



RAB20



RAB20.1

Room Thermostats

RAB20...

For two-pipe fan coils

- Room thermostat for heating or cooling**
- Changeover function (with external automatic aquastat)**
- Two-position control**
- Manual three-speed fan switch**
- Switching voltage AC 250 V**
- Control output ON/OFF**

Use

The RAB20... room 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
- aquastats

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 be closed.

Fan speed

There are two possibilities to control the fan speed:


- Manually by means of the three-speed fan switch on the thermostat for continuous operation
- Automatically by switching to the select fan speed via the thermostat for controlled operation. In that case – prior to commissioning – the jumper positions corresponding to the functions must be selected. There are three choices of jumper positions available on printed circuit board:

SR1  **Select fan speed as continuous operation**

SR2 **Auto**   **Fan is switched with the cooling valve**

SR3 **Auto**   **Fan is switched with the heating valve**

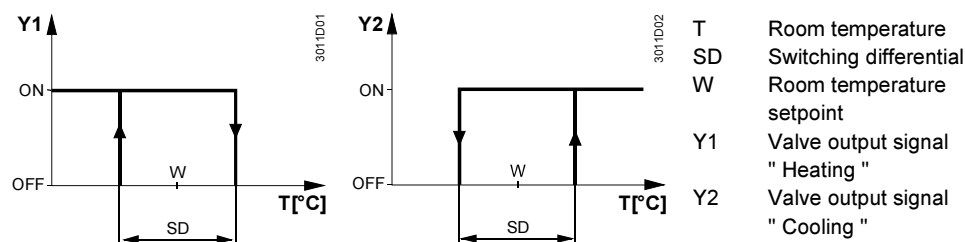
Ventilation

When the ventilation function is selected  (RAB20.1 only) on the front cover of the slide switch, the heating and cooling contacts are always open and the fan operates at the selected speed.

Changeover

If required, heating or cooling can be selected externally (aquastat).

Function diagrams



Type summary

Two-pipe fan coil room thermostat for use with 3-speed fan, external (automatic) changeover

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Two-pipe fan coil room thermostat for use with 3-speed fan, external (automatic) changeover and ventilation function

RAB20.1

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

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 RAB20... 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.

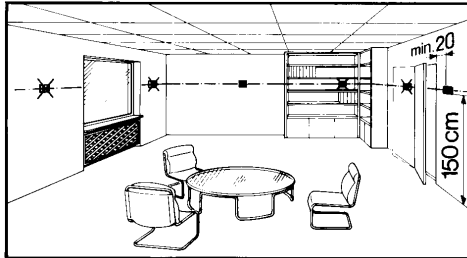
The setpoint setting range can be mechanically limited by means of setpoint limiter under the cover.

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.



Only authorised personnel may open the unit to perform service (**Caution: 250 V!**). 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.

Maintenance

The room thermostat is maintenance-free.

Mechanical design

The diaphragm is filled with environmentally friendly gas.

The thermostat housing is made of plastic.

Technical data



Power supply

Switching capacity

Voltage

AC 250 V

Current

0.2...6 (2) A

Frequency

50 or 60 Hz

Operational data

Switching differential SD

≤1°K

Setpoint setting range

8...30 °C

Environmental conditions

Operation

to IEC 721-3-3

Climatic conditions

class 3K5

Temperature

0...+50 °C

Humidity

<95 % r.h.

Pollution degree

normal, to EN 60730

Transport / storage

to IEC 721-3-2

Climatic conditions

class 2K3/1K3

Temperature

-20...+50 °C

Humidity

<95 % r.h.

Mechanical conditions

class 2M2

Packaging

single packaging / min. order 20 pieces

Norms and standards

CE conformity to
 Low voltage directive
 Product standard

73/23/EEC and 93/68/EEC
 EN 60730

C^{N474} C-Tick conformity to
 EMC emission standard

AS/NSZ 4251.1:1994

Safety standard
 Degree of protection

II to EN 60730
 IP30 to EN 60529

Screw terminals for

2 x 1.5 mm² or 1 x 2.5 mm², min. (0.5 mm²)

Weight

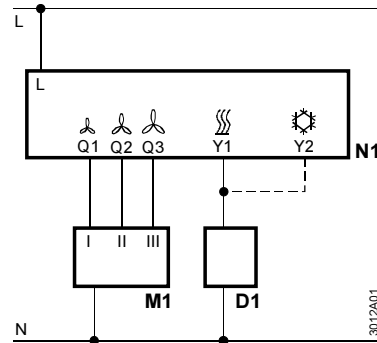
0.14 kg

Colour

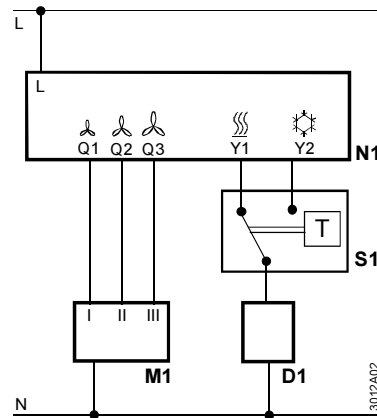
white, NCS S 0502-G (RAL 9003)

Connection diagram

Heating or cooling



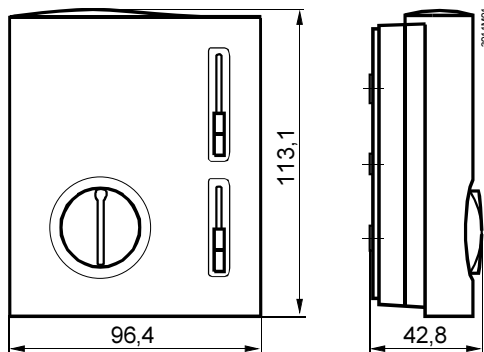
Changeover for heating or cooling with external aquastat



- D1 Zone valve or thermal valve for heating or cooling
- L Switching voltage AC 250 V
- M1 3-speed fan
- N Neutral
- N1 Room thermostat
- S1 Aquastat e.g. Z182 / RYT182
- 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

Unit



Baseplate

