

RTX-..(C)

Room transmitter intended for temperature, CO₂ level, humidity level and air quality control, with communication



The RTX-..(C) is a range of room transmitters designed for environmental control, including temperature regulation, via a controller running an application. They can also be used together with Regin's system controllers. The RTX-..(C) units can be connected to several different products and could, for example, be used to control an air handling unit running a ventilation application.

The RTX-..(C) room transmitters have communication possibilities and can be configured via the Regin:GO app or Application tool 2.

- ✓ Elegant and slim design, which provides the ability to seamlessly install in design-critical environments
- ✓ Display showing relevant information and which enables visibility on a distance. Easy to keep clean
- ✓ Combined Modbus, BACnet & EXOline (model specific)
- ✓ Built-in sensors, which measure all relevant data in the same casing. Such as, temperature, humidity, CO₂, VOC, and PIR
- ✓ Easy configuration, with Bluetooth® communication using the Regin:GO app
- ✓ Timer function for Extended run, RTX-T-CDE model
- ✓ Removable terminal, which simplifies troubleshooting
- ✓ 0-10 V and PT1000 inputs for temperature (RTX-THCV-CDX)
- ✓ Scaling sensors on output (RTX-THCV-CDX)
- ✓ Communicating models with extra I/O (RTX-THCV-CDX)

Application

The RTX-..(C) room transmitters have a discrete design and are easy to use with an intuitive graphical LED matrix front. They are suitable in buildings where you want optimal comfort and low energy consumption, for example offices, schools, shopping centres, airports, hotels and hospitals.

Function

Depending on which features one prefers for the handling of the unit, there is a number of different options such as CO₂ control, backlit display, etc. All units have a built-in temperature sensor.

In a room, the RTX-..(C) room transmitter can measure and detect the following, depending on model:

- ✓ Temperature
- ✓ CO₂ level
- ✓ Relative humidity level
- ✓ Motion of a user
- ✓ Air quality (VOC)

All features are specified under the section *Models*.

Models with and without display

For models with a display, the user interface features a dynamic LED matrix (25 x 5 pixels) housed in a transparent plastic casing, allowing the display to be clearly visible.



Note! LED display is not available on all models. For more information, see section *Models*.

The display can be configured to shut off.

The RTX-..(C) room transmitter user interface is shown in Fig. 1.

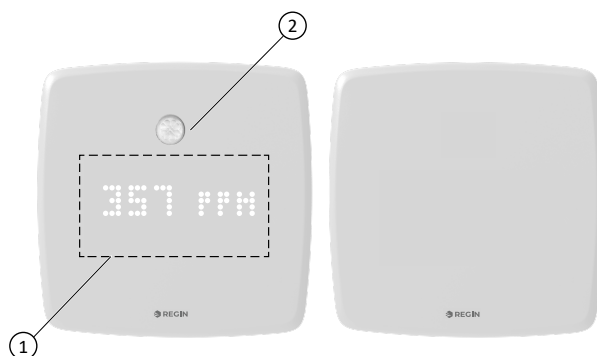


Fig. 1 RTX-..(C) room transmitter with display and PIR sensor / RTX-..(C) room transmitter without display

① LED matrix, running display board

② PIR sensor (on selected models)

Communication and configuration - Bluetooth®

The room transmitters can be connected to a central SCADA-system via RS485 (EXOnline or Modbus, or BACnet) and configured using the configuration tool Application tool 2.

Configuration is also supported by communication via Bluetooth®, and the Regin:GO app.

Application tool 2 can be downloaded free of charge from Regin's home page www.regincontrols.com. For more information about the Application tool 2, contact Regin.

The Regin:GO app can be downloaded from *App store* (iPhone and iPad) or *Google play* (Android).

Timer for Extended run

On the RTX-T-CDE model, you can press the **[Timer]** button (1) on the front cover, to activate the *Timer* function. This feature allows you to extend the operation of an AHU beyond its scheduled runtime.

