

RTC

Room unit for temperature control



QUICK FACTS

- Adjustable set point for room temperature
- LED for indicating the operating mode
- Duct temperature sensor available as an accessory
- Modifiable outputs from 0-10 V to on/off
- Presence detector connection
- 0-10 V outputs can be limited to allow for setting min./max. airflows and positions.

GENERAL

The RTC is used for regulating the temperature in rooms with a demand controlled ventilation system. The room thermostat can control the air flow via a REACT air volume controller or a radiator for heating. Available in a pre-programmed version, RTC BLB, for control of the BLB mixing box.

Technical description

Design

The RTC has a temperature sensor that is influenced by the temperature of the surrounding air. Jumpers are fitted to the printed circuit card. The jumpers are preset, as standard, for 0-10 V output signals. The position of these jumpers can be changed to enable time-proportional on/off control of each output, which could be suitable for controlling radiator heat. On the front is a setpoint dial with ± 3 degree increments from a mid setting of 22 °C.

The RTC is also fitted with an LED that indicates the operating mode: red = heating, green = cooling, or off = switched off or in the dead band. Thanks to built-in intelligence, the outputs are exercised (on/off setting) once every 24 hours so that valves will not seize during the time of the year when they are not normally used. By connecting a presence detector, the dead band can be extended so that no unnecessary cooling will take place while the room is unoccupied. The RTC has limitations of the settings that allow for setting of min/max air flows or positions.

The RTC BLB variant is prepared for regulating air mixture with a dead band on one output. This is appropriate for controlling a type BLB mixing box.

Materials and finish

The enclosure is made of white ABS plastic.

Special version

The RTC can be modified by refitting the jumpers on the printed circuit card, thus changing the outputs from a 0-10 V to an on/off function. Besides this standard product, there are a number of advanced versions with more available settings for min./max. limiting the 0-10 V output signal or setting a mixture control function. For further particulars please contact your nearest Swegon sales representative.

Accessories

- RTCT 1, duct temperature sensor for installation in an extract air duct.
- DETECT O, presence detector for resetting the dead band between heating and cooling.
- LUNAb T-CU, hand-held micro terminal

Maintenance

Soiled products can be cleaned by dusting or wiping with a damp cloth.

Declaration

Declaration of Construction Materials is available for download from www.swegon.com.

Sizing

RTC room thermostat

Ambient temperature:	
In-operation	+5 °C – 40 °C
Relative humidity	max. 90% RH, (non-condensing)
Electrical data:	
Supply voltage	24 V AC $\pm 10\%$
Power consumption	1 VA
Outputs: 0-10 V max load	10 mA
Outputs 24 V on/off max.load	48 VA
Center position for temperature setting	22 °C
P-band cooling increments	1.0 °C
P-band heating increments	1.5 °C
Dead band, presence	1.0 °C
Dead band, no occupants (with DETECT O)	4.0 °C
Enclosure:	
Degree of protection	IP 30
Sensor, thermistor	1800 Ω at 25 °C
Accuracy, sensor, 0- till +35°C	± 0.3 °C
Time constant	approx 7 min.

RTCT 1 duct temperature sensor

Stem	\varnothing 6 mm x 115 mm
Duct connection	Flange
Prot. class	IP 54
Cable	LIYY 2 x 0,14
Range	-50...70 °C
Accuracy	$\pm 0,2$ °C (at 25 °C)
Electrical data:	
Sensor, thermistor	10 K Ω at 25°C

Installation

The RTC should preferably be installed between 1.5 and 2 m above the floor, on any wall in the room. It must not be subject to direct sunlight. See Figure 1.

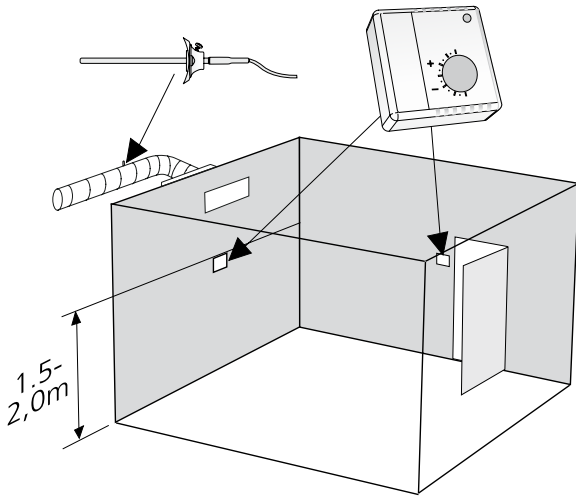


Figure 1. Suitable locations for the RTC room thermostat.

Wiring Diagram

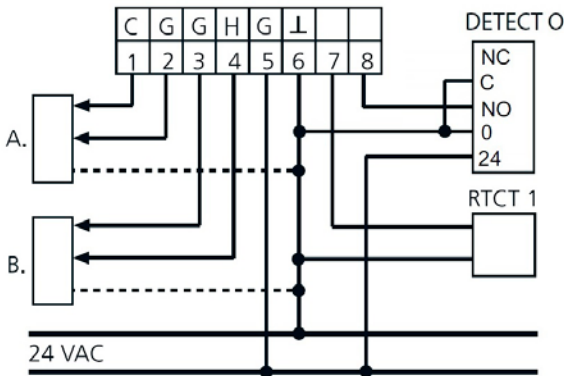


Figure 2. Connections are to be made according to the wiring diagram for the product that the RTC is connected to.

