SIEMENS

Room thermostats with KNX communications

RDG200KN & RDG260KN

For fan coil units, universal applications and compressors in DX-type equipment applications

- KNX bus communication (S-Mode, LTE-Mode)
- Built-in temperature and humidity sensor
- Control room temperature and humidity level
- Green leaf indication
- RDG200KN triac control outputs for On/Off, PWM or 3-position
- RDG260KN control outputs for DC 0...10 V or On/Off
- Fan outputs for 3-speed, 1-speed or DC 0...10 V
- 3 multifunctional inputs for keycard, external sensor, etc.
- Operating modes: Comfort, Economy and Protection
- Automatic or manual fan speed control
- Automatic or manual heating/cooling changeover
- Commissioning via local HMI or with tools such as Synco™ ACS or ETS
- Commissioning via Siemens smartphone application PCT Go for Android™
- Operating voltage:
  - RDG200KN: AC 24 V or AC 230 V (selectable)
  - RDG260KN: AC 24 V or DC 24 V

Functions

Control application

The RDG2..KN KNX room thermostats are designed for use with the following:

Fan coil units via On/Off or modulating/DC control outputs:

- 2-pipe system
- 2-pipe system with electric heater
- 2-pipe system with radiator/floor heating
- 2-pipe/2-stage system
- 4-pipe system
- 4-pipe system with electric heater
- 4-pipe system with PICV and 6-port ball valve as changeover (RDG260KN)

Chilled/heated ceilings (or radiators) via On/Off or modulating/DC control outputs:

- Chilled/heated ceiling
- Chilled/heated ceiling with electric heater
- Chilled/heated ceiling and radiator/floor heating
- Chilled ceiling and radiator/floor heating
- Chilled/heated ceiling/2-stage
- Chilled/heated ceiling (4-pipe) with 6-port ball valve (RDG260KN)
- Chilled/heated ceiling with PICV and 6-port ball valve as changeover (RDG260KN)

Compressor applications via On/Off control:

- Heating or cooling, compressor in DX-type equipment
- Heating or cooling, compressor in DX-type equipment with electric heater
- Heating and cooling, compressor in DX-type equipment
- Heating or cooling/2-stage, compressor in DX-type equipment

General functions

- Room temperature control via built-in temperature sensor or external room temperature/return air temperature sensor
- Room relative humidity control via built-in humidity sensor (humidity function can be disabled.)
- Min./max. humidity control by shifting temperature setpoint and releasing contact for dehumidifier/humidifier
- Floor heating temperature limitation
- Min. and max. supply air temperature limitation
- Selection of operating modes via operating mode button
- Button lock for all buttons independently (automatically or manually)
- Changeover between heating and cooling mode (automatic via local sensor or bus, or manually)
- Parameters protected by password (disabled by default)
- Purge function together with 2-port valve
- Valve exercising function to prevent gripping
- Reminder to clean fan filters

Setpoints and display

- Min. and max. limitation of room temperature setpoint:
  - Comfort limitation (min. and max. limitation)
  - Energy saving concept (min. and max. limitation separate for heating and cooling)
- Temporary Comfort mode extension
- Green leaf indication function
- Display of current room temperature or setpoint in °C, °F or both

Setting

- Application selection via DIP switches or external commissioning software (ACS, ETS and Siemens smartphone application PCT Go for Android™)
- Parameter download with external commissioning software (ACS, ETS and Siemens smartphone application PCT Go for Android™)
- Reloading factory settings for commissioning and control parameters

Fan

- 1-speed, 3-speed or DC 0...10 V fan control on RDG200KN and RDG260KN (automatic or manual fan)
- Advanced fan control function, e.g. fan kick, fan start delay, selectable fan operation (enable, disable, depending on heating/cooling mode, or min. and max. speed setting)
- Fan start depending on fan coil temperature (heating) to avoid cool air while heating
- Enabling fan output only in the 2nd stage (2-pipe/2-stage)
- Switching fan speed from manual to automatic in the dead zone to avoid energy waste (selectable function)

Special functions

- Swap function for 2-pipe and 2-stage application by switching the 1st stage heating to 2nd stage cooling
- On 2-pipe/2-stage application, limit the number of heating or cooling sequence to one
- Control of 6-port ball valve for chilled and heated ceiling, DC 0…10 V, DC 2…10 V and inverted signals DC 10…0 V, DC 10…2 V (RDG260KN)
- Control of 6-port ball valve as changeover (On/Off – open/close signal) and PICV DC 0…10 V for
  - Chilled and heated ceiling/floor (RDG260KN)
  - Fan coil application (RDG260KN)
- Control of 6-port ball valve via KNX S-Mode objects (RDG200KN and RDG260KN)
- Flow limitation function for PICV in heating mode (RDG260KN)

Inputs/outputs

- 3 multifunctional inputs selectable for:
  - Window contact switches operating mode to Protection
  - Presence detector switches operating mode to Comfort
  - Sensor for automatic heating/cooling changeover
  - Switch for manual heating/cooling changeover
  - External room temperature or return air temperature sensor
  - Dewpoint sensor
  - Enable electric heater
  - Fault input
  - Monitor input for temperature sensor or switch status
  - Supply air temperature sensor

  - Coil temperature sensor
  - External temperature limit
  - Hotel presence detector
- Selectable relay functions
  - Switching off external equipment during Protection mode
  - Switching on external equipment (e.g. pump) during heating/cooling demand
  - Output status heating/cooling sequence
  - Dehumidification/humidification control output

KNX communication features

- KNX bus (terminals CE+ and CE-) for communication with Synco™ devices or KNX compatible devices
- Display of outside temperature or time of day from KNX bus
- Time scheduling and central control of setpoints from KNX bus
- Control of Economy setpoints via KNX bus
- Relative humidity setpoint via KNX bus
- Control of KNX actuators and fan via S-Mode objects
- Energy supply optimization via energy demand signal via Synco™ RMB795B central control unit
- Interworking with Siemens AQR.. and QMX.. sensors for room humidity and room temperature measurement
- Interworking with Siemens QMX.. room operator units for room humidity, room temperature and operating commands for fan, operating mode and setpoints

Power supply selection for RDG200KN

The RDG200KN can be powered either on AC 230 V (default) or AC 24 V.

To select the correct power supply, use the power switch on the rear of the device.

⚠ Note:

The outputs (triacs and relays) follow the main power supply, either AC 230 V or AC 24 V.

The device will be damaged if set to AC 24 V, but powered on AC 230 V.

Applications

The RDG2..KN room thermostats support the following applications, which can be configured using the DIP switches on the rear of the unit or via the commissioning tool.

Remote configuration

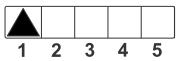
Set DIP switches 1…5 to Off (remote configuration, factory setting) to select an application via commissioning tool.

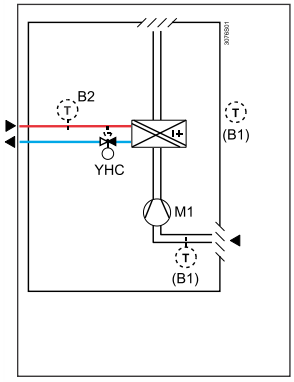
Remote configuration via commissioning tool (factory setting) • Synco™ ACS • ETS • Commissioning via Siemens smartphone application PCT Go for Android™	**ON =** ▲ **DIP NO.: 1…5**
	OFF = □ **DIP NO.: 1…5**

