SIEMENS

en Operating Instructions

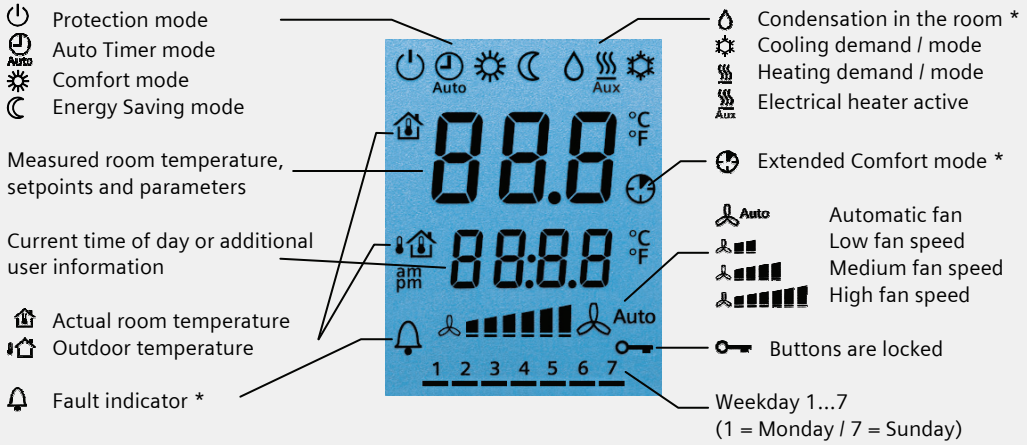
RDF301, RDF301.50

RDF301 / RDF301.50 – the room thermostat with KNX communications allows you to set the ideal room temperature. The thermostat provides Comfort, Energy Saving, and Protection mode and can operate in Auto timer mode using a time schedule provided via bus.

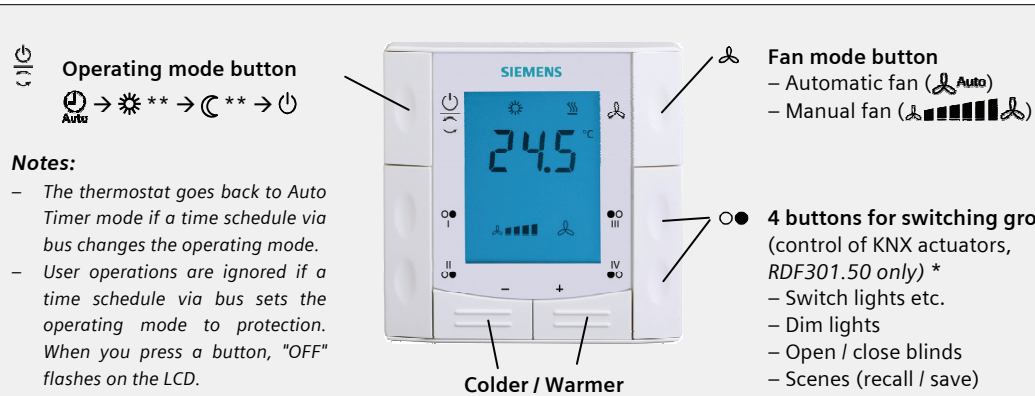
The fan operates either in Auto mode or at a speed selected in Manual mode.

You can either take advantage of the thermostat's factory settings or adjust it as needed.

Display



Operation and settings



* *Needs to be configured by your HVAC installer*
** *Needs to be enabled via parameter P02*

Change room temperature

+ / –	Press + or – to increase or decrease the current room temperature setpoint for **Comfort** mode. The thermostat changes to Comfort . The setting range is 5...40 °C, unless limited by parameters P09 and P10.

Adjust fan speed / fan mode

	Press the button until you reach the desired fan mode.
Auto	In Auto mode, the thermostat automatically selects the fan speed based on setpoint and actual room temperature. The fan continues to run at low speed (factory setting) after the room temperature reaches the setpoint .
	In manual mode, the fan always runs at the speed that you select:
	Low fan speed
	Medium fan speed
	High fan speed
	For a *single-speed fan*, you can change the mode between Auto and .

Change thermostat operating

	Press operating mode button to change the operating mode display.
	In protection mode, the plant stops operating. However, if the room temperature drops below 8 °C, heating is switched on to protect the room against frost. Your HVAC installer can change the frost protection limit and set a heat protection limit as needed: *Changes made by installer:* Frost protection: ..... °C; Heat protection: ..... °C
	In Comfort mode, the thermostat maintains the room temperature on the setpoint which can be readjusted using the + and – buttons.
	In Energy Saving mode, the room temperature is maintained at a lower or higher setpoint, thus saving energy and money. Adjust parameters P11 and P12 to change the preselected setpoints. The thermostat can be set to Energy Saving mode *either* by pressing the operating mode button if enabled (P02 = 2), *or* via an external signal (switch or KNX bus command) such as window contact, keycard or presence detector.
Auto	In Auto timer mode, the thermostat automatically switches between Comfort and Energy Saving mode according to the time schedule via KNX bus.

Change from heating to cooling mode

/	Changeover between cooling and heating is either *automatic* using a heating / cooling changeover sensor or a remote changeover switch or via instruction from the central management station via KNX bus, or *manual* by pressing operating mode button . No changeover is possible if the thermostat is configured for *cooling only* or *heating only*, (see parameter P01).
Display for automatic changeover or heating only / cooling only:	
	Heating valve is open
	Cooling valve is open
Display for manual changeover:	
	Thermostat is in heating mode
	Thermostat is in cooling mode

Temporary timer to extend the Comfort mode

When Energy Saving operating mode is active, press operating mode button to temporarily return to Comfort mode. symbol appears. Press operating mode button again to stop the timer.
You can only extend Comfort mode if parameter P02 = 1.
Duration * : P68 = 0...360 min, factory setting = 0 min.

