Room Thermostats RAB31…

For four-pipe fan coils

- **Room thermostat with manual switch for heating or cooling**
- **Two-position control**
- **Manual three-speed fan switch**
- **Switching voltage AC 250 V**
- **Control output ON/OFF**

Use

The room RAB31… thermostat is used in heating or cooling systems to maintain the selected room temperature.

Typical use:
- Commercial buildings
- Residential buildings
- Light industrial buildings

In conjunction with
- zone valves
- thermal valves
- fans

Functions

Heating If the room temperature falls below the selected setpoint, the heating contact will close.

Cooling If the room temperature exceeds the selected setpoint, the cooling contact will close.

Fan speed There are two possibilities to control the fan speed:

a) Manually by means of the three - speed fan switch on the thermostat for continuous operation

b) Automatically by switching to the selected fan speed via the thermostat for controlled operation. In that case – prior to commissioning – the jumper positions corresponding to the thermostat function must be selected. There are two choices of jumper positions available on printed circuit board:

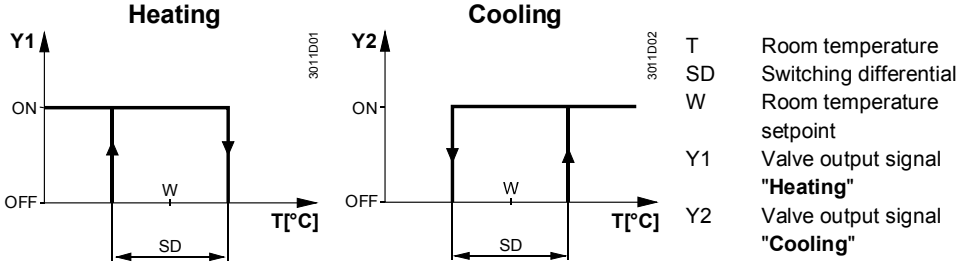
SR1 **Selected fan speed as continuous operation**

SR2 **Auto** **Fan is switched at the same time as the cooling or heating valve, depending on the switch position.**

Ventilation When the ventilation function is selected (RAB31.1) on the cover by setting the slide switch, the heating and cooling contacts are always open and the fan operates at the selected speed.

Changeover Heating or cooling is selected with a switch located on the front of the thermostat.

Function diagrams



Type summary

Four-pipe fan coil room thermostat for use with 3-speed fan, manual changeover	**RAB31**
Four-pipe fan coil room thermostat for use with 3-speed fan, manual changeover and ventilation function	**RAB31.1**

Equipment combinations

Type of unit	Type reference	Data sheet*)
Motoric on/off actuator	**SFA21..**	4863
Thermal actuator (for radiator valve)	**STA21..**	4893
Thermal actuator (for small valve 2,5 mm)	**STP21..**	4878
Electromotoric actuator for zone valve VVI46.. (2 position on / off)	**SUA21..**	4830

*) 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 112x130 mm	ARG70.2

Technical design

Key features of the RAB31... fan coil room thermostat:

- Two-position control
- Gas-filled diaphragm

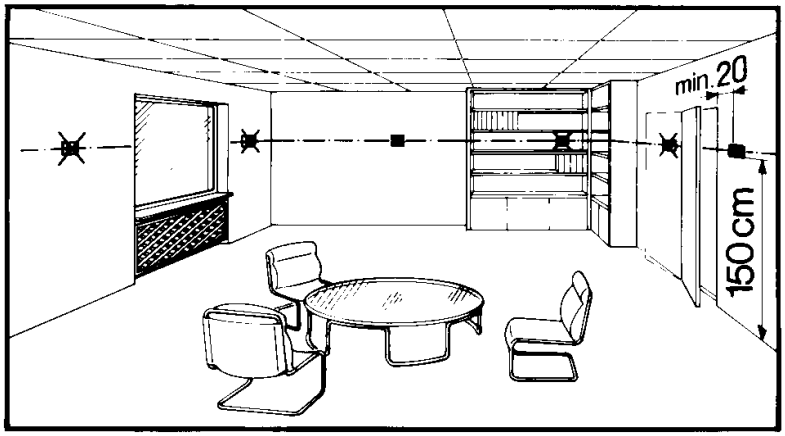
Adjustments

The required temperature can be selected by a setpoint adjuster on the front of thermostat.
The setpoint setting range can be mechanically limited by means of setpoint limiter under the cover.