Applications for fan coil systems

Applications, DIP setting, control outputs

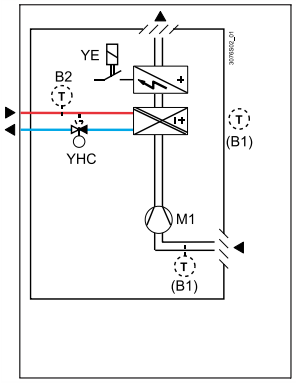
- 2-pipe fan coil unit





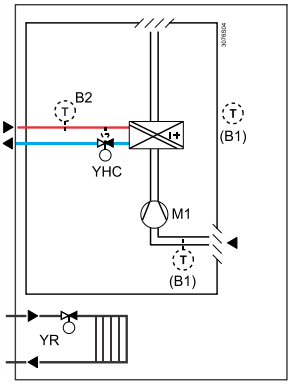
Using RDG200KN, RDG260KN

- 2-pipe fan coil unit with electric heater



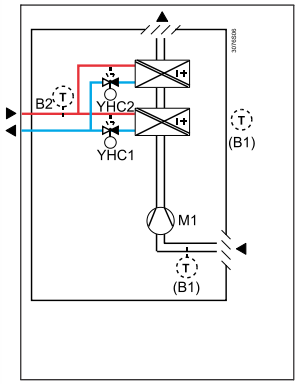
Using RDG200KN, RDG260KN

- 2-pipe fan coil unit with radiator/floor heating



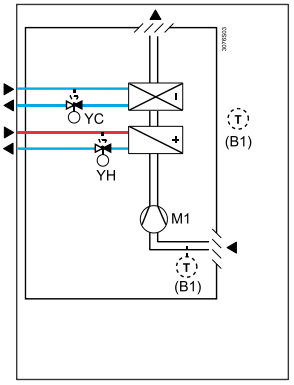
Using RDG200KN, RDG260KN

- 2-pipe/2-stage fan coil unit



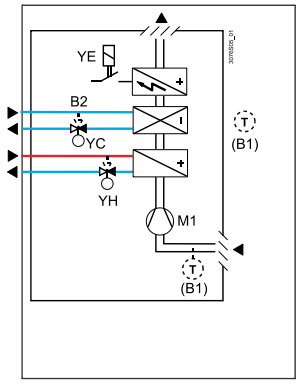
Using RDG200KN, RDG260KN

- 4-pipe fan coil unit



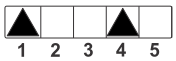
Using RDG200KN, RDG260KN

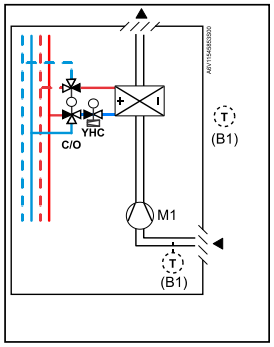
- 4-pipe fan coil unit with electric heater



Using RDG200KN, RDG260KN

- 4-pipe fan coil unit with PICV and 6-port ball valve as changeover





Using RDG260KN

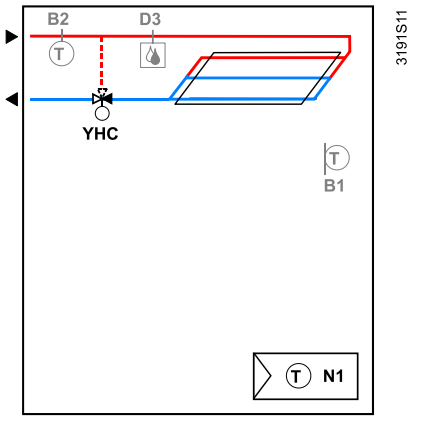
YHC Heating/cooling valve actuator
YH Heating valve actuator
YC Cooling valve actuator
YE Electric heater
M1 1-speed or 3-speed fan, DC 0…10 V fan
B1 Return air temperature sensor or external room temperature sensor (optional)
B2 Changeover sensor (optional)

Product No.	Control output	Fan output
RDG200KN	PWM, On/Off, 3-pos	3-speed, 1-speed, DC 0…10 V
RDG260KN	DC 0…10 V	3-speed, 1-speed, DC 0…10 V
	On/Off	DC 0…10 V

Applications for universal systems

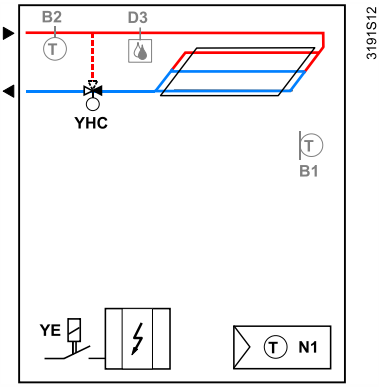
Applications, DIP setting, control outputs

- Chilled/heated ceiling



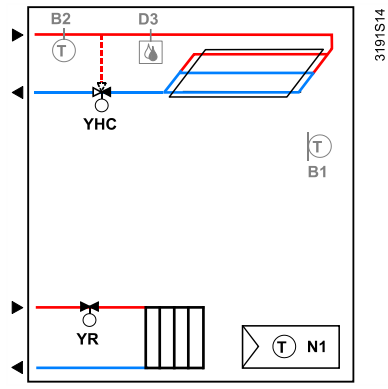
Using RDG200KN, RDG260KN

- Chilled/ heated ceiling and electric heater



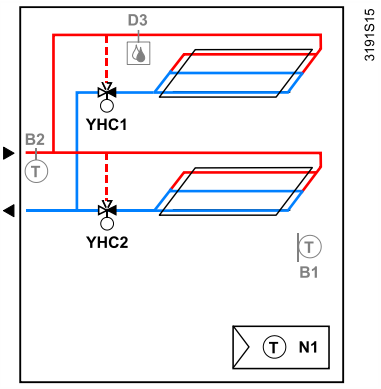
Using RDG200KN, RDG260KN

- Chilled/heated ceiling and radiator/floor heating



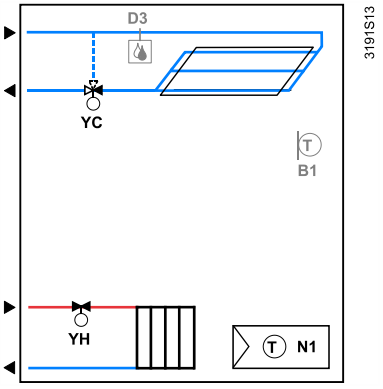
Using RDG200KN, RDG260KN

- 2-stage chilled/heated ceiling



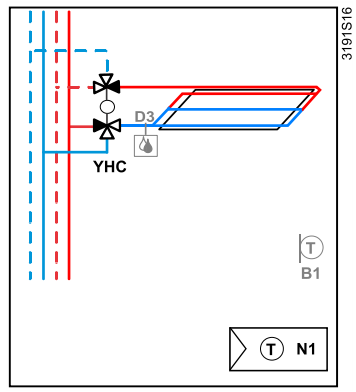
Using RDG200KN, RDG260KN

- Chilled ceiling and radiator



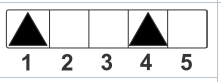
Using RDG200KN, RDG260KN

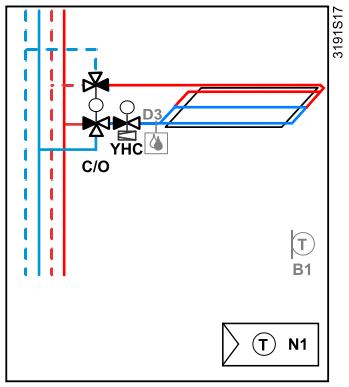
- Chilled and heated ceiling control with 6-port ball valve



Using RDG260KN

- Chilled and heated ceiling control with PICV and 6-port ball valve as changeover





Using RDG260KN

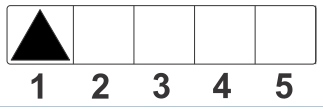
YHC Heating/cooling valve actuator
YH Heating valve actuator
YC Cooling valve actuator
YE Electric heater
D3 Dewpoint sensor
M1 1-speed or 3-speed fan, DC 0…10 V fan
B1 Return air temperature sensor or external room temperature sensor (optional)
B2 Changeover sensor (optional)

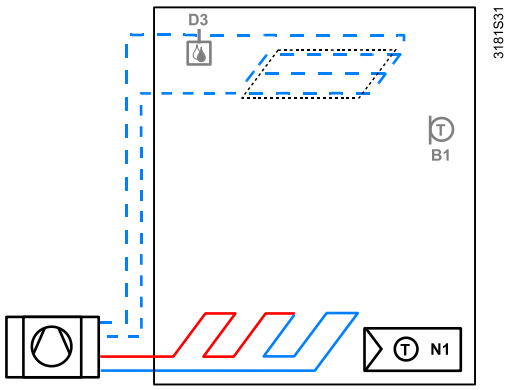
Product No.	Control outputs
RDG200KN	On/Off, PWM, 3-position
RDG260KN	On/Off, DC 0…10 V

