SIEMENS

Ingenuity for life

The worldwide standard for home and building control

KNX

Save 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

Siemens has a complete thermostat portfolio, ranging from simple mechanical and digital room thermostats for basic room climate control to advanced KNX communicating thermostats for integration into building automation systems. The thermostat portfolio is enhanced with a Smart Thermostat for heating applications.

Special emphasis is placed on fast installation, intuitive operation and accurate control. The stand-alone room thermostats cover all room HVAC applications: heating and/or cooling, fan coils and variable air volume.

The KNX communicating thermostats offer powerful yet cost-effective room automation. These communicating thermostats are offered for stand-alone room climate control and for more sophisticated room automation in projects with Siemens' Desigo controllers.

The option to integrate Siemens' thermostats into building management systems – Desigo™ CC, Desigo Control Point or Synco IC – enables remote operation and service.

Smart Thermostat

It's the unique combination of benefits for both professional installers and end customers that makes the Siemens Smart Thermostat so different.

Easy and intuitive
The display has been reduced to the essentials for the easiest possible use; and an intuitive mobile app allows control and monitoring from anywhere, anytime.

Built-in sensors
Six built-in sensors detect temperature, presence or absence, humidity and hazardous gases. Another sensor adjusts the display based on ambient light.

It's also possible to connect external sensors to measure outside temperature, humidity and window contact.

Autonomous control
For the best climate possible, the Smart Thermostat learns and uses the thermal behavior of the room. The patented self-learning algorithm ensures the best temperature control, and Optimum Start Control defines the ideal moment to start heating. These unique functions save energy and maintain comfort with minimal user intervention.

Proven green technology
The Smart Thermostat satisfies high energy-efficiency standards, and the special Green Leaf feature saves even more energy.

Easy commissioning
To minimize effort, the Smart Thermostat can be installed during construction with no Internet connection required. The final commissioning steps are performed by the residents after they move in.

Automatic firmware updates ensure that the latest features are always available.

siemens.com/smart-thermostat

Highlights

- No Internet connection required for installation
- Navigation wizard for fast commissioning
- Easy and highly intuitive user interface
- Satisfies high energy-efficiency standards
- Always up-to-date with free software upgrades

Applications at a glance

Energy-efficient room temperature control

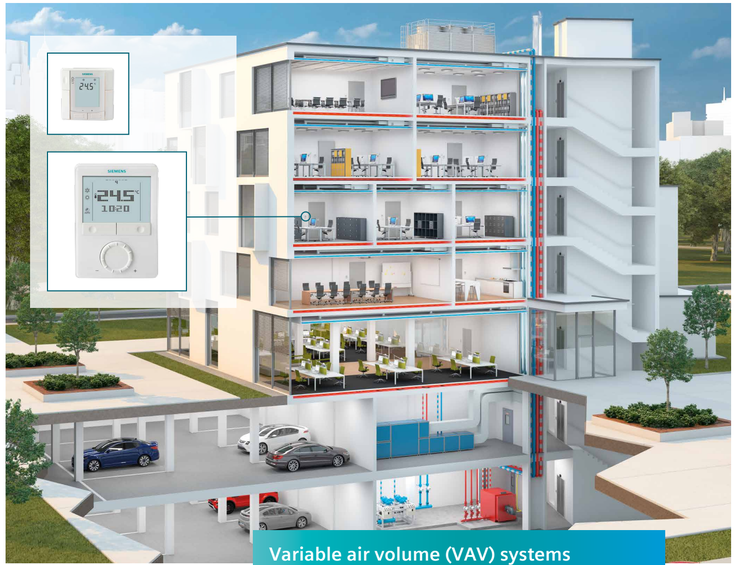
For typical applications with radiators and underfloor heating systems, Siemens offers room thermostats with optimized PID control and self-learning programs. In addition, special variants support applications for domestic hot water and electrical heating systems – with control of up to 16 A. Multifunctional inputs allow activation of functions like dew point monitoring, window contact and 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. The Smart Thermostat RDS110 features a sophisticated bundle of smart features. Quickly and easily installed even with no Internet connection, the thermostat can be intuitively controlled on the go using a remote app. Built-in sensors, a Green Leaf function, and a higher energy-efficiency class also increase your building's value and decrease energy costs.

Fan coil systems

Fan coil systems are especially appropriate 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 like electrical heating or underfloor heating. Thanks to configurable parameters, the room thermostats can also control different types of drives (On/Off, PWM, 3-point and DC) and fans (1/3-step and DC signals). Integrated functions like time programs, presence detectors and supply-air temperature limitation 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.

Heat pump

From manual operation to automatic control, room thermostats for heat pump applications address the heat pump directly; in other words, they can control and release 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 that would result in a shorter service life.



Variable air volume (VAV) systems

Thanks to their selectable control signals, VAV-compatible room thermostats can be connected directly to a variety of devices, including VAV boxes, dampers and VAV compact controllers. The wide range of models also allows users 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 control room comfort even more efficiently.