Notes

Mounting, installation and commissioning

The 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.

⚠ **Caution: 250 V**

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 baseplate first then hook on the thermostat body and make the electrical connections. Then fit the cover and secure it (also refer to seperate 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.

Maintenance

The room thermostat is maintenance-free.

Mechanical design

The gas bellows is filled with environmentally friendly gas.
The thermostat housing is made of plastic.

Ordering

Typ (ASN)	*Partnumber (SSN)*	*Description*
RAB31	S55770-T229	Room thermostat RAB31
RAB31.1	S55770-T230	Room thermostat RAB31.1

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.

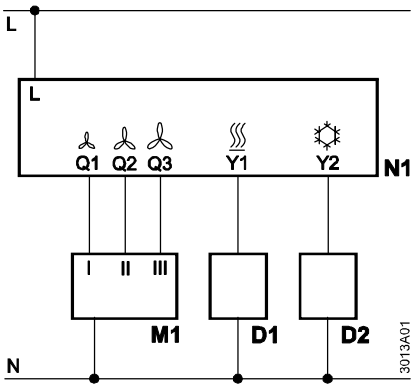
- Dispose of the device via the channels provided for this purpose
- Comply with all local and currently applicable laws and regulations.

Technical data

Power supply 	Switching capacity Voltage Current Frequency	 AC 250 V 0.2…6 (2) A 50 or 60 Hz
	Screw terminals for	2 x 1.5 mm^2 (min. 0.5 mm^2)
Operational data	Switching differential SD	≤1 K
	Setpoint setting range	8…30 °C
Environmental conditions	Operation Climatic conditions Temperature Humidity Pollution degree	to IEC 60721-3-3 Class 3K5 0…+50 °C <95 % r.h. normal, to EN 60730-1
	Transport / storage Climatic conditions Temperature Humidity Mechanical conditions	to IEC 60721-3-2 Class 2K3/1K3 -20…+50 °C <95 % r.h. Class 2M2
Industry standards	EU Conformity (CE)	CE1T3015xx *)
	RCM Conformity	CE1T3015en_C1 *)
	Safety standard Degree of protection of housing	II to EN 60730-1 IP30 to EN 60529
Environmental compatibility	The product environmental declaration CE1E3015*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	
Mechanical design	Weight	0.14 kg
	Colour	white, NCS S 0502-G (RAL 9003)

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

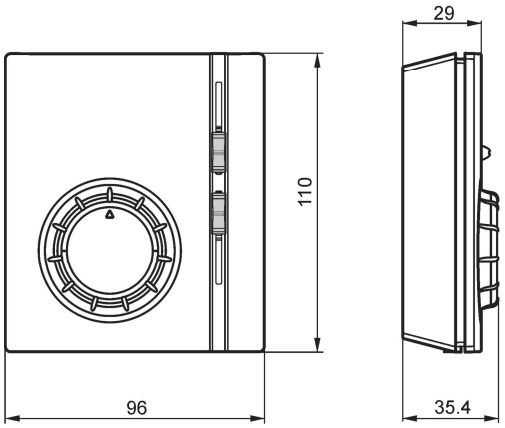
Connections diagram



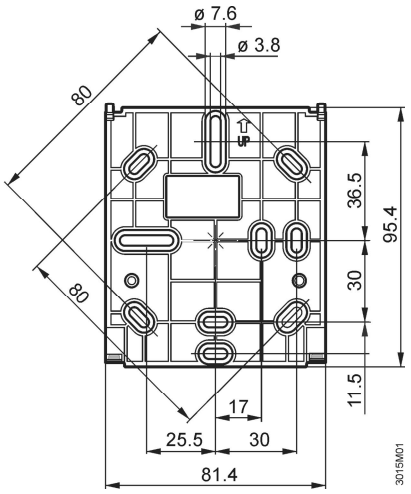
D1	Zone valve or thermal valve for heating
D2	Zone valve or thermal valve for cooling
L	Switching voltage AC 250 V
M1	3-speed fan
N	Neutral
N1	Room thermostat
Q1	Control output "Fan speed I", AC 250 V
Q2	Control output "Fan speed II", AC 250 V
Q3	Control output "Fan speed III", AC 250 V
Y1	Control output "Valve actuator **heating**", AC 250 V
Y2	Control output "Valve actuator **cooling**", AC 250 V

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.