Application for heat pump systems

Applications, DIP setting, control outputs

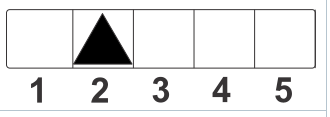
- Heated or cooled with compressors

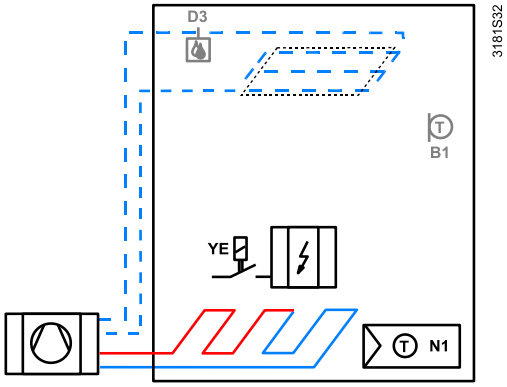




Using RDG200KN, RDG260KN

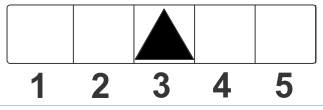
- Heated or cooled with compressors with electric heater

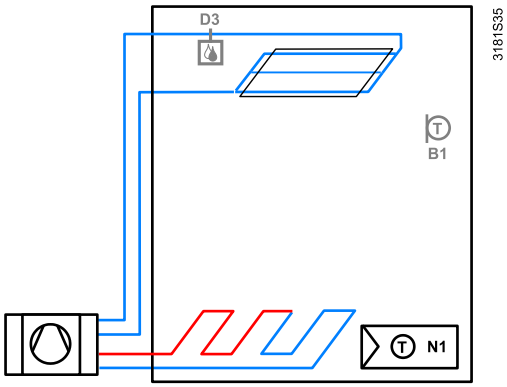




Using RDG200KN, RDG260KN

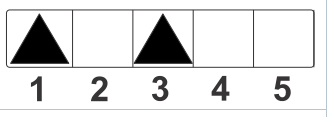
- Heated and cooled with compressors

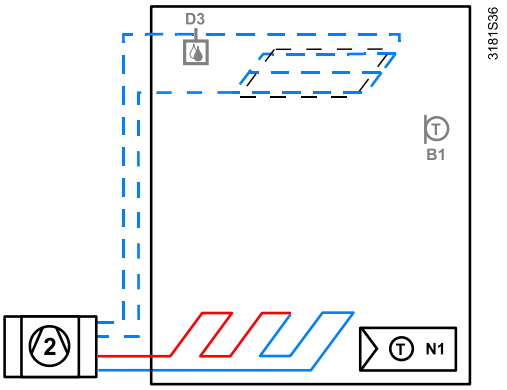




Using RDG200KN, RDG260KN

- 2-stage heated or cooled with compressors





Using RDG200KN, RDG260KN

N1 Thermostat Output Y10/Q1: Heating or heating/cooling Output Y20/Q2: Cooling only (heating/cooling)	B1 Return air temperature sensor or external room temperature sensor (optional)
YE Electric heaters	D3 Dewpoint sensor

Product No.	Control output	Fan
RDG200KN	On/Off	Disabled, 1-speed, 3-speed, DC 0…10 V
RDG260KN	On/Off	Disabled, DC 0…10 V

Type summary

For fan coil units, universal applications and compressors in DX-type equipment applications

Product no.	Stock no.	Operating voltage	Fan		Number of control outputs					Built-in sensor
			3-speed	DC	On/Off	PWM	3-pos	DC	On/Off (3-wire)	Humidity, temperature
RDG200KN	S55770-T409	AC 24 V or AC 230 V	✓	✓ [1]	3	3	2	–	2	✓
RDG260KN	S55770-T412	AC 24 V or DC 24 V	✓	✓ [1]	–	–	–	3	–	✓
			–	✓ [1]	2 [2]	–	–	–	–	

[1] The terminal Y50 is used as DC 0…10 V output.

[2] The output is relay On/Off.

Accessories

Type	Product/stock no.	Datasheet
KNX power supply 160 mA (Siemens BT LV)	5WG1 125-1AB02	TPI_N125
KNX power supply 320 mA (Siemens BT LV)	5WG1 125-1AB12	TPI_N125
KNX power supply 640 mA (Siemens BT LV)	5WG1 125-1AB22	TPI_N125

Ordering

When ordering, specify both product number / stock number and name: e.g. **RDG200KN / S55770-T409 room thermostat**

Order valve actuators and accessories separately.

Equipment combinations

Type of unit		Product no.	Datasheet *)
Cable temperature or changeover sensor, cable length 2.5 m NTC (3 kΩ at 25 °C)		QAH11.1	1840
Cable temperature sensor PVC 2 m, LG-Ni1000		QPA22	1831
Room temperature sensor NTC (3 kΩ at 25 °C)		QAA32	1747
Room temperature sensor LG-Ni1000		QAA24	1721
Front modules with passive temperature measurement LG-Ni1000		AQR2531ANW	1408
Strap-on temperature sensor LG-Ni1000		QAD22	1801

Type of unit		Product no.	Datasheet *)
Condensation monitor		QXA21..	A6V10741072
Flush-mount KNX room sensor (base and front module)		AQR2570N.. AQR2532NNW AQR2533NNW AQR2535NNW	1411
Wall-mounted KNX sensors		QMX3.P30 QMX3.P70	1602

On/Off actuators

Type of unit		Product no.	Datasheet *)
Electromotive On/Off actuator		SFA21.. SFA71..	4863
Electromotive On/Off valve and actuator (only available in AP, UAE, SA and IN)		MVI../MXI..	A6V11251892
Zone valve actuator (only available in AP, UAE, SA and IN)		SUA	4832

On/Off and PWM actuators [1)]

Type of unit		Product no.	Datasheet *)
Thermal actuator (for radiator valves) AC 230 V, NO		STA23.. [1)]	4884
Thermal actuator (for radiator valves) AC 24 V, NO		STA73.. [1)]	4884
Thermal actuator AC 230 V (for small valves 2.5 mm), NC		STP23.. [1)]	4884
Thermal actuator AC 24 V (for small valves 2.5 mm), NC		STP73.. [1)]	4884

3-positon actuators
AC 230 V

Type of unit		Product no.	Datasheet *)
Electric actuator, 3-position (for radiator valves) AC 230 V		SSA31..	4893
Electric actuator, 3-position (for 2- and 3-port valves/V..P45) AC 230 V		SSC31	4895

Type of unit		Product no.	Datasheet *)
Electric actuator, 3-position (for small valves 2.5 mm) AC 230 V		SSP31..	4864
Electric actuator, 3-position (for small valves 5.5 mm) AC 230 V		SSB31..	4891
Electric actuator, 3-position (for small valve 5 mm) AC 230 V		SSD31..	4861
Electric actuator, 3-position (for valves 5.5 mm) AC 230 V		SAS31..	4581
Rotary actuators for ball valves, 3-position		GDB331.9E	4657
Rotary actuators for ball valves, 2 or 3-position		GDB141.9E GDB341.9E	A6V10636150

3-positon actuators
AC 24 V

Type of unit		Product no.	Datasheet *)
Electric actuator, 3-position (for radiator valves) AC 24 V		SSA81..	4893
Electric actuator, 3-position (for 2- and 3-port valves/V..P45) AC 24 V		SSC81	4895
Electric actuator, 3-position (for small valves 2.5 mm) AC 24 V		SSP81..	4864
Electric actuator, 3-position (for small valves 5.5 mm) AC 24 V		SSB81..	4891
Electric actuator, 3-position (for small valve 5 mm) AC 24 V		SSD81..	4861

DC 0…10 V actuators

Type of unit		Product no.	Datasheet *)
Electric actuator, DC 0…10 V (for radiator valves)		SSA61..	4893
Electric actuator, DC 0…10 V (for 2- and 3-port valves/V..P45)		SSC61..	4895
Electric actuator, DC 0…10 V (for small valves 2.5 mm)		SSP61..	4864
Electric actuator, DC 0…10 V (for small valves 5.5 mm)		SSB61..	4891
Electromotive actuator, DC 0…10 V (for valves 5.5 mm)		SAS61..	4581

Type of unit		Product no.	Datasheet *)
Electrothermal actuator, AC 24 V, NC, DC 0…10 V, 1 m		STA63	4884
Electrothermal actuator, AC 24 V, NO, DC 0…10 V, 1 m		STP63	4884
Rotary actuators for ball valves AC 24 , DC 0…10 V		GDB161.9E	4657

KNX actuators

Type of unit		Product no.	Datasheet *)
Rotary actuators for ball valves KNX S-Mode		GDB111.9E/KN	A6V10725318

*) The documents can be downloaded from http://siemens.com/bt/download

1) With PWM control, exact parallel run of 2 or more thermal actuators is not possible . If several fan coil units are controlled by the same room thermostat, motorized actuators with On/Off or 3-position control are preferred.

