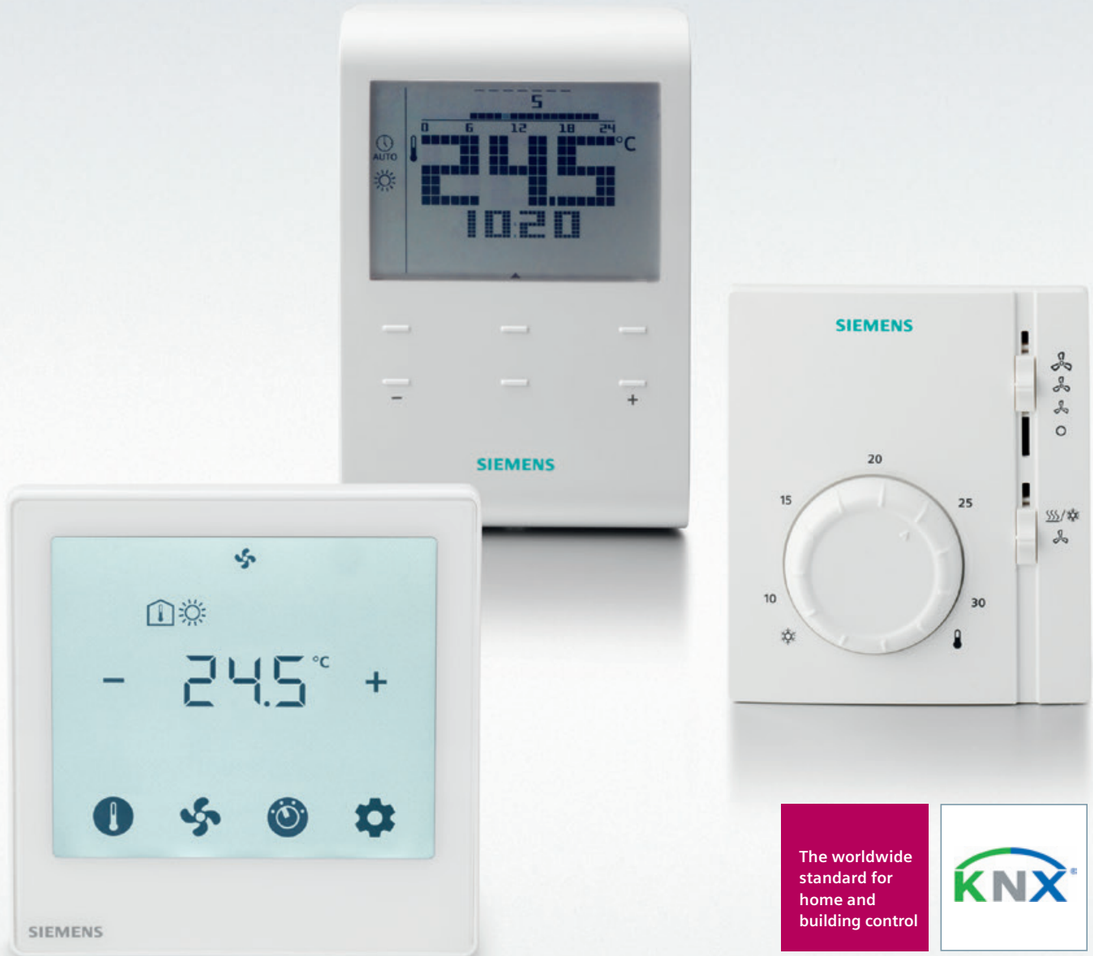
Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

"We are the trusted technology partner for energy-efficient, safe and secure buildings and infrastructure."

Article no. 0-92248-en (Status 10/2016)

