RTC

Room thermostat 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 preprogrammed version, RTC BLB, for control of the BLB mixing box.

Swegon

Technical description

Design

- RTC is a room thermostat that provides a stable and comfortable room temperature.
- Default setting for 0-10 V output signal.
- Possibility to change settings via jumpers to enable time-proportional on/off control of each output to control radiator heating.
- Setpoint dial with ±3 degree increments from a midpoint of 22 °C.
- LED indicates the operating mode:
  - Red = Heating
  - Blue = Cooling
  - Off = Switched off or in the dead band
- Exercising of outputs (on/off mode) once per day, to avoid valves from jamming.
- If a presence detector is connected, the dead band can be extended so that unnecessary cooling does not take place if the room is unoccupied.
- The RTC has setting limitations on the output signal that allow for setting of min/max air flows or positions.
- RTC is available in a design for mixing box BLB.
- RTC for BLB is prepared for regulating air mixture with a dead band on one output.

Materials and finish

The enclosure is made of white ABS plastic.

Accessories

- RTCT 1, duct temperature sensor for installation in an extract air duct. See figure 4, page 4.
- DETECT O, presence detector for resetting the dead band between heating and cooling.
- Hand-held terminal LUNA d T-CU according to figure 1. Refer to the Instructions for Use LUNA d, chapter 6, for operation of the hand-held terminal.

Maintenance

Dirty products may be cleaned only by wiping with a cloth to remove dust.

Declaration

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

Figure 1. Accessories, LUNA d T-CU

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 ±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	Ø 6 mm x 115 mm
Duct connection	Flange
Prot. class	IP 54
Cable	LIYY 2 x 0,14
Range	-50...70 °C
Accurancy	± 0,2 °C (at 25 °C)
Electrical data:	
Sensor, thermistor	10 KΩ 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 2.

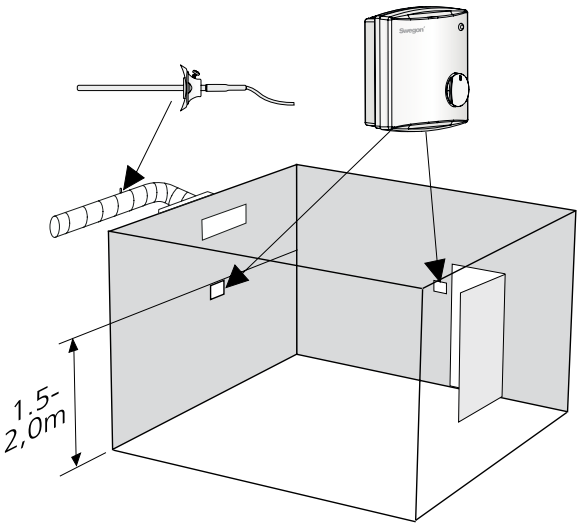


Figure 2. Suitable locations for the RTC room thermostat.

Wiring Diagram

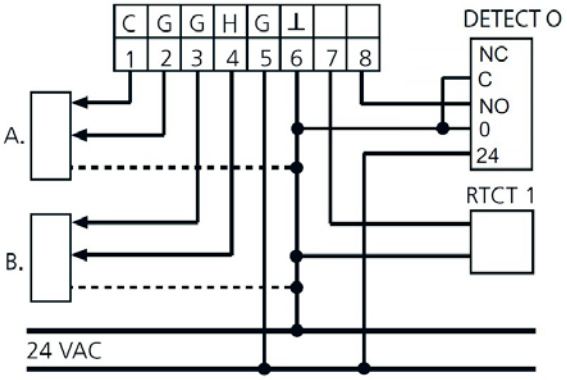


Figure 3. Connections are to be made according to the wiring diagram for the product that the RTC is connected to.
A. = Cooling control
B. = Heating control

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 perferably 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.

