



RCF-230D

Room controller with display and fan button

RCF-230D is a room controller intended to control heating or cooling in fan-coil applications.

- Simple installation
- Power supply 230 V AC
- On/off or 3-point control

RCF-230D is a controller with a button for controlling a three-speed fan (fan-coil) and a display. It has supply voltage 230 V AC, which means that a relay module is not required for controlling fans and actuators.

Applications

The controller is suitable in buildings where you want optimal comfort and low energy consumption, for example offices, schools, shopping centres, airports, hotels and hospitals etc.

Design

The controllers have a modern design which has been inspired by our award-winning Regio range of controllers. The standard colour is white, but the frame and centre can be received in a number of different colours on inquiry. The units can be combined, offering many different effects.

Built-in sensor

The controller has a built-in sensor. An external Pt1000-sensor can also be used.

On/off or 3-point control signal

RCF-230D can control 3-point valve actuators and/or 230 V AC on/off actuators.

- Backlit display
- Input for occupancy detector or window contact and change-over function

Occupancy detection

It is possible to connect an occupancy detector to the digital input in order to select between Comfort and Economy. The temperature is then controlled according to requirement, which saves energy and keeps the temperature at a comfortable level.

A window contact can also be connected to the digital input.

Change-over function

RC-DO has an input for change-over that automatically resets output DO4 to operate with heating or cooling function. A sensor of type PT1000 can be connected to the input and be mounted so that it senses the temperature on the supply pipe to the coil.

When the temperature exceeds 22°C, the output function is set to heating and when the temperature drops below 18°C, the output is set to cooling. As an alternative, a potential-free contact can be used. The input function can be set to NO/NC.

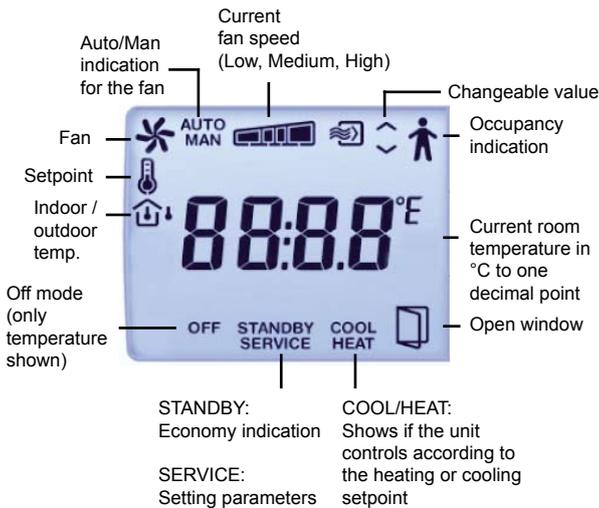
To ensure satisfactory functioning using sensor, the system must have continuous primary circuit circulation. When the change-over function is not used, the input must be left disconnected.

Easy to install

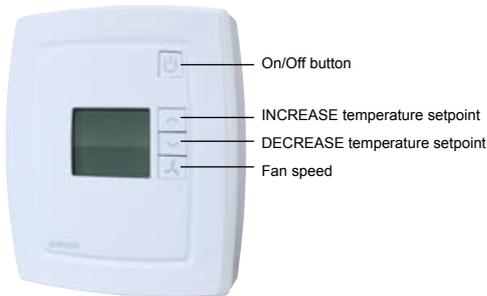
The modular design with a separate bottom plate for wiring makes the controller easy to install and commission. The bottom plate can be put into place before the electronics are installed. Mounting is directly on the wall or on an electrical connection box.

Display handling

The display has the following indications:



It is possible to set different parameter values in a parameter menu in the display, using the buttons on the controller. You change parameter values with the INCREASE and DECREASE buttons and confirm changes with the On/Off button.



Control modes

RCF-230D has control modes Heating and Cooling in sequence or seasonal switching between heating and cooling (change-over).

Operating modes

There are four different operating modes, Comfort, Economy (Standby), Off and Window. Switching between these modes is performed locally.

Comfort: The room is in use and is therefore in a comfort mode. Heating and cooling have a smaller neutral zone NZC. An occupancy detector can be connected to the DI in order to select between Comfort and Economy. Switching between Comfort/Economy and Off can also be done via the On/Off button. Comfort/Economy is selected via the parameter list.

Economy (Standby): The room is in an energy save mode and is not used at the moment. This can for example be during nights, weekends, evenings etc. The controller is prepared to change operating mode to Comfort if someone enters the room. Heating and cooling have a larger neutral zone NZE.