SIEMENS

Ingenuity for life



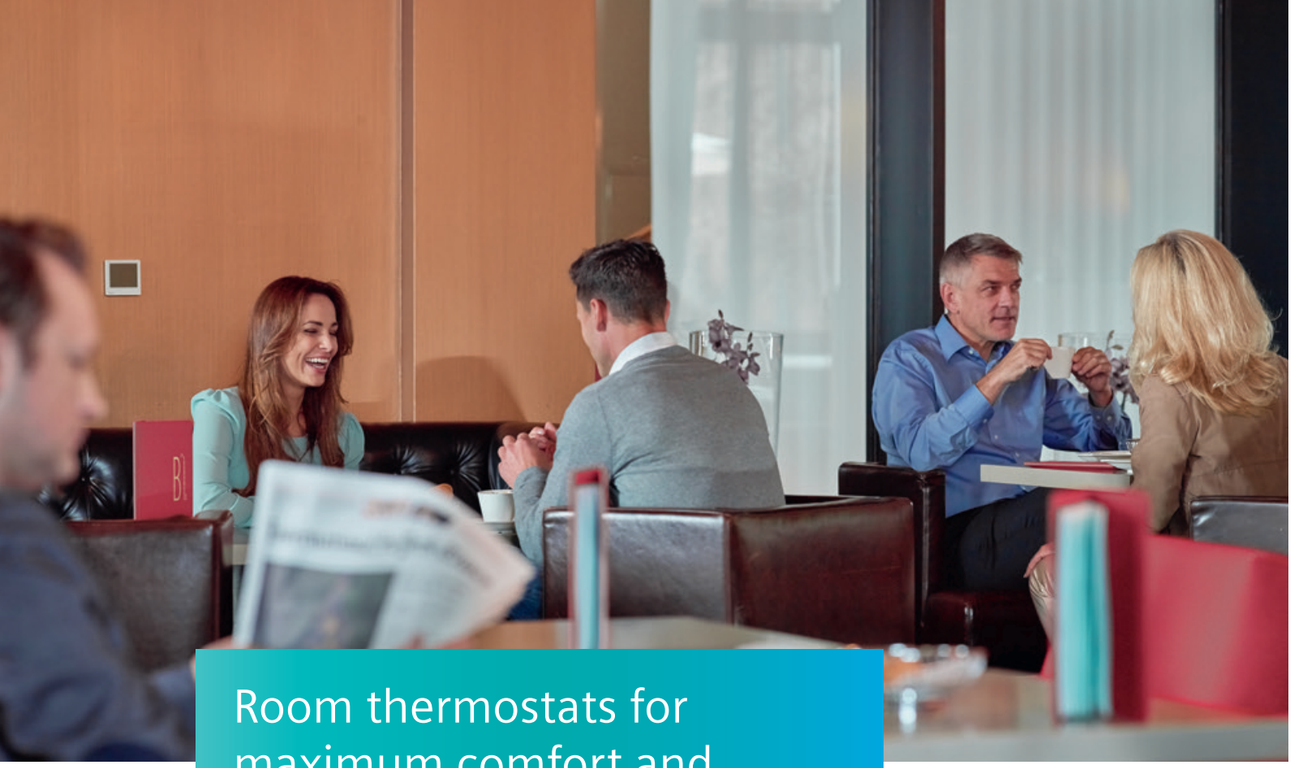
The worldwide standard for home and building control

KNX

Saving energy while maintaining a constant room climate

Room thermostats that maximize control accuracy for heating, ventilation and air conditioning (HVAC) applications.

siemens.com/thermostats



Room thermostats for maximum comfort and energy efficiency

With their patented control technology, room thermostats from Siemens have been maintaining a consistent temperature level, and hence a particularly pleasant room climate, for the past 80 years. At the same time, they make it possible to cut energy consumption, for example by using time programs to heat or cool individual rooms to the desired temperature at a configured time. This approach avoids wasting energy on unused rooms. In addition, all room thermostats are easy to install and configure. As a result, they are an ideal way to establish a comfortable room climate, save energy, lower costs and reduce CO_2 emissions.

Energy-efficient room temperature control

In order to maintain a constant and comfortable climate, room thermostats have to respond flexibly to many different variables. That is why the room thermostats from Siemens use time programs, window contacts, functions to optimize energy generation in the primary system and much more for precise and reliable control.

This makes them an excellent choice for energy-efficient room control. They also offer easy installation and fast commissioning. The communication-enabled room thermostats with KNX or Modbus interfaces have integrated sensors, for example, and can control the HVAC system directly – without requiring a separate KNX module to be installed in the room. New variants support air humidity control for the perfect balance of temperature and humidity for a comfortable room climate.

Long life and a comfortable environment

High-quality materials, excellent workmanship and comprehensive quality management, along with decades of experience in developing room thermostats, ensure that room thermostats from Siemens are reliable and long-lasting. In addition, they comply with international standards.

