SIEMENS

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.

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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.

Everything you need to efficiently control the room temperature

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.

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 daylight saving time and back. The clock updates automatically after a power outage.

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 overvie

	„Premium" thermostats					
	REV*	RDF800KN	RDG*	RDF*	RDD	RDE*
						
Heating	■	■	■		■	■
Cooling	■	■	■	■		
Heat pumps		■	■	■		
Fan coils		■	■	■		
VAV			■			
Domestic hot water					■	■

* Options with time program available

Room thermostats for VAV and heat pump a

		Applications								Functionalities								
		Heating only	Cooling only	Heating or cooling	Heating and cooling	2-stage heating	2-stage heating or cooling	Cooling or heating and electric heating	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
VAV	Premium																	
	RDG400KN	■	■	■	■	■		■	P/PI		■	■	■	■	■			KNX
	RDG400	■	■	■	■	■		■	P/PI		■	■	■	■	■			
	Standard																	
	RDU341	■	■	■	■	■		■	P/PI	■	■	■	■		■			KNX
	RDU340	■	■	■	■	■		■	P/PI	■	■	■	■		■			
	Basic																	
	RCU50.2	■	■	■					P			■			■			
	RLA162	■	■		■	■			PI				■ [4]					
Heat pumps	RDG100 line [3]	■	■	■	■	■	■	■	2P/PI		■	■		■	■	■	■	KNX
	RDF600 line [3]	■	■	■	■	■		■	2P/PI	■R	■	■			■	■	■	KNX
	RDF800KN	■	■	■	■	■		■	2P/PI	■R	■	■			■			KNX

(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
[4] Only with V_{min} limitation [5] External setpoint shift by outdoor temperature sensor

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„Standard“ thermostats				„Basic“ thermostats			
	RDH	RDJ*	RDU	RCU/RLA	RCC	RAA	RAB
							
	■	■	■	■		■	
	■		■	■		■	
					■		■
			■				

pplications

Outputs				Inputs				Power supply	User interfaces					
On/Off	PWM	3-position	DC 0...10 V	Operating mode/ Remote contact	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
(1)[1]	(1)[1]	(1)[1]	1	■	■	■	■[2]	AC 24 V		■		B	LCD	
(1)[1]	(1)[1]	(1)[1]	1	■	■	■		AC 24 V		■		B	LCD	
1			1	■	■	■	■[2]	AC 24 V			■	B	LCD	
1			1	■	■	■		AC 24 V			■	B	LCD	
			1					AC 24 V		■				Heating-off-cooling switch
			2				■[5]	AC 24 V		■				
(3)[1]	(2)[1]	(2)[1]		■	■	■		AC 230 V / AC 24 V		■		B	LCD	Time program buttons
(2)[1]		(1)[1]		■	■	■		AC 230 V			■	B	LCD	Time program buttons
(2)[1]		(1)[1]		■	■	■		AC 230 V	■				LCD	

[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.

Room thermostats for heating and/or cooling

Heating and/or cooling

	Applications									Functionalities										
	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	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 synchronisation	Radio frequency	Communication interface
Communicating																				
RDG100KN[3]	■	■	■	■	■	■	■		2P/PI		■	■	■	■						KNX
RDG160KN[3]	■	■	■	■	■	■	■		2P/PI		■	■	■	■						KNX
RDF800KN	■	■	■	■	■		■		2P/PI	■R	■	■	■	■						KNX
Premium																				
REV13	■								PID						■					
REV13DC	■								PID						■			■		
REV17	■								PID						■	■				
REV17DC	■								PID						■	■		■		
REV34	■								PI						■		■			
REV34DC	■								PI						■		■	■		
RDG100 line[3]	■	■	■	■	■	■	■		2P/PI		■	■	■	■			■			
Standard																				
RDD100	■								2P											
RDD100.1	■								2P											
RDD100.1DHW	■							■	2P											
RDD100.1RFS	■								2P										■	
RDE100	■								2P						■	■	■			
RDE100.1	■								2P						■	■	■			
RDE100.1DHW	■							■	2P						■	■	■			
RDE100.1RFS	■								2P						■	■	■		■	
RDD310/EH	■								2P	■R			■							
RDE410/EH	■								2P	■R			■		■	■	■			
RDJ10	■								2P						■					
RDJ10RF/SET	■								2P						■				■	
RAV11.1	■								PID											
RDH10	■	■							2P											
RDH10RF/SET	■	■							2P										■	
RCU10				■	■		■		2P/PI											
RCU15				■	■				2P/PI											
Basic																				
RAA11	■	■							2P											
RAA21	■	■							2P											
RAA31	■	■							2P											
RAA31.16	■	■							2P											
RAA31.26	■	■					■	■	2P											
RAA41			■						2P			■								