Note:

For more information about parallel operation and the max. number of actuators that can be used, refer to the data sheets of the selected actuator type and the following list:

Max. number of actuators in parallel on RDG200KN (AC 230 V):

- 6 SS..31.. actuators (3-position)
- 4 ST..23.. if used with On/Off control signal
- 10 SFA.., SUA.., MVI.., MXI.. On/Off actuators
- Parallel operation of SAS31 not available

Max. number of actuators in parallel on RDG200KN (AC 24 V):

- 6 SS..81.. actuators (3-position)
- 4 ST..73.. if used with On/Off control signal
- 2 SFA71.. On/Off actuators
- Parallel operation of SAS81 not available

Max. number of actuators in parallel on RDG260KN (AC 24 V):

- 10 SS..61.. actuators (DC)
- 10 ST..23/63/73.. actuators (DC or On/Off)
- 10 SFA.., SUA.., MVI.., MXI.. On/Off actuators
- 10 SAS61.. actuators (DC)
- 10 GDB161.9E

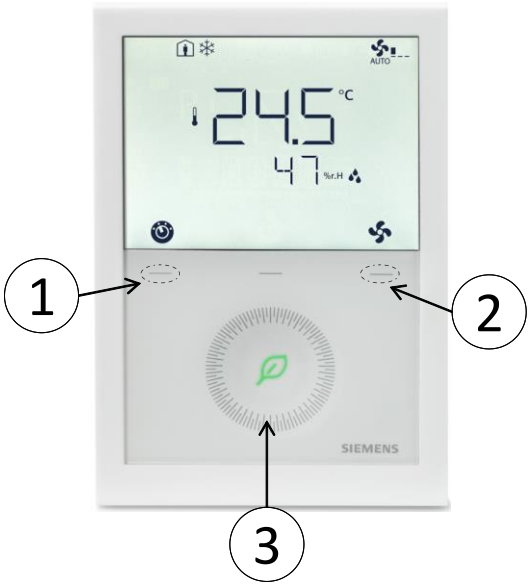
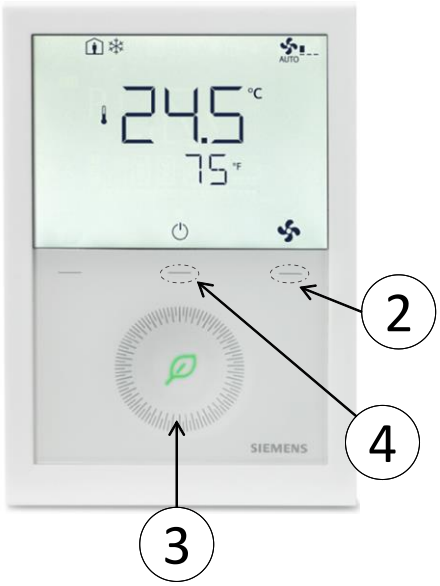
Mechanical design

The room thermostat consists of two parts:

- Plastic housing with electronics, operating elements, and room temperature sensor
- Mounting plate with screw terminals

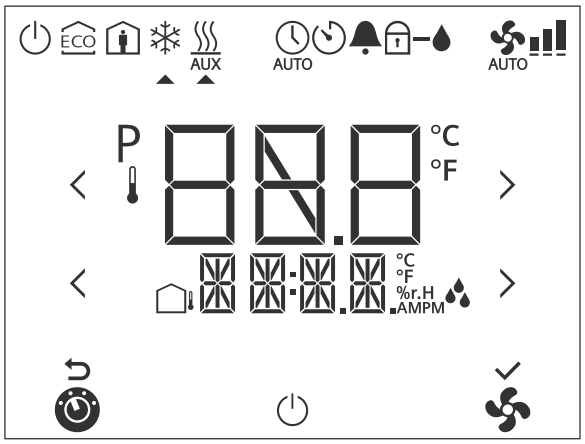
The housing engages in the mounting plate and is secured with 2 screws.

Operation and settings

Standard	Hospitality
	

Number	Description
①	Operating mode button/Esc
②	Fan mode button/OK
③	Capacitive rotary knob to adjust setpoints and parameters
④	Protection hospitality mode button

Display



#	Symbol	Description	#	Symbol	Description
1		Operating mode selection	2		Fan speed selection
3		Escape	4		Confirm parameters
5		Outside temperature	6		Additional user information, such as outside temperature, time of day from KNX bus, relative humidity
7	AMPM	Morning: 12-hour format (via bus), Afternoon: 12-hour format (via bus)			
8	%r.H	Relative humidity	9	°C °F	Degrees Celsius or Fahrenheit
10	P	Parameter	11		Value with thermometer: Digits for room temperature display
12		Digits for setpoint display	13		Protection mode
14	ECO	Economy mode	15		Comfort mode
16		Cooling mode	17	AUX	Heating mode, electric heater active
18		Heating mode	19		Manual changeover, heating/cooling mode
20	AUTO	Auto mode	21		Temporary timer
22		Fault	23		Button lock
24		Condensation in room (dewpoint sensor active) or humidity control active	25	AUTO	Automatic fan
26		Fan speed			Fan speed I
					Fan speed II
					Fan speed III

Green leaf indication

The green leaf indication is an energy-efficient setting and indicates the end user settings:

- Green leaf: Settings are within the preset energy-efficient range
- Red leaf: Settings exceed the preset energy-efficient range

Green leaf functionality is configured via P110:

- 0 = Disabled (OFF)
- 1 = Green and red dimmed out
- 2 = Green dimmed out / red fixed
- 3 = Green and red fixed

Within the preset energy-efficient range	Exceed the preset energy-efficient range End users can press the red leaf and return to the energy-efficient range	Return to the preset energy-efficient range
		

Product documentation

Title	Document ID
Mounting instructions	A6V11546008
Operating instructions	A6V11545973
Basic documentation	A6V11545892
CE declarations	A5W00120120A
RCM	A5W00120121A
Environmental product declaration	RDG200KN: A5W00085404A RDG260KN: A5W00116569A

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

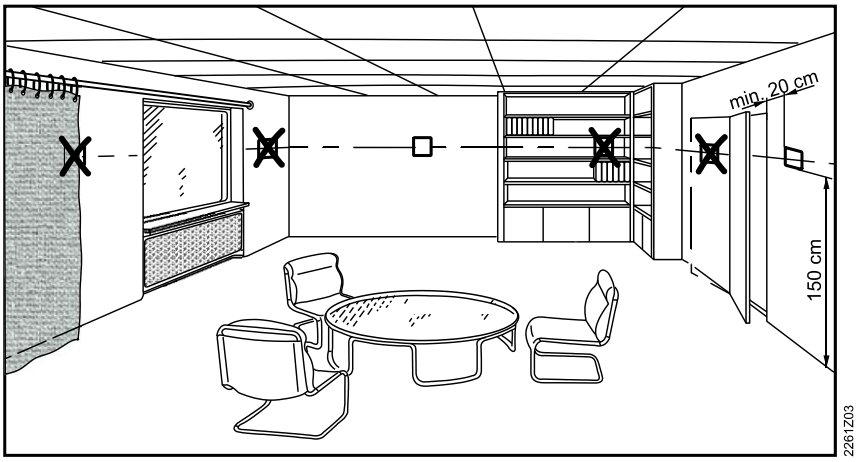
http://siemens.com/bt/download

Notes

Security

	⚠ CAUTION
	National safety regulations Failure to comply with national safety regulations may result in personal injury and property damage. • Observe national provisions and comply with the appropriate safety regulations.