The devices have easy-to-understand symbols, displays with large characters, big buttons or rotary controls for convenient operation in everyday use. Communication-enabled models offer touch screens and self-explanatory menus to ensure intuitive operation. Background lighting makes the displays easier to read.

Highlights

- Broad range of room thermostats for any application
- Energy-efficient temperature control to reduce operating costs
- Optimum comfort due to easy operation and high control accuracy
- Fast, easy installation and commissioning
- Investment protection thanks to high-quality products that comply with standards
- Years of experience and proven application know-how from Siemens

Applications at a glance

Heat pump

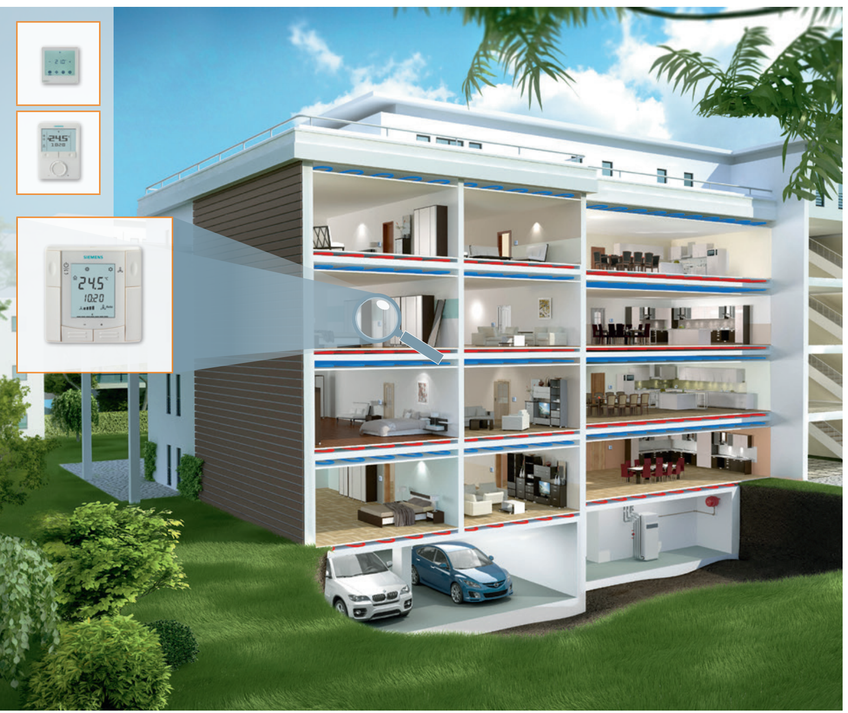
From manual operation to automatic control, room thermostats for heat pump applications address the heat pump directly, i.e. they can control and deactivate the pump according to the desired room temperature. This prevents overheating from sun exposure or energy from an external source. In applications with reversing valves, the room thermostats control compressors in heating or cooling mode with automatic or manual changeover. The configurable parameter for the minimum on and off times prevents damage to the compressor which would result in a shorter service life.