When you press the **[Timer]** button, a timer appears on the display. The default timer step setting is 15 minutes per button press and 7 steps, resulting in the sequence (15, 30, 45, 60, 75, 90, off). In the Regin:GO app or in Application tool 2 (in the **Display and menus** page), the step size can be changed up to 120 minutes for each press of the **[Timer]** button and the **Number of steps** can be set up to 25 steps. In the display the time interval counts down showing the remaining time in minutes (min.).

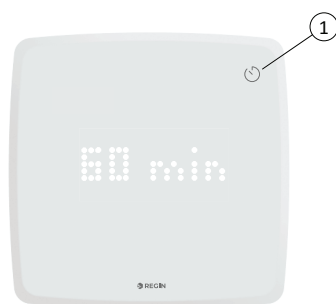


Fig. 2 Timer button

① **Timer button**

Installation

The transmitter should be mounted in a location with good air circulation where it can be expected to give a representative reading. It can be mounted on a appliance box or directly on the wall.

The modular design with a separate bottom plate for wiring makes the whole RTX series easy to install and commission.

The room transmitters consist of the following parts:

- ✓ Front and PCB assembly
- ✓ Backplate assembly (including terminal)



Note! Backplate assemblies are sold separately.

- ✓ Low (for mounting over wall box), RCX-BL
- ✓ Mid (for on-wall mounting), RCX-BM

The RTX-..(C) room transmitter consists of the main part (article number RTX-T[H,C,V,P]-[C,D,E,X]) and the backplate assembly, with terminal (RCX-BL or RCX-BM). The low backplate (RCX-BL) is used when mounted over an appliance box, meaning less space for cables needed. The backplate can be changed using the mid-size backplate (RCX-BM), to be ordered separately. The mid-size backplate (RCX-BM) is selected when mounting directly on the wall is needed.

For detailed installation instructions, see the RTX-..(C) Instruction and the RTX manual, to be found at www.regincontrols.com.

Technical data

Supply voltage	24 V AC (50...60 Hz) or DC (tolerance: 18...28 VAC, 18..30 VDC)
Display	25 x 5 pixels
Power consumption	< 2.5 VA
Ambient temperature	0...50 °C
Ambient humidity	Max. 90 % RH
Storage temperature	-20...+70 °C
Terminal blocks	Pluggable screw terminal, for cable cross-section ≤ 2.1 mm ²
Protection class	IP30
Material casing	Polycarbonate (PC) (white)
Colour	Cover: RAL9003 (signal white) Backplate: RAL9003 (signal white)
Measuring range, temperature	0...50 °C
Temperature accuracy	±0.5°C at 15...30°C
Humidity sensor accuracy	2,5 %RH @ 25°C full range
CO₂ sensor	0...40000 ppm Update frequency: 5 s
CO₂ sensor accuracy	±50 ppm + 5 % (measured value, MV) @400...2000 ppm
PIR sensor, detection range	Detection angle 110°, distance 5 m at 8 °C temp. difference = up to 7 m at 4 °C temp. difference = up to 5 m (Target conditions: movement 1.9 m/s, object size approx. 700 x 250 mm)  Note! Depending on the temperature difference between the target and the surroundings, detection range will change.
VOC sensor	AQI; range 0...500 (Air Quality Index)
Mounting	Room/Wall
Weight	115 g
Dimensions	with backplate assembly: 94.6 x 94.6 x 21 mm

Communication

RS485	For EXOline (with automatic detection), Modbus (with automatic detection), or BACnet. 8 bits, 1 or 2 stop bits. Odd, even or no parity.
Communication speed	9600, 19200, 38400, or 76800 bps (all protocols)
Communication cable length, maximum	1200 m, with repeater
Bluetooth® Low Energy	Bluetooth® communication.

Conformity

Hereby, Regin declares that the radio equipment type RTX-..(C) is in compliance with Directive 2014/53/EU.

RTX-..(C) complies with EN IEC 60730-1, as a class A control.

This radio equipment device is approved for use in all countries within the European union.



This product carries the CE-mark. More information is available at www.regincontrols.com.