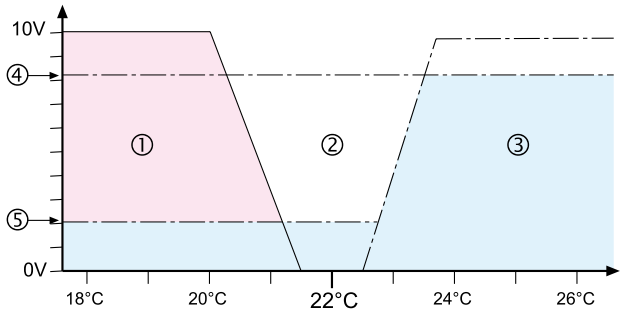


Diagram 1. Functional diagram for comfort mode without presence sensor or activated presence sensor. Centre position 22°C can be changed by ±3°.
Explanations of Diagrams 1 and 2:
1. Heating with a radiator. 2. Dead band. 3. Cooling by air.
4. Preset max. output signal, cooling by air.
5. Preset min. output signal, cooling by air.

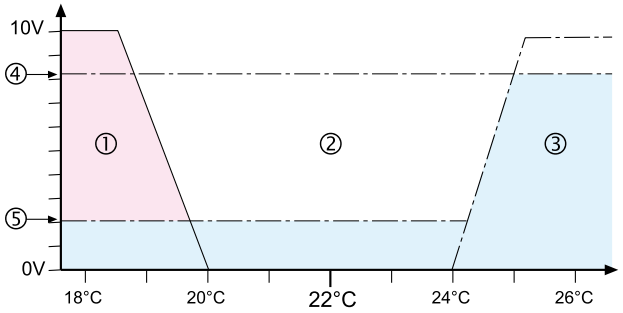


Diagram 2. Functional diagram in economy mode, presence sensor not activated.

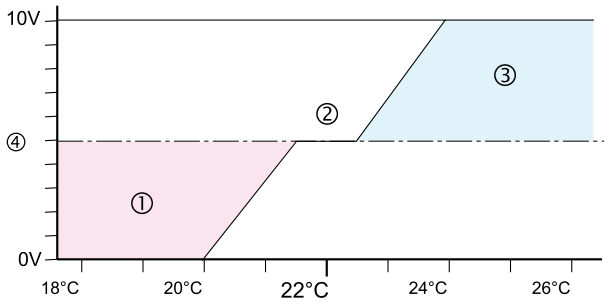


Diagram 3. Functional diagram for mixing control by means of the BLB wired to output C.
Key to Diagram 3
1. Heating phase.
2. Dead band.
3. Cooling phase.
4. Output signal for mixing control..

Dimensions and weights

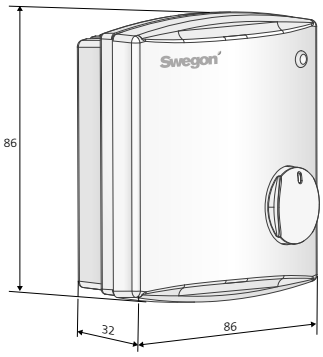
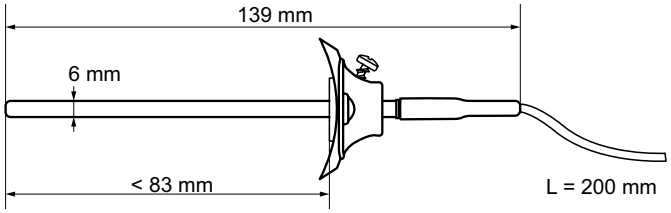


Figure 4. The RTC has brackets for mounting on a Ø 60 mm appliance box.



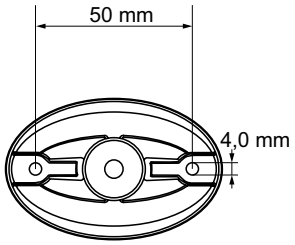


Figure 5. RTCT 1 duct temperature sensor.

Order key

Product

Room controller	RTC	c	-a
Version:			
Variant:			
RTCc Room thermostat			
RTCc Room thermostat BLB			

Accessories

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

Specification text

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

Type:	RTCc room thermostat	xx items