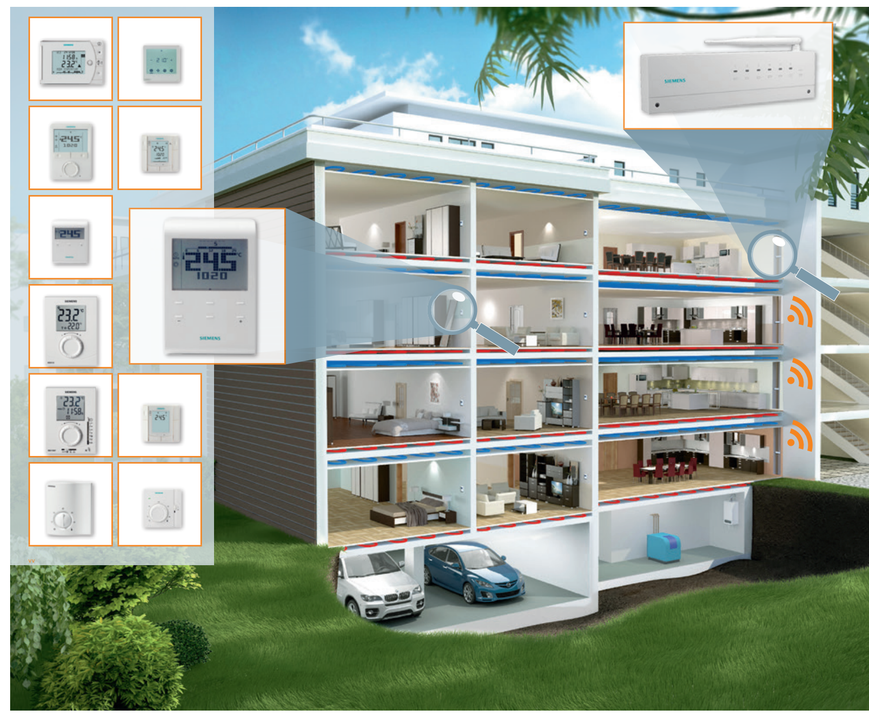
Variable air volume (VAV) systems

Due to their selectable control signals, VAV-compatible room thermostats can be connected directly to a variety of devices, such as VAV boxes, dampers or VAV compact controllers. The wide range of models also makes it possible to change settings using control parameters. As a result, VAV applications can be combined with add-on functions – from electrical heating, radiators and underfloor heating systems to heating/cooling coils. In addition to their basic functions, the room thermostats can also be used to set minimum and maximum limits for the air volume signal. Resetting the damper position on the room thermostat can optimize the primary air control – even in applications with supply and exhaust air. Thanks to KNX communication the room thermostats can be directly connected to an indoor air quality sensor and thus control the room comfort even more efficiently.