Mounting and installation



Mounting

- The devices are suitable for wall mounting.
- Recommended height: 1.5 m above the floor.
- Do not mount the devices in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Avoid direct solar radiation and drafts.
- Avoid unheated (uncooled) building area such as outside walls.
- Seal the conduit box or the installation tube if any, as air currents can affect sensor readings.
- Adhere to allowed ambient conditions.
- An external room temperature sensor is recommended if above situations cannot be avoided in the installation area.

Wiring

- Comply with local regulations to wire, protect and earth the thermostat.

⚠ Warning! No internal line protection for supply lines to external consumers (Q1, Q2, Q3, Yx or Yxx)! Risk of fire and injury due to short-circuits!

- Adapt the line diameters as per local regulations to the rated value of the installed over current protection device.
- The AC 230 V mains supply line must have an external circuit breaker with a rated current of no more than 10 A.

- ⚠ Properly size the cables to the thermostat, fan and valve actuators for AC 230 V mains voltage.
- ⚠ Use valve actuators rated for AC 230 V / AC 24 V / DC 24 V depending on mains voltage.
- ⚠ Inputs X1-M, X2-M or U1-M: Multiple switches (e.g. summer/winter switch) may be connected in parallel. Consider overall maximum contact sensing current for switch rating.
- ⚠When mains voltage is AC 230 V, SELV inputs X1-M, X2-M and U1-M use cables with min. 230 V insulation.
- Selectable relay function: Follow instructions in basic documentation A6V11545892 to connect external equipment to the relay outputs.
- ⚠ Disconnect thermostat from power supply before removing from the mounting plate.
- ⚠ If a KNX bus power supply is connected to the line with communicating thermostats and Synco™ controller, the internal KNX power supply of the Synco™ controllers must be switched off.

Commissioning

Applications and settings

The room thermostats are delivered with a fixed set of applications and related parameters. Select and activate the relevant application and settings during commissioning using one of the following tools:

- Local DIP switches and HMI
- Synco™ ACS
- ETS5 or higher versions
- Siemens smartphone application PCT Go for Android™

DIP switches

Set the DIP switches before snapping the thermostat to the mounting plate, if selecting an application via DIP switches.

Set all DIP switches to Off (remote configuration) if selecting an application via commissioning tool.

After power is on, the thermostat resets and all LCD segments light up, indicating that reset is correct. After the reset of 3 seconds, the thermostat is ready for commissioning by qualified HVAC staff.

If all DIP switches are Off, **NO APPL** displays, indicating that application commissioning via a tool is required.

Commissioning via Siemens smartphone application PCT Go for Android™

The setting via the Siemens smartphone application Product Commissioning Tool (PCT Go) for Android™ is used to set the application and parameters settings of the thermostat.

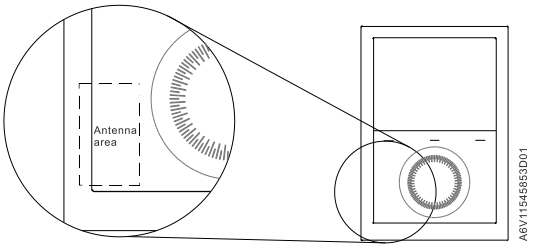
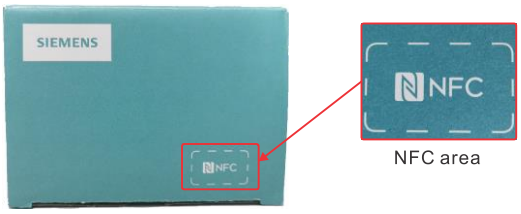
DIP switches can be either all set to Off or preset with an application. (DIP switch setting has higher priority.)

This tool allows for wireless setting of the thermostat with Android™ smartphone and read/write parameters.

The commissioning tool works directly after users scan either the antenna area of the thermostat or the NFC area on the individual package box.

In addition, users can:

- Scan the antenna area without powering on the thermostat.
- Scan the NFC area without unpacking the thermostat from the individual box.

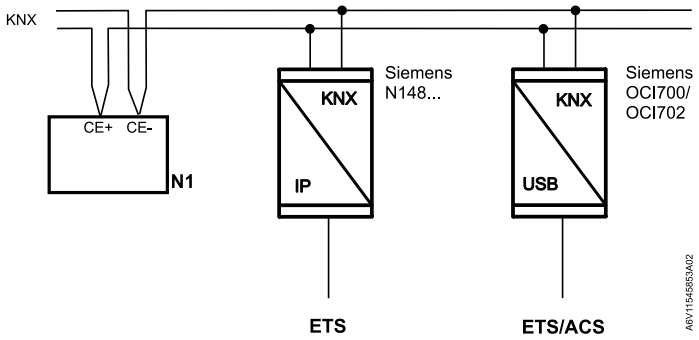
Antenna area	Unpowered thermostat from individual package
	

Notes

- Each time the application is changed, the thermostat reloads the factory settings for all control parameters excepting KNX device and zone addresses.
- The commissioning via Siemens smartphone application PCT Go for Android™ can be disabled via parameters to avoid unexpected changes of the thermostat.

Connect tools

Connect the Synco™ ACS or ETS tools to the KNX bus cable at any point for commissioning.



ACS and ETS require an interface:

- KNX interface (e.g. Siemens N148…)
- OCI702 USB-KNX interface

Control sequence

Set the control sequence via parameter P001 depending on the application. Factory setting:

Application	Factory setting P001
2-pipe and chilled/heated ceiling, and 2-stage	1 = Cooling only
4-pipe, chilled ceiling and radiator, 6-port ball valve applications	4 = Heating and cooling

Calibrate sensor

Recalibrate the temperature sensor if the room temperature displayed on the thermostat does not match the room temperature measured (after min. 1 hour of operation). To do this, change parameter P006.

Setpoint and range limitation

We recommended to review the setpoints and setpoint ranges (P011, P013…P016, P019, P020) and change them as needed to achieve maximum comfort and save energy.

Programming mode

The programming mode helps to identify the thermostat in the KNX network during commissioning.

Touch both the left and right buttons simultaneously for 6 seconds to activate programming mode, which is indicated on the display with **PROG**.

Programming mode remains active until thermostat identification is complete.

Assign KNX device address

Assign device address (P900) via HMI, ACS, ETS or Siemens smartphone application PCT Go for Android™.

Set the device address to 255, and then the communication is deactivated (no exchange of process data).

Assign KNX group address

Use ETS to assign the KNX group addresses of the thermostat's communication objects.

KNX serial number

Each device has a unique KNX serial number at the rear.

An additional sticker with the same KNX serial number is enclosed in the package box. This sticker is intended for documentation purposes of installers.

Disposal

The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Open Source Software (OSS)

All open source software components used within the product (including their copyright holders and the license conditions) can be found from the website http://www.siemens.com/download?A6V12046962.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Power supply (RDG200KN)	
Operating voltage (L-N)	AC 24 V ±20 % or AC 230 V +10/-15 % (selectable via slider)
Frequency	50/60 Hz
Power consumption	4 VA @ AC 24 V 7 VA @ AC 230 V

- **No internal fuse!**

External preliminary protection with max. C 10 A circuit breaker required in all cases.

- Before switching on power, select the right power supply needed using the power switch on the rear of the device.

Outputs (RDG200KN)	
Fan control Q1, Q2, Q3 – N	AC 24 V or AC 230 V (linked to power supply)
Qx rating min., max. resistive (inductive)	5 mA…5 (4) A

No internal fuse!