(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

g applications

	Outputs				Inputs					Power supply	User interfaces								
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
	(3)[1]	(2)[1]	(2)[1]		■		■	■	■ [2]	AC 230 V		■		B	LCD			■	
■	(2)[1]			(2)[1]	■		■	■	■ [2]	AC 24 V		■		B	LCD			■	
	(2)[1]		(1)[1]		■	■	■	■		AC 230 V	■				LCD			■	
	■				■					Battery			■	B	LCD	■		■	
	■				■					Battery			■	B	LCD	■		■	
	■				■					Battery			■	B	LCD	■		■	
	■				■					Battery			■	B	LCD	■		■	
			■		■					Battery			■	B	LCD	■		■	
			■		■					Battery			■	B	LCD	■		■	
■	(3)[1]	(2)[1]	(2)[1]	(2)[1]	■		■	■	■	AC 230 V		■		B	LCD			■	Time program buttons
	■									AC 230 V			■	B	LCD				
	■									Battery			■	B	LCD				
	■									Battery			■	B	LCD				
	■									Battery			■	B	LCD				
	■									AC 230 V			■	B	LCD	■			
	■				■					Battery			■	B	LCD	■			
	■									Battery			■	B	LCD	■			
	■				■					Battery			■	B	LCD	■			
	■									AC 230 V			■	B	LCD	■		■	
	■									AC 230 V			■	B	LCD	■		■	
	■									Battery		■		S	LCD	■			
	■									Battery		■		S	LCD	■			
	■									Battery		■		S			■		
	■									Battery		■			LCD				
	■									Battery		■			LCD				
	(2)[1]	(2)[1]			■					AC 230 V		■							
	(2)[1]	(2)[1]			■			■		AC 24 V		■							
	1									AC 23...250 V									
	1									AC 23...250 V		■							
	1									AC 230 V		■							On/Off switch
	1									AC 230 V		■			LED				On/Off switch
	2									AC 230 V		■			LED				On/Off switch
	1									AC 23...250 V		■							Heating-off-cooling switch

[3] RDG100 line (fan coil) thermostats are also suited for chilled ceiling and radiator applications. For detailed information, refer to the fan coil overview.

Room thermostats for fan coil applications

Fan coils	Applications									Functionalities												
	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	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	Air humidity control	7-day program	Fan function enable/disable	Infrared remote control
Communicating																						
RDG100KN	■	■	■	■	■	■	■	■	2P/PI		■	■	■	■	■	■					■	
RDG160KN	■	■	■	■	■	■		■	2P/PI		■	■	■	■	■	■	■				■	
RDG165KN	■	■	■	■	■	■		■	2P/PI		■	■	■	■	■	■	■		■		■	
RDF600KN	■	■	■	■		■			2P/PI	■R	■	■	■	■	■	■					■	
RDF800KN	■	■	■	■		■			2P/PI	■R	■	■	■	■	■	■					■	
RDF301	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■					■	
RDF301.50	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■					■	
RDF301.50H	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■					■	
RDF302	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■						
Premium																						
RDG100	■	■	■	■	■	■	■	■	2P/PI		■	■	■	■	■	■					■	
RDG100T[4]	■	■	■	■	■	■	■	■	2P/PI		■	■	■	■	■	■				■ [5]	■	■
RDG110	■	■	■	■	■	■		■	2P		■	■	■	■	■	■					■	
RDG160T	■	■	■	■	■	■		■	2P/PI		■	■	■	■	■	■	■			■ [5]	■	
RDF600	■	■	■	■		■			2P/PI	■R	■	■	■	■	■	■						
RDF600T	■	■	■	■		■			2P/PI	■R	■	■	■	■	■	■				■		■
RDF300	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■						
RDF300.02	■	■	■	■		■			2P/PI	■	■	■	■	■	■	■						
RDF340	■	■	■	■		■			P/PI	■	■	■	■	■	■	■						
Standard																						
RDF110	■	■	■						2P			■		■	■	■						
RDF110.2			■						2P		■			■	■	■						
RDF310.2	■	■	■						2P	■	■			■	■	■						
RDF310.21	■	■	■						2P	■	■			■	■	■						■
RDF410.21	■	■	■						2P	■	■			■	■	■				■		■
RCC10	■	■	■						2P			■		■		■						
RCC20				■					2P			■		■		■						
RCC30					■	■			2P			■		■		■						
Basic																						
RAB11			■						2P		■			■		■						
RAB11.1			■						2P		■			■		■		■				
RAB21	■	■	■						2P					■		■						
RAB21.1	■	■	■						2P			■		■		■		■				
RAB31						■			2P		■			■		■						
RAA31.1						■			2P		■			■		■		■				
RAB91									No					■		■						