Off: The controller does not heat or cool and the fan is inactive, unless mould protection has been selected, in which case the fan will still run.

Window: The controller is in Off mode but the display is still lit. The window contact is connected to the DI and must be configured.

On/Off button

By pressing the On/Off button, RCF-230D will switch between Off mode and Comfort/Economy mode.

Setpoint

The setpoint is set using the INCREASE/DECREASE buttons. Parameter 23 determines what is shown in the display. Refer to the parameter list for details. When the setpoint adjustment is shown, the basic setpoint is 22°C.

Fan control

RCF-230D has a fan button. When you press the button, a symbol is shown in the display for 10 seconds. During this time, it is possible to change the fan speed using the INCREASE/DECREASE buttons.

The controller has the following positions:

- I Manual position with low speed
- II Manual position with medium speed
- III Manual position with high speed
- Auto Automatic control of the fan speed to maintain desired room temperature. The current fan speed depends on the heating or cooling demand and the settings for each speed.

In operating modes Off and Window, the fan is stopped, regardless of the setting in the display.

Technical data

Supply voltage	230 V AC $\pm 10\%$, 50/60 Hz
Power consumption, internal electronics	3 W, Class II construction
Ambient temperature	0...50°C
Storage temperature	-20...+70°C
Ambient humidity	Max 90 % RH
Protection class	IP20
Pollution degree	2
Overvoltage category	3
Display	LCD with background illumination
Built-in temperature sensor	NTC type, measuring range 0...50°C, accuracy $\pm 0,5^\circ\text{C}$ at 15...30°C
Terminal blocks	So-called lift type for a maximum cable area 2.1 mm ²
Sensor calibration	-10 K...10 K, FS: 0 K
Material, casing	Polycarbonate, PC
Colour	Cover: Polar white RAL9010 Bottom plate: Light gray <i>Is also available in other colours on inquiry, contact Regin for more information.</i>
Mounting	Indoor, wall mounting
Pollution degree	2
	This product conforms to the EMC and LVD requirements in the European harmonised standards EN 60730-1:2000 and EN 60730-2-9:2002 and carries the CE mark.

Inputs

External room sensor	PT1000-sensor, 0...50°C. Suitable sensors are Regin's TG-R5/PT1000, TG-UH/PT1000 and TG-A1/PT1000.
Change-over alt. potential-free contact	PT1000-sensor, 0...100°C. Suitable sensor is Regin's TG-A1/PT1000.
Occupancy detector alt. window contact	Closing potential-free contact. Suitable occupancy detector is Regin's IR24-P.

Outputs

Fan control	3 outputs for speed I, II, III and Auto, 230 V AC, max 3 A fan-coil
Valve actuator	
Valve actuator	300 mA max, 20 A max 20 ms
Control	Heating or cooling
Actuator exercise	FS = 23 hours interval
Setpoint settings in the display	5...35°C

Wiring

10	L	230 V AC Line	Power supply
11	NC	Not connected	
12	N	230 V AC Neutral	Power supply (internally connected to terminal 13)
13	N	Fan-coil common / 230 V AC Neutral	Common fan-coil connector (internally connected to terminal 12)
20	DO1	Fan-coil output 1 for fan control	Relay, 230 V AC*, 3 A
21	DO2	Fan-coil output 2 for fan control	Relay, 230 V AC*, 3 A
22	DO3	Fan-coil output 3 for fan control	Relay, 230 V AC*, 3 A
30	NC	Not connected	
31	DO4	Digital output 4 for heating/cooling	Digital output. 230 V AC, max 300 mA. Max 20 A during 20 ms.
32	CDO45	Common DO4 & 5	Common connection for digital outputs 4 and 5
33	DO5	Digital output 5 for cooling	Digital output. 230 V AC, max 300 mA. Max 20 A during 20 ms.
40	DI	Digital input	Potential-free window contact or occupancy contact. Configurable for NO/NC.
41	0 V	Analogue ground	
42	AI	Analogue input	External PT1000 instead of the internal NTC
43	UI	Universal input	Change-over input. Potential-free switch (configurable for NO/NC) or PT1000.
44	0 V	Analogue ground	
50	0 V	Analogue ground	
51	NC	Not connected	
52	NC	Not connected	
53	NC	Reserved for future use	
54	NC	Reserved for future use	

Dimensions



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