External preliminary protection with max. C 10 A circuit breaker required for all cases.

Do not connect 3-speed fans in parallel!

Connect one fan directly, one relay for each speed for additional fans.

Use for actuator control (Q1, Q2)	
• Q1 - rating min., max. resistive/inductive	5 mA...1 A
• Q2 - rating min., max. resistive/inductive	5 mA...1 A
• Max total load current Q1+Q2+Q3	5 A
Use for external equipment (Q1, Q2, Q3)	
• Rating min., max. resistive/inductive Qx	5 mA…1 A
• Max total load current Q1+Q2+Q3	2 A
DC 0...10 V fan control; Y50-M	SELV DC 0...10 V, max. ±5 mA
Control outputs	Solid state (triacs)
Y1, Y2, Y3, Y4-N	AC 24 V or AC 230 V (linked to power supply)
Yx power limitation	8 mA...1 A 3 A fast microfuse, cannot be exchanged

Power supply (RDG260KN)	
Operating voltage (G-G0) DC 24 V: Make sure to connect G to + and G0 to -	AC 24 V ±20 % DC 24 V ±2 V
Frequency	50/60 Hz
Power consumption	4 VA @ AC 24 V
 **No internal fuse!** External preliminary protection with max. C 10 A circuit breaker required for all cases.	

Outputs (RDG260KN)	
Fan control Q1/Q2/Q3/L–N	AC 24…230 V / DC 24 V
Use for 3-speed fan control Rating min, max resistive (inductive)	AC 24…230 V: 5 mA…5 (4) A DC 24 V: 3 A
 **No internal fuse!** External preliminary protection with max. C 10 A circuit breaker required for all cases.	
 **Do NOT connect 3-speed fans in parallel!** Connect one fan directly, for additional fans, one relay for each speed.	
Use for actuator control (Q1, Q2) • Q1 - rating min., max. resistive/inductive • Q2 - rating min., max. resistive/inductive • Max total load current Q1+Q2+Q3	 5 mA...1 A 5 mA...5 (4) A 5 A
Use for external equipment (Q1, Q2, Q3) • Rating min., max. resistive/inductive Qx • Max total load current Q1+Q2+Q3	 5 mA…1 A 2 A
 **No internal fuse!** External preliminary protection with max. C 10 A circuit breaker required for all cases.	
DC 0...10 V fan control (Y50-M)	SELV DC 0...10 V, max. ±5 mA
Actuator control (Y10-G0/Y20-G0/Y30-G0 (G))	SELV DC 0...10 V, max. ±1 mA

Multifunctional inputs	
X1-M/X2-M/U1-M	
Temperature sensor input	
Type	NTC 3k
Temperature range	-20…70 °C
Temperature sensor input	
Type	LG-Ni1000
Temperature range	-40…70 °C

Multifunctional inputs		
Digital input		
Operating action		Selectable (NO/NC)
Contact sensing		DC 0…5 V, max. 5 mA
Insulation against mains		SELV

KNX bus	
Interface type	KNX, TP Uart 2 (electrically isolated)
Bus current	5 mA
Bus topology: See KNX manual ("Reference documentation")	

Operational data		
Switching differential, adjustable		
Heating mode	(P051)	1 K (0.5…6 K)
Cooling mode	(P053)	1 K (0.5…6 K)
P-band Xp		
Heating mode	(P050)	2 K (0.5…6 K)
Cooling mode	(P052)	1 K (0.5…6 K)
Setpoint setting and setpoint range		
Comfort mode	(P011)	21 °C (5…40 °C)
Economy mode	(P019-P020)	15 °C/30 °C (OFF, 5…40 °C)
Protection mode	(P100-P101)	8 °C/OFF (OFF, 5…40 °C)
Multifunctional inputs X1/X2/U1		Selectable (0…25)
Input X1 default value	(P150)	1 (external temperature sensor, room or return air)
Input X2 default value	(P153)	0 (no function)
Input U1 default value	(P155)	3 (window contact)
Built-in room temperature sensor		
Measuring range		0…49 °C
Accuracy at 25 °C		< ±0.5 K
Temperature calibration range		±3 K
Built-in humidity sensor		
Measuring range		10…90 %
Accuracy (after calibration via P007)		< 5 %
Humidity calibration range		±10 %
Settings and display resolution		
Setpoint		0.5 °C
Present temperature value displayed		0.5 °C

Environmental conditions	
Storage	IEC 60721-3-1
Climatic conditions	Class 1K3
Temperature	-25…65 °C
Humidity	< 95 % r.h.
Transport	IEC 60721-3-2
Climatic conditions	Class 2K3
Temperature	-25…65 °C
Humidity	< 95 % r.h.
Mechanical conditions	Class 2M2
Operation	IEC 60721-3-3
Climatic conditions	Class 3K5
Temperature	0…50 °C
Humidity	< 95 % r.h.

Standards and directives	
EU conformity (CE)	A5W00120120A*
Electronic control type	2.B (micro-disconnection on operation)
RCM conformity	A5W00120121A*
Safety class	II as per EN 60730
Pollution class	Normal
Degree of protection of housing	IP30 as per EN 60529
Eco design and labeling directives	Based on EU directive 813/2013 (Eco design directive) and 811/2013 (Labelling directive) concerning space heaters, combination heaters, the following classes apply:
RDG200KN • Application with On/Off operation of a heater • PWM (TPI) room thermostat, for use with On/Off output heaters	 Class I value 1 % Class IV value 2 %
RDG260KN • Application with On/Off operation of a heater • PWM (TPI) room thermostat, for use with On/Off output heaters	 Class I value 1 % Class IV value 2 %
Environmental compatibility	The product environmental declaration (RDG200KN: A5W00085404A*, RDG260KN: A5W00116569A*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

General	
Connection terminals	Solid wires or stranded wires with wire-end sleeves 1 x 0.4…2.5 mm² or 2 x 0.4…1.5 mm²
Minimal wiring cross section on L, N, Q1, Q2, Q3, Y1, Y2, Y3, Y4	Min. 1.5 mm²
Maximal wiring cross section on L, N, Q1, Q2, Q3, Y1, Y2, Y3, Y4	Max. 2.5 mm²
Housing front color	RAL 9016 white
Weight without/with packaging RDG200KN RDG260KN	 266 g/336 g 242 g/311 g

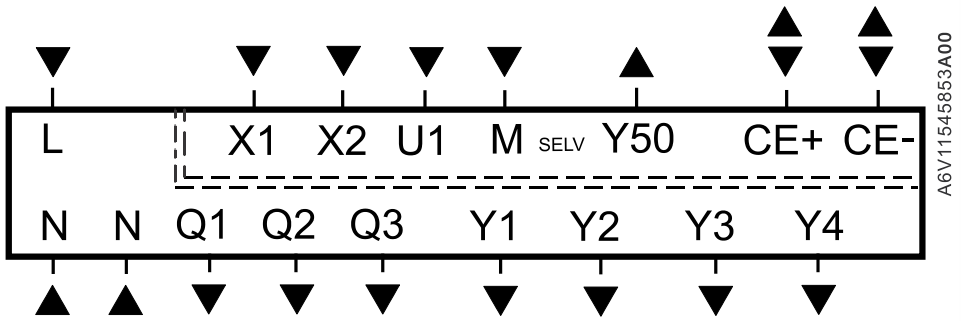
Reference documentation	Handbook for Home and Building Control - Basic Principles (https://my.knx.org/shop/product?language=en&product_type_category=books&product_type=handbook)
Synco™	CE1P3127 Communication via KNX bus for Synco 700, 900 and RXB/RXL Basic documentation
Desigo	CM1Y9775 Desigo RXB integration – S-Mode CM1Y9776 Desigo RXB/RXL integration – individual addressing CM1Y9777 Third-party integration CM1Y9778 Synco integration CM1Y9779 Working with ETS

*) The documents can be downloaded from http://siemens.com/bt/download.