A. = Cooling control
B. = Heating control

Planning

The RTC room temperature controller can be utilised in simpler installations together with the REACT or BLB. In premises where room RTCs are not desirable, a duct temperature sensor accessory is available that can easily be wired to the thermostat's terminal block. The RTC can then be preferably mounted directly on the REACT air flow controller for minimizing wiring. A presence detector that increases the dead band between heating and cooling from 1 to 4°C can be connected to the RTC.

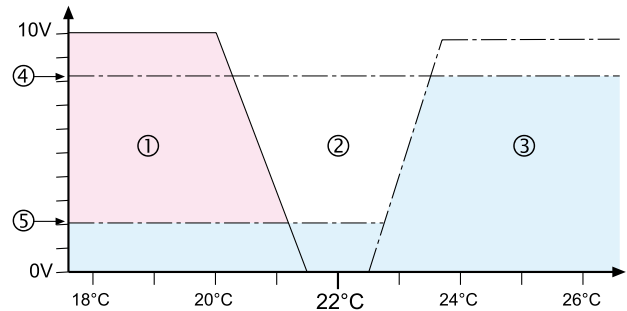


Diagram 1. Functional diagram for comfort mode without presence sensor or activated presence sensor. Centre position 22°C can be changed by ±3°.

Explanations of Diagrams 1 and 2:

1. Heating with a radiator.
2. Dead band.
3. Cooling by air.
4. Preset max. output signal, cooling by air.
5. Preset min. output signal, cooling by air.

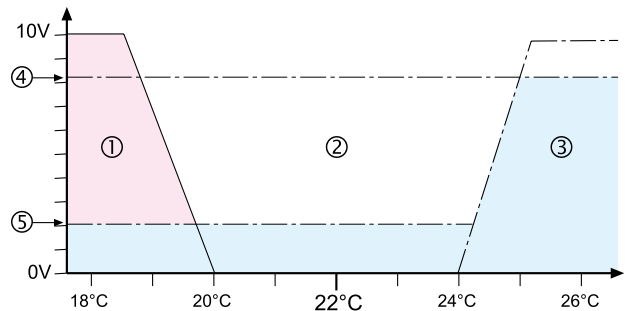


Diagram 2. Functional diagram in economy mode, presence sensor not activated.

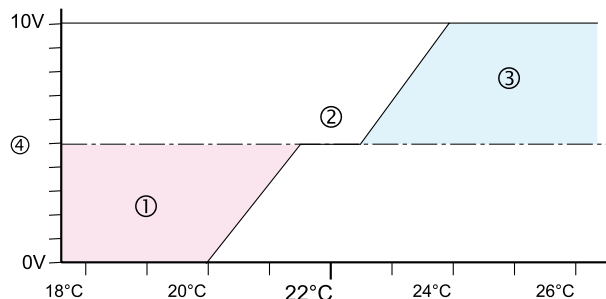


Diagram 3. Functional diagram for mixing control by means of the BLB wired to output C.

Key to Diagram 3

1. Heating phase.
2. Dead band.
3. Cooling phase.
4. Output signal for mixing control.

Dimensions and weights **Order key**

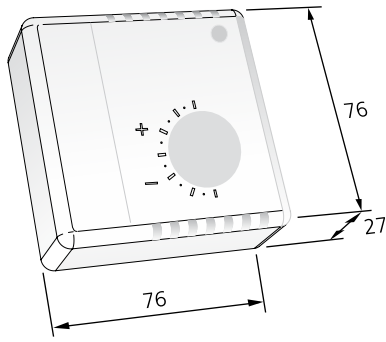


Figure 3. The RTC has brackets for mounting on a Ø 60 mm appliance box.

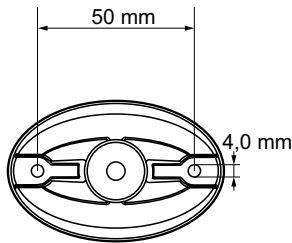
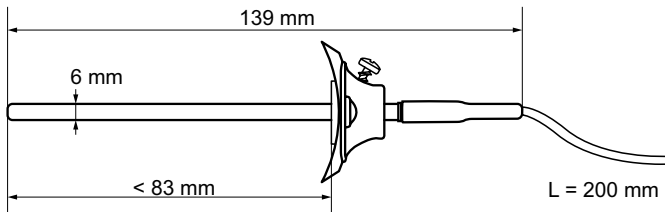


Figure 4. RTCT 1 duct temperature sensor.

Product

Room controller	RTC	b	-a
Version:			
Variant:			
1 = Standard			
2 = Variant BLB			

Accessories

Duct temperature sensor	RTCT 1
Hand-held micro terminal	LUNAb T-CU

Specification text

GT XX

Swegon's type RTC room unit for temperature control with the following functions:

- Built-in temperature sensor
- Adjustable set point for room temperature
- Adjustable min./max. signals
- LED for indicating the operating mode
- Separate duct temperature sensor

Type: RTCb 1 xx items