Models

Table 1 Room transmitter models (with communication)

Article	Display	Communi- cation	Tempera- ture sensor	Humidity sensor	CO ₂ sensor	VOC sensor	PIR sensor	Timer for Extended run
RTX-TH-C		✓	✓	✓				
RTX-TC-C		✓	✓		✓			
RTX-THCV-C		✓	✓	✓	✓	✓		
RTX-THCV-CD	✓	✓	✓	✓	✓	✓		
RTX-T-CDE	✓	✓	✓					✓
RTX-TP-C		✓	✓				✓	
RTX-THCV-CDX	✓	✓	✓	✓	✓	✓		

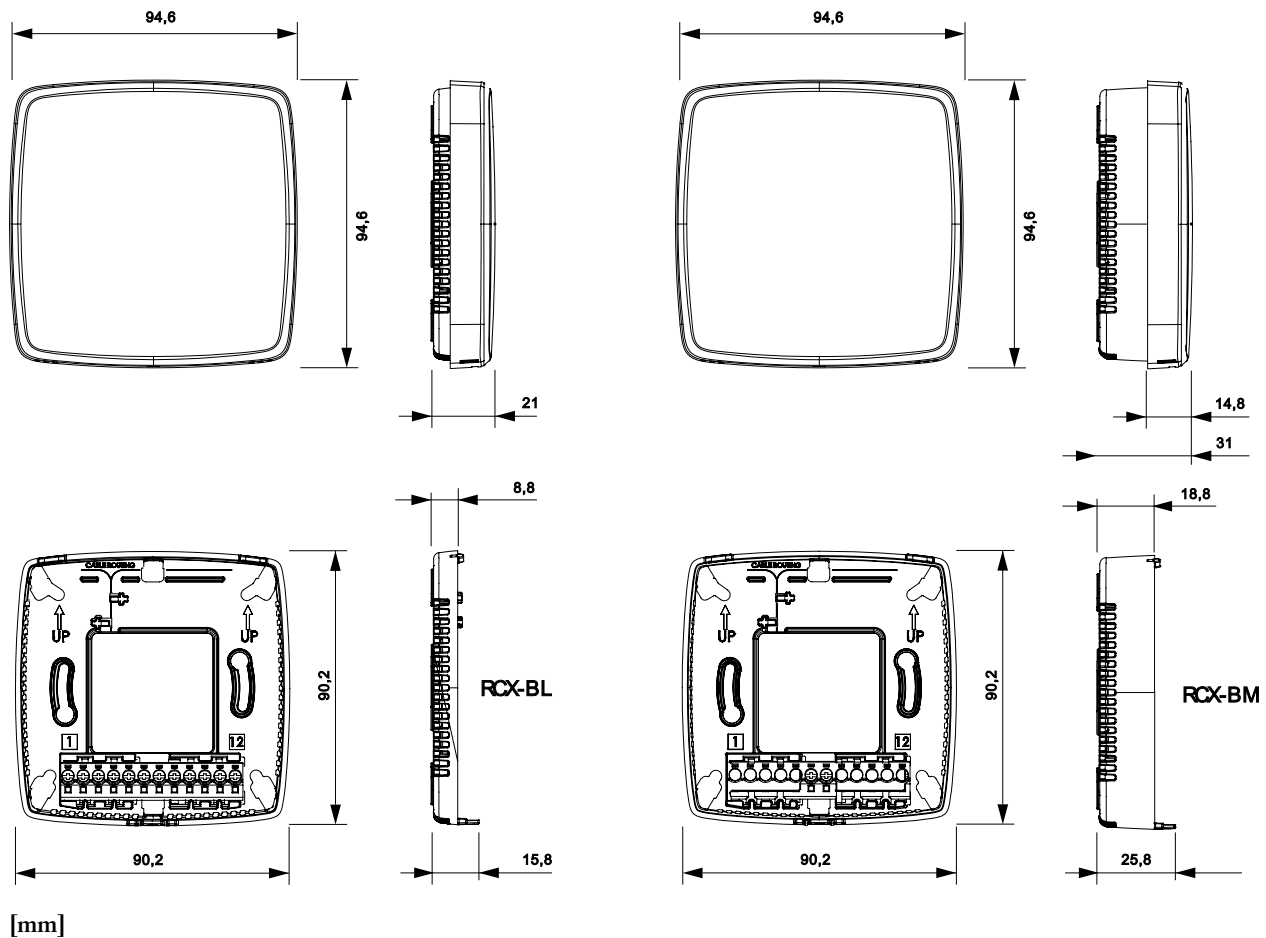