Diagrams

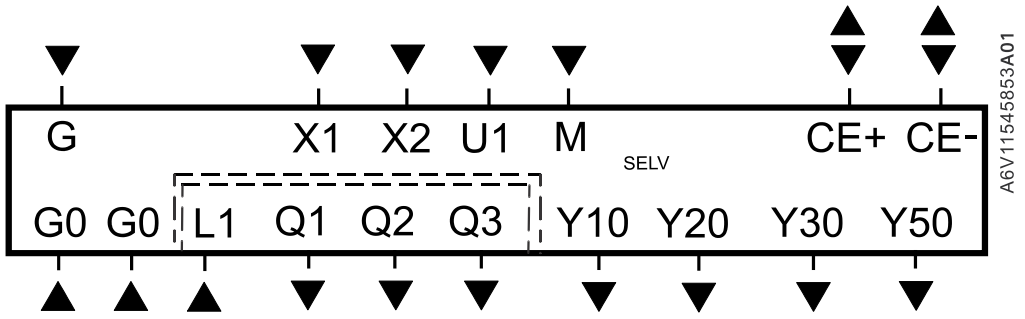
Connection terminals

RDG200KN



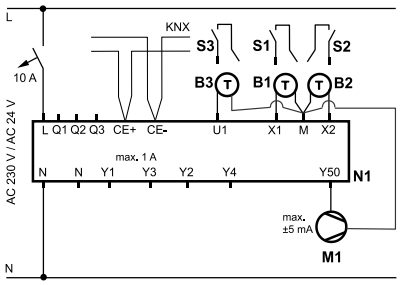
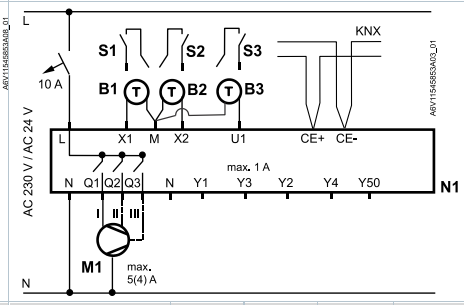
L, N	Operating voltage AC 230 V / AC 24 V
X1, X2	Multifunctional input for temperature sensor (NTC 3k or LG-Ni1000) or potential-free switch (function can be selected via parameter)
U1	Same as multifunctional inputs X1, X2
M	Measuring neutral for sensors and switches
CE+, CE-	KNX Bus + and – terminals
Q1	Control output for fan speed I AC 230 V / AC 24 V
Q2	Control output for fan speed II AC 230 V / AC 24 V
Q3	Control output for fan speed III AC 230 V / AC 24 V
Q1…Q3	Also for special functions AC 230 V / AC 24 V
Y1…Y4	Control outputs “Valve” AC 230 V or AC 24 V (NO triac, for normally open valves), output for electric heater via external relay
Y50	Control output “Fan” DC 0…10 V

RDG260KN

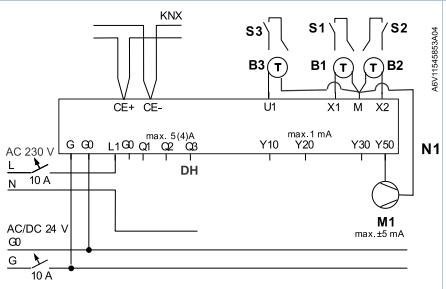
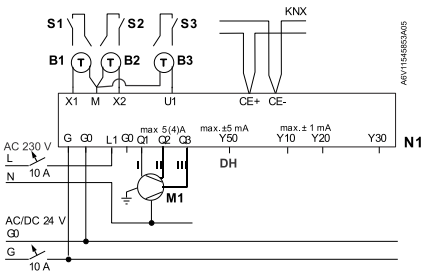


G, G0	Operating voltage AC 24 V / DC 24 V
L1	Feed for relays AC 24…230 V
X1, X2	Multifunctional input for temperature sensor (NTC 3k or LG-Ni1000) or potential-free switch (function can be selected via parameter)
U1	Same as multifunctional inputs X1, X2
M	Measuring neutral for sensors and switches
CE+, CE-	KNX Bus + and – terminals
Q1 (L1)	Control output for fan speed I AC 230 V / AC 24 V
Q2 (L1)	Control output for fan speed II AC 230 V / AC 24 V
Q3 (L1)	Control output for fan speed III AC 230 V / AC 24 V
Q1…Q3 (L1)	Also for special functions AC 24…230 V
Y10, Y20, Y30	Control outputs “Valve” DC 0…10 V
Y50	Control output “Fan” DC 0…10 V

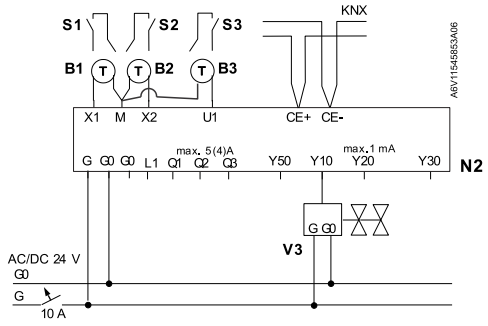
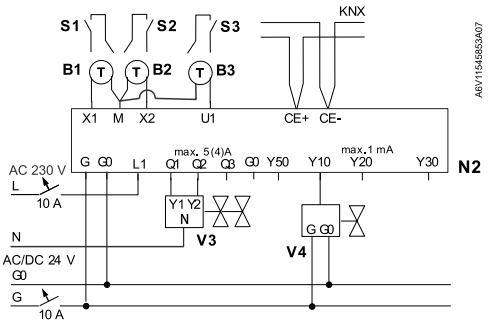
Connection diagrams

RDG200KN				DC 0…10 V fan					1-speed/3-speed fan						
Application	**V1** ⬇	**V2** ⬇	**V3** ⬇												
2-pipe	**YHC**														
			Terminals ➡	**Y1**	**Y3**	**Y2**	**Y4**	**Y50**	**Q1**	**Q2**	**Q3**	**Y1**	**Y3**	**Y2**	**Y4**
Control outputs:	**2-pos (PWM)**			**V1**				✓	✓	✓	✓	**V1**			
	3-pos			**V1**	**V1**			✓	✓	✓	✓	**V1**	**V1**		
2-pipe with radiator **4-pipe** **2-pipe/2-stage**	**YHC** **YH** **YHC1**	**YR** **YC** **YHC2**													
			Terminals ➡	**Y1**	**Y3**	**Y2**	**Y4**	**Y50**	**Q1**	**Q2**	**Q3**	**Y1**	**Y3**	**Y2**	**Y4**
Control outputs:	**2-pos (PWM)**	**2-pos (PWM)**		**V1**		**V2**		✓	✓	✓	✓	**V1**		**V2**	
	2-pos (PWM)	**3-pos**		**V1**		**V2**	**V2**	✓	✓	✓	✓	**V1**		**V2**	**V2**
	3-pos	**2-pos (PWM)**		**V1**	**V1**	**V2**		✓	✓	✓	✓	**V1**	**V1**	**V2**	
	3-pos	**3-pos**		**V1**	**V1**	**V2**	**V2**	✓	✓	✓	✓	**V1**	**V1**	**V2**	**V2**
2-pipe with electric heater	**YHC**	**YE**													
			Terminals ➡	**Y1**	**Y3**	**Y2**	**Y4**	**Y50**	**Q1**	**Q2**	**Q3**	**Y1**	**Y3**	**Y2**	**Y4**
Control outputs:	**2-pos (PWM)**	**2-pos (PWM)**		**V1**		**V2**		✓	✓	✓	✓	**V1**		**V2**	
	2-pos (PWM)	**3-pos**		**V1**		**V2**	**V2**	✓	✓	✓	✓	**V1**		**V2**	**V2**
	3-pos	**2-pos (PWM)**		**V1**	**V1**	**V2**		✓	✓	✓	✓	**V1**	**V1**	**V2**	
	3-pos	**3-pos**		**V1**	**V1**	**V2**	**V2**	✓	✓	✓	✓	**V1**	**V1**	**V2**	**V2**
4-pipe with electric heater	**YH**	**YC**	**YE**												
			Terminals ➡	**Y1**	**Y2**	**Y4**	**Y3**	**Y50**	**Q1**	**Q2**	**Q3**	**Y1**	**Y2**	**Y4**	**Y3**
Control outputs:	**2-pos (PWM)**	**2-pos (PWM)**	**2-pos (PWM)**	**V1**	**V2**		**V3**	✓	✓	✓	✓	**V1**	**V2**		**V3**
	2-pos (PWM)	**3-pos**	**2-pos (PWM)**	**V1**	**V2**	**V2**	**V3**	✓	✓	✓	✓	**V1**	**V2**	**V2**	**V3**