An overview of the room thermostat portfolio

	Premium thermostats					Standard thermostats						Basic thermostats			
	RDS110	REV	RDF800KN	RDG	RDF	RDD	RDE	RDH	RDJ	RDU/RDE4	RDF5	RCU/RLA	RCC	RAA	RAB
Heating	●	●	●	●		●	●	●	●	●		●		●	
Cooling		●	●	●	●					●		●		●	
Heat pumps			●	●	●										
Fan coils			●	●	●						●		●		●
VAV				●						●					
Domestic hot water	●					●	●								
Humidity	●			●											
Indoor air quality	●			●											

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	Touchscreen	Setpoint knob	Setpoint button	Operating mode button (B)	Digital display (LCD)	Additional operation selection/remarks
VAV	**Communicating**																																		
	RDG405KN	●	●	●	●	●		●	●	P/PI		●	●	●	●	●			KNX	(1)[1]	(1)[1]	(1)[1]	1	●	●	●	●	●	●	●[2]	AC 24 V		●		B	LCD	
	Premium																																		
	RDG400	●	●	●	●	●		●		P/PI		●	●	●	●	●				(1)[1]	(1)[1]	(1)[1]	1			●		●	●		AC 24 V		●		B	LCD	
	Standard																																		
	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
	RDF800 line[3]	●	●	●	●	●		●		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) 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

		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 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	Remote app[5]	Touchscreen	Setpoint knob	Setpoint button	Operating mode button (B)/ switch (S)	Digital display (LCD), indicator (LED)	Programming knob and slider switch	Analog clock	Background lighting	Additional operation selection/remarks
Heating or/and cooling	**Communicating**																																								
	RDS110	●							●		PID				●			●			WLAN		●				●	●		●		AC 230 V	●	●			B	LCD			●	Green Leaf and "Away" button
	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	●		●	
	REV24	●	●								2P/PID							●	●				●				●					Battery					B	LCD	●		●	
	REV24RF/SET	●	●								2P/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
	RDF800	●	●	●	●	●		●			2P/PI	●R	●	●	●	●						●	(2)[1]		(1)[1]		●	●	●	●		AC 230 V		●				LCD			●	
	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	●									TPI/2P						●	●					●									AC 230 V				●	B	LCD				Start/Stop optimization
	RDE100.1	●									TPI/2P				●		●	●					●				●					Battery				●	B	LCD				Start/Stop optimization
	RDE100.1DHW	●							●		TPI/2P						●	●					●									Battery				●	B	LCD				Start/Stop optimization
	RDE100.1RFS	●									TPI/2P				●		●	●		●			●				●					Battery				●	B	LCD				Start/Stop optimization
	RDD310/EH	●									2P	●R			●								●									AC 230 V				●	B	LCD	●		●	
	RDE410/EH	●									2P	●R			●		●	●					●									AC 230 V				●	B	LCD	●		●	
	RDJ100	●									TPI						●						●									Battery			●		S	LCD	●			
	RDJ100RF/SET	●									TPI						●			●			●									Battery			●		S	LCD	●			
	RAV11.1	●									PID												●									Battery			●		S			●		
	RDH100	●									TPI												●									Battery			●			LCD				
	RDH100RF/SET	●									TPI									●			●									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

5) For operating, monitoring, and setting extended functions, like the time program

Room thermostats for fan coil applications

		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	Master / Slave	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 time 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	Touchscreen	Setpoint knob	Setpoint button	Fan speed switch	Fan speed button	Operating mode button	Display (LCD), indicator (LED)	Background lighting	Additional operation selection/remarks
Fan coil	**Communicating**																																												
	RDG100KN	●	●	●	●	●	●	●	●		2P/PI			●	●	●	●	●	●				●			KNX	(3)[1]	(2)[1]	(2)[1]			●	●		●	●	AC 230 V		●			●	●	LCD	●	
	RDG160KN	●	●	●	●	●	● [6]		●		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	●	
	RDF600KN/S	●	●	●	●		●				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	●	
	RDF302	●	●	●	●		●				2P/PI		●	●	●	●	●	●	●							Modbus	(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[4]	●	●	●	●	●	●		●		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
	RDF800	●	●	●	●		●				2P/PI		● R	●	●	●	●	●	●				●				(2)[1]		(1)[1]			●	●	●	●	●	AC 230 V	●						LCD	●	
	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
	RDF510	●	●	●							2P		●	●			●	●								(1)										AC 230 V			●		●		LCD	●	Heating-cooling button
	RDF530	●	●		●		●				2P		●	●	●		●	●								(2)										AC 230 V			●		●		LCD	●	Heating-cooling button
	RCC10	●	●	●							2P				●		●		●							(1)						●		●	●	AC 230 V		●		●			LCD		
	RCC20				●						2P				●		●		●							(2)						●		●	●	AC 230 V		●		●			LCD		
	RCC30					●	●				2P				●		●		●							(2)						●		●		AC 230 V		●		●			LCD		
	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
	RAB31.1						●				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) With power reserve for clock during power failure

5) Switch program can be turned off

6) Possible also with combi-valve (PICV) and 6-port ball valve as changeover

When building technology creates perfect places –
that's Ingenuity for life.

Never too cold. Never too warm.
Always safe. Always secure.

With our knowledge and technology, our products,
our solutions and our services, we turn places into
perfect places.

We create perfect places for their users' needs –
for every stage of life.

#CreatingPerfectPlaces
siemens.com/perfect-places

Published by
Siemens Switzerland Ltd 2019

Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
6300 Zug
Switzerland
Tel +41 58 724 24 24

(Status 05/2019)