Universal heating and cooling systems

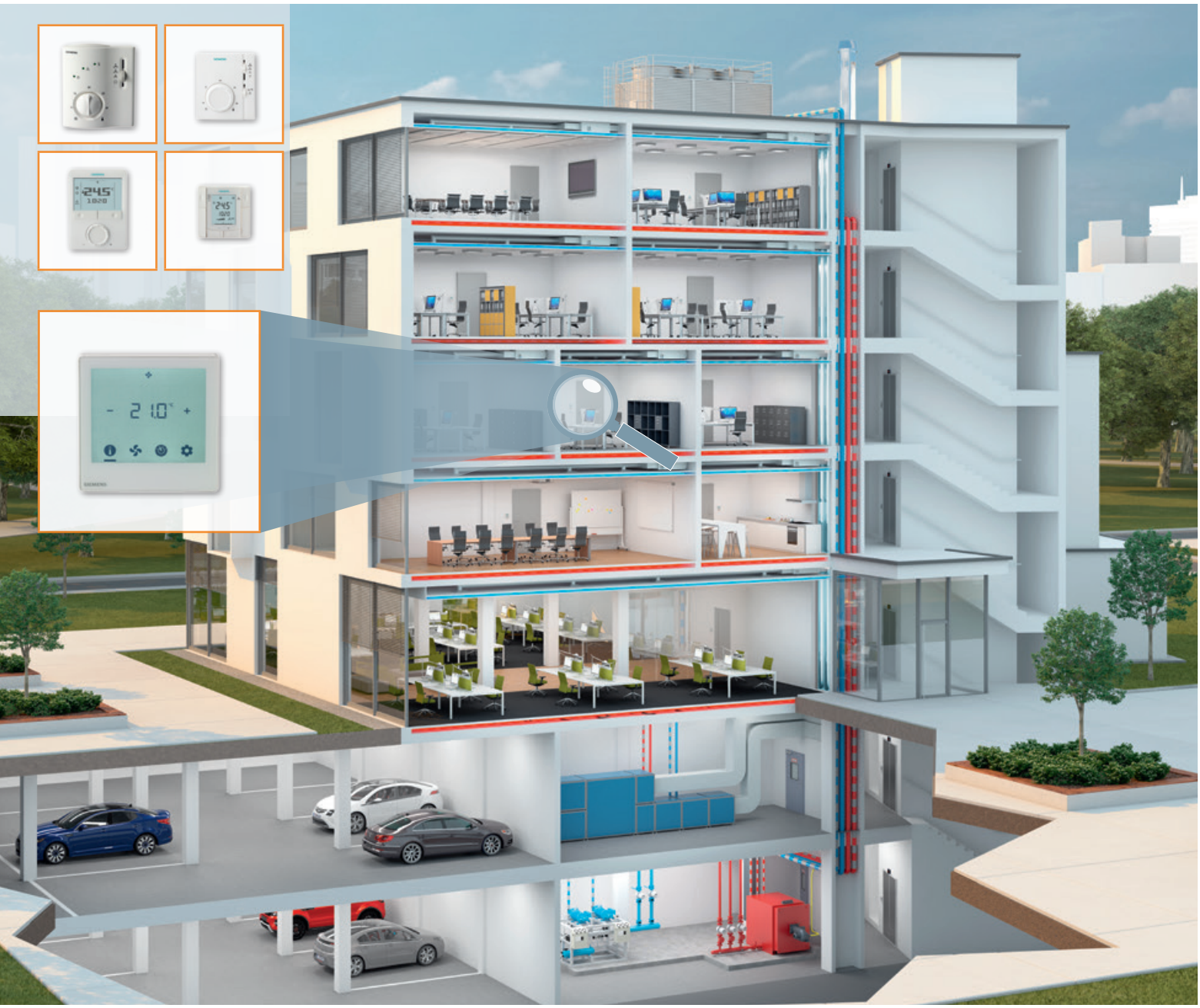
For typical applications with radiators and underfloor heating systems, Siemens offers room thermostats with optimized PID control and self-learning programs. In addition, special variants support applications for hot drinking water and electrical heating systems – with control of up to 16 A. Multifunctional inputs allow to activate functions such as dew point monitoring, window contacts or remote changeover, if desired. Variants with a KNX communication interface make it possible to control the primary system with even greater energy efficiency. Configurable time programs (day/week/vacation) prevent unnecessary energy consumption when rooms are not in use. Automatic time synchronization automatically switches room thermostats from standard to energy saving time and back.