(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)
[4] Also available as horizontal model [5] Switch program can be turned off

		Outputs				Inputs					Power supply	User interfaces								
Lighting and shading control	Communication interface	On/Off	PWM	3-position	DC 0...10 V	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
	KNX	(3)[1]	(2)[1]	(2)[1]		■	■		■	■	AC 230 V		■			■	■	LCD	■	
	KNX	(2)[1]			(2)[1]	■	■		■	■	AC 24 V		■			■	■	LCD	■	
	KNX	(2)[1]			(2)[1]	■	■		■	■	AC 24 V		■			■	■	LCD	■	
	KNX	(2)[1]		(1)[1]		■	■	■	■	■	AC 230 V			■		■	■	LCD	■	
	KNX	(2)[1]		(1)[1]		■	■	■	■	■	AC 230 V	■						LCD	■	
	KNX	(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	
■	KNX	(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	
	KNX	(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	Buttons for hotel function
	M-bus	(2)[1]		(1)[1]		■	■		■	■	AC 230 V					■	■	LCD	■	
		(3)[1]	(2)[1]	(2)[1]		■	■		■	■	AC 230 V		■			■	■	LCD	■	
		(3)[1]	(2)[1]	(2)[1]		■	■		■	■	AC 230 V		■			■	■	LCD	■	Time program buttons
		(2)				■	■		■	■	AC 230 V		■			■	■	LCD	■	
		(2)[1]			(2)[1]	■	■		■	■	AC 24 V		■			■	■	LCD	■	
		(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	
		(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	Time program buttons
		(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD		
		(2)[1]		(1)[1]		■	■		■	■	AC 230 V			■		■	■	LCD	■	
					(2)	■	■		■	■	AC 24 V			■		■	■	LCD		
		(1)					■		■[3]	■[3]	AC 230 V			■		■		LCD		
		(1)									AC 230 V			■		■		LCD		Heating-cooling button
		(1)									AC 230 V			■		■		LCD		Heating-cooling button
		(1)									AC 230 V			■		■		LCD	■	Heating-cooling button
		(1)									AC 230 V			■		■	■	LCD	■	Heating-cooling button, time program button
		(1)					■		■	■	AC 230 V		■		■			LED		
		(2)					■		■	■	AC 230 V		■		■			LED		
		(2)					■		■		AC 230 V		■		■			LED		
		(1)									AC 24...250 V		■		■					Heating-cooling-CO switch
		(1)									AC 24...250 V		■		■					Ventilation-heating-cooling switch
		(1)									AC 24...250 V		■		■					
		(1)									AC 24...250 V		■		■					Heating/cooling-ventilation switch
		(2)									AC 24...250 V		■		■					Heating-cooling-CO switch
		(1)									AC 24...250 V		■		■					Heating-ventilation-cooling-CO switch
											AC 24...250 V				■					

[2] DC 0...10 V fan control [3] Either return air temperature sensor or heating/cooling changeover sensor

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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."

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