Table 2 Backplate assembly models

Article	Description
RCX-BL	Backplate Low (signal white)
RCX-BM	Backplate Medium (signal white)



Note! The backplate assemblies are sold separately.

Dimensions



Wiring

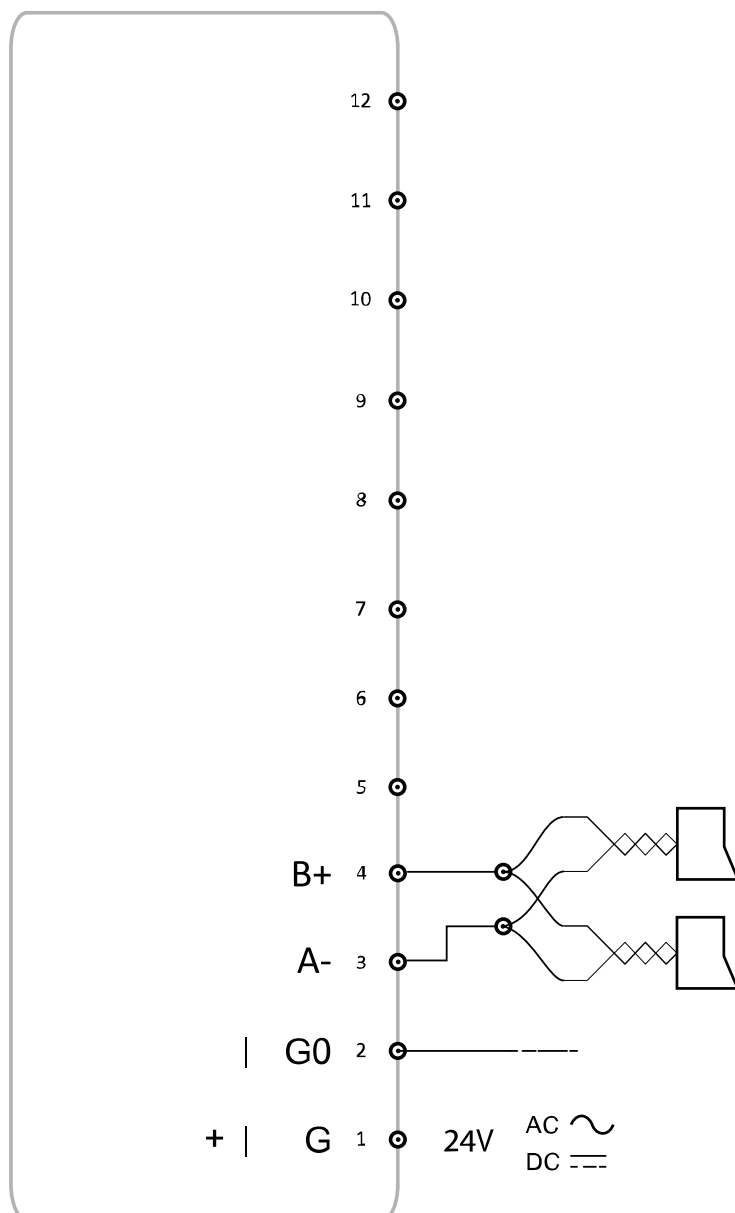


Fig. 3 General wiring example



Note! See the RTX manual for specific model wiring diagrams.

Documentation

All documentation can be downloaded from www.regincontrols.com.