Fan coil systems

Fan coil systems are particularly suitable for individual room control in hotels and offices. The wall- or flush-mounted room thermostats control 2/4-pipe fan coil applications directly, even with add-on functions such as electrical heating or underfloor heating. Thanks to configurable parameters, the room thermostats can also control different types of drives (On/Off, PWM, 3-point or DC) and fans (1/3-step or DC signals). Integrated functions such as time programs, presence detectors and supply air temperature limiting automatically optimize energy demand – without sacrificing room comfort. Thanks to their energy efficiency applications, RDG room thermostats with KNX communication interfaces meet efficiency class AA according to eu.bac.



The room thermostat portfolio in an overview

	„Premium“ thermostats				„Standard“ thermostats					„Basic“ thermostats			
	REV*	RDF800KN	RDG*	RDF*	RDD	RDE*	RDH	RDJ*	RDU	RCU/RLA	RCC	RAA	RAB
													
Heating	■	■	■		■	■	■	■	■	■		■	
Cooling	■	■	■	■			■		■	■		■	
Heat pumps		■	■	■									
Fan coils		■	■	■							■		■
VAV			■						■				
Domestic hot water					■	■							

* Options with time program available

Room thermostats for VAV and heat pump applications

		Applications									Functionalities									Outputs				Inputs							Power supply	User interfaces					
		Heating only	Cooling only	Heating or cooling	Heating and cooling	2-stage heating	2-stage heating or cooling	Cooling or heating and electric heating	Indoor Air Quality Control	Control algorithm	Flush-mounted unit	Automatic heating/cooling changeover	Manual heating/cooling changeover	V_{min}, V_{max} limitation of supply air	Floor heating limitation	Dew point monitoring	Infrared remote control	7-day time program	Communication interface	On/Off	PWM	3-position	DC 0…10 V	KNX sensor External air quality	Remote IAQ[6] sensor DC 0…10 V	Operating mode/ Remote contact	Presence detector	Heating/cooling changeover sensor	Remote or return air temperature sensor	External setpoint shift	Power supply	Touch screen	Setpoint knob	Setpoint button	Operating mode button (B)	Digital display (LCD)	Additional operation selection/remarks
VAV	**Premium**																																			
	RDG405KN	■	■	■	■	■		■	■	P/PI		■	■	■	■	■			KNX	(1)[1]	(1)[1]	(1)[1]	1	■	■	■	■	■	■	■[2]	AC 24 V		■		B	LCD	
	RDG400KN	■	■	■	■	■		■		P/PI		■	■	■	■	■			KNX	(1)[1]	(1)[1]	(1)[1]	1			■		■	■	■[2]	AC 24 V		■		B	LCD	
	RDG400	■	■	■	■	■		■		P/PI		■	■	■	■	■				(1)[1]	(1)[1]	(1)[1]	1			■		■	■		AC 24 V		■		B	LCD	
	Standard																																			
	RDU341	■	■	■	■	■		■		P/PI	■	■	■	■		■			KNX	1			1			■		■	■	■[2]	AC 24 V			■	B	LCD	
	RDU340	■	■	■	■	■		■		P/PI	■	■	■	■		■				1			1			■		■	■		AC 24 V			■	B	LCD	
	Basic																																			
	RCU50.2	■	■	■						P			■			■							1								AC 24 V		■				Heating-off-cooling switch
	RLA162	■	■		■	■				PI				■[4]									2							■[5]	AC 24 V		■				
Heat pumps	**RDG100 line[3]**	■	■	■	■	■	■	■		2P/PI		■	■		■	■	■	■	KNX	(3)[1]	(2)[1]	(2)[1]				■		■	■		AC 230 V / AC 24 V		■		B	LCD	Time program buttons
	RDF600 line[3]	■	■	■	■	■		■		2P/PI	■R	■	■			■	■	■	KNX	(2)[1]		(1)[1]				■	■	■	■		AC 230 V			■	B	LCD	Time program buttons
	RDF800KN	■	■	■	■	■		■		2P/PI	■R	■	■			■			KNX	(2)[1]		(1)[1]				■	■	■	■		AC 230 V	■				LCD	

(X): X = number of outputs R = round flush-mounted box [1] Either On/Off, 3-position, PWM or DC signal [2] External setpoint shift via KNX
[3] RDG100 and RDF600 line (fan coil) are also suited for chilled ceiling and radiator applications. For detailed information, refer to the fan coil overview.
[4] Only with V_{min} limitation [5] External setpoint shift by outdoor temperature sensor [6] Indoor Air Quality