N1	Room thermostat RDG200KN	M1	1-speed or 3-speed fan, DC 0…10 V fan
S1, S2, S3	Switch (keycard, window contact, presence detector etc.)	B1, B2, B3	Temperature sensor (return air temperature, external room temperature, changeover sensor, etc.)
V1, V2, V3	Valve actuators: On/Off or PWM, 3-position, heating, cooling, radiator, heating/cooling, 1st or 2nd stage	YH	Heating valve actuator
YE	Electric heater	YC	Cooling valve actuator
K	Relay	YHC	Heating/cooling valve actuator
CE+	KNX data +	YR	Radiator valve actuator
CE-	KNX data -	YHC1/YHC2	1st/2nd stage

RDG260KN				DC 0…10 V fan						1-speed/3-speed fan					
Application	**V1** ⬇	**V2** ⬇	**V3** ⬇													
2-pipe	**YHC**														
			Terminals ➡	**Q1**	**Q2**	**Y10**	**Y20**	**Y30**	**Y50**	**Q1**	**Q2**	**Q3**	**Y10**	**Y20**	**Y30**
Control outputs:	**DC**					**V1**			✓	✓	✓	✓	**V1**		
	On/Off			**V1**					✓	✓	✓	✓			
2-pipe with radiator **4-pipe** **2-pipe/2-stage**	**YHC** **YH** **YHC1**	**YR** **YC** **YHC2**													
			Terminals ➡	**Q1**	**Q2**	**Y10**	**Y20**	**Y30**	**Y50**	**Q1**	**Q2**	**Q3**	**Y10**	**Y20**	**Y30**
Control outputs:	**DC**	**DC**				**V1**	**V2**		✓	✓	✓	✓	**V1**	**V2**	
	DC	**On/Off**			**V2**	**V1**			✓	✓	✓	✓			
	On/Off	**DC**		**V1**			**V2**		✓	✓	✓	✓			
	On/Off	**On/Off**		**V1**	**V2**				✓	✓	✓	✓			
2-pipe with electric heater	**YHC**	**YE**													
			Terminals ➡	**Q1**	**Q2**	**Y10**	**Y20**	**Y30**	**Y50**	**Q1**	**Q2**	**Q3**	**Y10**	**Y20**	**Y30**
Control outputs:	**DC**	**DC**				**V1**	**V2**		✓	✓	✓	✓	**V1**	**V2**	
	DC	**On/Off**			**V2**	**V1**			✓	✓	✓	✓			
	On/Off	**DC**		**V1**			**V2**		✓	✓	✓	✓			
	On/Off	**On/Off**		**V1**	**V2**				✓	✓	✓	✓			
4-pipe with electric heater	**YH**	**YC**	**YE**												
			Terminals ➡	**Q1**	**Q2**	**Y10**	**Y20**	**Y30**	**Y50**	**Q1**	**Q2**	**Q3**	**Y10**	**Y20**	**Y30**
Control outputs:	**DC**	**DC**	**DC**			**V1**	**V2**	**V3**	✓	✓	✓	✓	**V1**	**V2**	**V3**
	DC	**DC**	**On/Off**		**V3**	**V1**	**V2**		✓	✓	✓	✓			

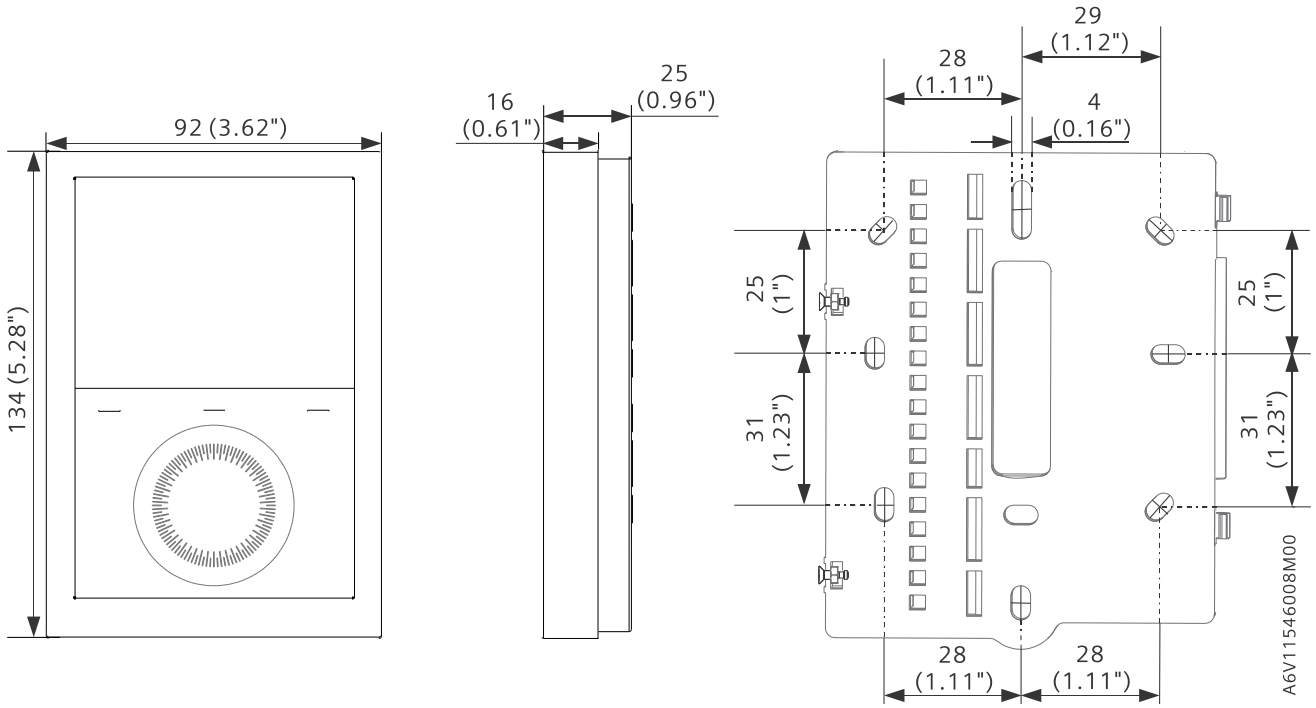
N1	Room thermostat RDG260KN	M1	1-speed or 3-speed fan, DC 0…10 V fan
S1, S2, S3	Switch (keycard, window contact, presence detector etc.)	V1, V2, V3	Valves actuators: On/Off or DC 0...10 V, heating, cooling, radiator, heating/cooling, 1st or 2nd stage
YE	Electric heater	B1, B2, B3	Temperature sensor (return air temperature, external room temperature, changeover sensor, etc.)
YH	Heating valve actuator	DH	Dehumidifier Q3=On/Off, Y50=0…10 V
YC	Cooling valve actuator	YHC	Heating/cooling valve actuator
CE+	KNX data +	YR	Radiator valve actuator
CE-	KNX data -	YHC1/YHC2	1st/2nd stage

RDG260KN	Chilled/heated ceiling with 6-port control ball valve	4-pipe with 6-port ball valve as changeover and PICV
Application		

N2	Room thermostat RDG260KN	V3	6-port modulating control actuator
S1, S2, S3	Switch (keycard, window contact, presence detector etc.)	V4	PICV control valve
B1, B2, B3	Temperature sensor (return air temperature, external room temperature, changeover sensor, etc.)		
CE-	KNX data -	CE+	KNX data +

Note: In application "4-pipe with 6-port ball valve as changeover and PICV", Y50 can be connected with a DC 0...10 V fan.

Dimensions



Dimensions in mm (inch)

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