Operate switching groups

Use buttons I, II, III and IV to operate KNX actuators *.
The following functions are available:

- **Switching**: Toggle on/off with 1 button or on/off with 2 buttons (I + II or III+IV). "ON" or "OFF" is displayed.
- **Dim lights** with 2 buttons (I+II or III+IV):
  On/off with a short pulse (<0.5 s); "ON" or "OFF" is displayed.
  Brighter/darker with a long pulse (>1 s); "dI" is displayed.
- **Operate blinds** with 2 buttons (I+II or III+IV):
  A long pulse (>1 s) starts the up/down motor; "UP" or "down" is displayed.
  A short pulse (<0.5 s) stops the motor or slightly adjusts the position of blinds; "ON" or "OFF" is displayed.
- **Scene I, II, III, or IV**: A scene can be used to recall certain states of all actuators involved, as well as to save new states as needed. E.g. different dimmed lights and blinds positions you consider adequate for certain events / times.
  A short pulse (<0.5 s) starts the scene. "CALL" is displayed.
  A long pulse (>3 s) saves the actual position of all actuators involved as adjusted previously; "SAVE" is displayed.

Button lock

Press operating mode button for 5 seconds to lock or unlock the buttons if manual button lock is configured (parameter P14 = 2).
The thermostat automatically locks the buttons 20 seconds after the last adjustment if "Auto lock" is configured (P14 = 1).
The key symbol indicates locked buttons.

Reminder to clean filters and for external faults

FIL * This message reminds you to clean your HVAC equipment filters.
It is displayed after ..... "fan operating hours" and disappears when the thermostat is set to Protection ( ).

AL1 * These messages inform you on external faults *:
AL2 * **AL1 :** ..... **AL2 :** .....

Note: Energy saving mode

The energy saving setpoints are factory-set to 15 °C for heating and 30 °C for cooling. Use parameters P11 and P12 to adjust the values.
Important: You can set these setpoints to **OFF**; the thermostat then is inactive, i.e. no protective heating or cooling function.
Risk of frost!

** Needs to be configured by your HVAC installer*

Commissioning

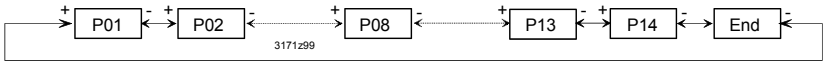
You can adjust a number of different control parameters to adapt the thermostat to your system and optimize control performance. You can do this during operation either via the buttons on the thermostat or using a commissioning tool.

Control parameters

Proceed as follows to change the most important control parameters:
(Your HVAC installer can set additional parameters)

+ / –

1. Press the **–** and **+** buttons simultaneously at least 3 seconds.
   Release, and within 2 seconds, press **+** again for 3 seconds. "P01" is displayed.
2. Repeatedly press the **+** or **–** button to select the required parameter.



3. Press **+** and **–** simultaneously. The current value of the selected parameter begins to flash, allowing you to change the value by repeatedly pressing **+** or **–**.
4. The next parameter is displayed when you press **+** and **–** again simultaneously.
5. Repeat steps 2 to 4 to display and change additional parameters,.
6. Press **+** or **–** until "End" is displayed, and then press **+** and **–** simultaneously to save the change and exit parameter entry mode.

Parameter	Description	Factory setting	Setting range	Adj
P01	Control sequence	*2-pipe*...: [0...3] 1 (Cooling only) *4-pipe*:. [2...4] 4 (Heating&Cooling)	0 = Heating only 1 = Cooling only 2 = Manual H or C 3 = Auto Changeover 4 = Heating & cooling	
P02	Mode selection by user via operating mode button ** Without time schedule via KNX, Auto is equal to Comfort.	1 (Auto **, Protection)	1 = Auto **, Protection 2 = Auto **, Comfort, Energy Saving, Protection	
P04	Selection of °C or °F	°C	0 = °C 1 = °F	
P05	Sensor calibration	0.0 °C	– 3 ... +3 °C	
P06	Standard temperature display	0 (Room temp.)	0 = Room temperature 1 = Setpoint	
P07	Additional user information	0 (no display)	0 = No display 1 = Temp. in °C / °F 2 = Outside temperature (via bus) 3 = Time of day (12h, via bus) 4 = Time of day (24h, via bus)	
P08	Comfort basic setpoint	21 °C	5 ... 40 °C	
P09	Minimum setpoint limitation in Comfort ($Wmin_{Comf}$)	5 °C	5 ... 40 °C	
P10	Maximum setpoint limitation in Comfort ($Wmax_{Comf}$)	35 °C	5 ... 40 °C	
P11	Setpoint of heating in Energy Saving ($Wheat_{Eco}$)	15 °C	OFF, 5 °C...$Wcool_{Eco}$	
P12	Setpoint of cooling in Energy Saving ($Wcool_{Eco}$)	30 °C	OFF, $Wheat_{Eco}$...40°C	
P13 ***	Electrical heater in cooling mode	ON	OFF = disabled ON = enabled	
P14	Button lock (Press operating mode button for 5 seconds to lock or unlock the buttons)	0 (Disabled)	0 = Disabled 1 = Auto lock 2 = Manual lock	

*** Parameter P13 is only displayed for application "2-pipe with el heater".
All temperature settings in increments of 0.5 °C.

Please record all changes you make!