Room thermostats for heating and/or cooling

		Applications										Functionalities												Outputs				Inputs					Power supply	User interfaces									
		Heating only	Cooling only	Heating or cooling	Heating and cooling	2-stage heating	2-stage heating or cooling	Cooling or heating and electric heating	Heating and independent output/DHW	Heating and cooling with 6-port control ball valve	Control algorithm	Flush-mounted unit	Automatic heating/cooling changeover	Manual heating/cooling changeover	Floor heating limitation	Dew point monitoring	24-hour time program	7-day/weekend time program	7-day time program	Automatic time synchronization	Radio frequency	Communication interface	V_{min}, V_{max} limitation of supply air	On/Off	PWM	3-position	DC 0...10 V	Operating mode/ Remote contact	Presence detector	Heating/cooling changeover sensor	Remote or return air temperature sensor	External setpoint set	Power supply	Touch screen	Setpoint knob	Setpoint button	Operating mode button (B)/ switch (S)	Digital display (LCD), indicator (LED)	Programming knob and slider	Analog clock	Background lighting	Additional operation selector/remarks
Heating and/or cooling	**Communicating**																																									
	RDG100KN[3]	■	■	■	■	■	■	■		■ [4]	2P/PI		■	■	■	■						KNX		(3)[1]	(2)[1]	(2)[1]		■		■	■	■ [2]	AC 230 V		■		B	LCD			■	
	RDG160KN[3]	■	■	■	■	■	■	■		■	2P/PI		■	■	■	■						KNX	■	(2)[1]			(2)[1]	■		■	■	■ [2]	AC 24 V		■		B	LCD			■	
	RDF800KN	■	■	■	■	■		■		■ [4]	2P/PI	■R	■	■	■	■						KNX		(2)[1]		(1)[1]		■	■	■	■		AC 230 V	■				LCD			■	
	Premium																																									
	REV13	■									PID						■							■				■					Battery			■	B	LCD	■		■	
	REV13DC	■									PID						■			■				■				■					Battery			■	B	LCD	■		■	
	REV34-XA	■									PI						■		■							■		■					Battery			■	B	LCD	■		■	
	RDG100 line[3]	■	■	■	■	■	■	■			2P/PI		■	■	■	■			■				■	(3)[1]	(2)[1]	(2)[1]	(2)[1]	■		■	■	■	AC 230 V		■		B	LCD			■	Time program buttons
	Standard																																									
	RDD100	■									2P													■									AC 230 V			■	B	LCD				
	RDD100.1	■									2P													■									Battery			■	B	LCD				
	RDD100.1DHW	■							■		2P													■									Battery			■	B	LCD				
	RDD100.1RFS	■									2P										■			■									Battery			■	B	LCD				
	RDE100	■									2P						■	■	■					■									AC 230 V			■	B	LCD	■			
	RDE100.1	■									2P						■	■	■					■				■					Battery			■	B	LCD	■			
	RDE100.1DHW	■							■		2P						■	■	■					■									Battery			■	B	LCD	■			
	RDE100.1RFS	■									2P						■	■	■		■			■				■					Battery			■	B	LCD	■			
	RDD310/EH	■									2P	■R			■				■					■									AC 230 V			■	B	LCD	■		■	
	RDE410/EH	■									2P	■R			■		■	■	■					■									AC 230 V			■	B	LCD	■		■	
	RDJ100	■									PID						■							■									Battery		■		S	LCD	■			
	RDJ100RF/SET	■									PID						■				■			■									Battery		■		S	LCD	■			
	RAV11.1	■									PID													■									Battery		■		S			■		
	RDH100	■	■								PID													■									Battery		■			LCD				
	RDH100RF/SET	■	■								PID										■			■									Battery		■			LCD				
	RCU10				■	■		■			2P/PI													(2)[1]	(2)[1]			■					AC 230 V		■							
	RCU15				■	■					2P/PI													(2)[1]	(2)[1]			■			■		AC 24 V		■							
	Basic																																									
	RAA11	■	■								2P													1									AC 23...250 V									
	RAA21	■	■								2P													1									AC 23...250 V		■							
	RAA31	■	■								2P													1									AC 230 V		■							On/Off switch
	RAA31.16	■	■								2P													1									AC 230 V		■			LED				On/Off switch
	RAA31.26	■	■					■	■		2P													2									AC 230 V		■			LED				On/Off switch
	RAA41			■							2P			■										1									AC 23...250 V		■							Heating-off-cooling switch

(X): X = number of outputs R = round flush-mounted box [1] Either On/Off, 3-position, PWM or DC signal [2] External setpoint shift via KNX

[3] RDG100 line (fan coil) thermostats are also suited for chilled ceiling and radiator applications. For detailed information, refer to the fan coil overview.
[4] Only possible with communicating 6-port control ball valves

Room thermostats for fan coil applications

For fan coil units

	Applications										Functionalities														Outputs				Inputs						Power supply	User interfaces										
	2-pipe/heating only	2-pipe/cooling only	2-pipe/heating or cooling	2-pipe with electric heater	2-pipe with radiator	4-pipe cooling and heating	4-pipe with electric heater	2-stage heating or cooling	Air humidity control	Control algorithm	Flush-mounted unit	Manual heating/cooling changeover	Automatic heating/cooling changeover	Floor heating limitation	Manual fan speed Off/I/II/III	Automatic fan control	3- or 1-stage fan	Electronic commutated fan motor[1]	Ventilation function	7-day program	Fan function enable/disable	Infrared remote control	Lighting and shading control	Communication interface	On/Off	PWM	3-position	DC 0...10 V	KNX sensor	Multifunctional inputs	Operating mode changeover contact	Presence detector	Return air temperature sensor	Heating/cooling changeover sensor	Power supply	Touch screen	Setpoint knob	Setpoint button	Fan speed switch	Fan speed button	Operating mode button	Display (LCD), indicator (LED)	Background lighting	Additional operation selector/remarks
Communicating																																												
RDG100KN	■	■	■	■	■	■	■	■		2P/PI		■	■	■	■	■	■				■			KNX	(3)[1]	(2)[1]	(2)[1]			■	■		■	■	AC 230 V		■			■	■	LCD	■	
RDG160KN	■	■	■	■	■	■		■		2P/PI		■	■	■	■	■	■	■			■			KNX	(2)[1]			(2)[1]		■	■		■	■	AC 24 V		■			■	■	LCD	■	
RDG165KN	■	■	■	■	■	■		■	■	2P/PI		■	■	■	■	■	■	■			■			KNX	(2)[1]			(2)[1]	■	■	■	■	■	■	AC 24 V		■			■	■	LCD	■	
RDF600KN	■	■	■	■		■				2P/PI	■R	■	■	■	■	■	■				■			KNX	(2)[1]		(1)[1]			■	■	■	■	■	AC 230 V			■		■	■	LCD	■	
RDF800KN	■	■	■	■		■				2P/PI	■R	■	■	■	■	■	■				■			KNX	(2)[1]		(1)[1]			■	■	■	■	■	AC 230 V	■						LCD	■	
RDF301.50	■	■	■	■		■				2P/PI	■	■	■	■	■	■	■				■		■	KNX	(2)[1]		(1)[1]			■	■		■	■	AC 230 V			■		■	■	LCD	■	
RDF302	■	■	■	■		■				2P/PI	■	■	■	■	■	■	■				■			M-bus	(2)[1]		(1)[1]			■	■		■	■	AC 230 V					■	■	LCD	■	
Premium																																												
RDG100	■	■	■	■	■	■	■	■		2P/PI		■	■	■	■	■	■				■				(3)[1]	(2)[1]	(2)[1]			■	■		■	■	AC 230 V		■			■	■	LCD	■	
RDG100T[4]	■	■	■	■	■	■	■	■		2P/PI		■	■	■	■	■	■			■[5]	■	■			(3)[1]	(2)[1]	(2)[1]			■	■		■	■	AC 230 V		■			■	■	LCD	■	Time program buttons
RDG110	■	■	■	■	■	■		■		2P		■	■	■	■	■	■				■				(2)					■	■		■	■	AC 230 V		■			■	■	LCD	■	
RDG160T	■	■	■	■	■	■		■		2P/PI		■	■	■	■	■	■	■		■[5]	■				(2)[1]			(2)[1]		■	■		■	■	AC 24 V		■			■	■	LCD	■	
RDF600	■	■	■	■		■				2P/PI	■R	■	■	■	■	■	■								(2)[1]		(1)[1]			■	■		■	■	AC 230 V			■		■	■	LCD	■	
RDF600T	■	■	■	■		■				2P/PI	■R	■	■	■	■	■	■			■		■			(2)[1]		(1)[1]			■	■		■	■	AC 230 V			■		■	■	LCD	■	Time program buttons
RDF300.02	■	■	■	■		■				2P/PI	■	■	■	■	■	■	■								(2)[1]		(1)[1]			■	■		■	■	AC 230 V			■		■	■	LCD	■	
RDF340	■	■	■	■		■				P/PI	■	■	■	■	■	■	■											(2)		■	■		■	■	AC 24 V			■		■	■	LCD		
Standard																																												
RDF110	■	■	■							2P			■		■	■	■								(1)					■		■[3]	■[3]	AC 230 V			■		■		LCD		
RDF110.2			■							2P		■			■	■	■								(1)									AC 230 V			■		■		LCD		Heating-cooling button
RDF310.2/MM	■	■	■							2P	■	■			■	■	■								(1)									AC 230 V			■		■		LCD		Heating-cooling button
RCC10	■	■	■							2P			■		■		■								(1)					■		■	■	AC 230 V		■		■			LED		
RCC20				■						2P			■		■		■								(2)					■		■	■	AC 230 V		■		■			LED		
RCC30					■	■				2P			■		■		■								(2)					■		■		AC 230 V		■		■			LED		
Basic																																												
RAB11			■							2P		■			■		■								(1)									AC 24...250 V		■		■					Heating-cooling-CO switch
RAB11.1			■							2P		■			■		■		■						(1)									AC 24...250 V		■		■					Ventilation-heating-cooling switch
RAB21	■	■	■							2P					■		■								(1)									AC 24...250 V		■		■					
RAB31						■				2P		■			■		■								(2)									AC 24...250 V		■		■					Heating-cooling-CO switch
RAA31.1						■				2P		■			■		■		■						(1)									AC 24...250 V		■		■					Heating-ventilation-cooling-CO switch
RAB91										No					■		■																	AC 24...250 V				■					

(X): X = number of outputs R = round flush-mounted box [1] Either On/Off, 3-position, PWM or DC signal (optional between given output signals)
[2] DC 0...10 V fan control [3] Either return air temperature sensor or heating/cooling changeover sensor
[4] Also available as horizontal model [5] Switch program can be turned off