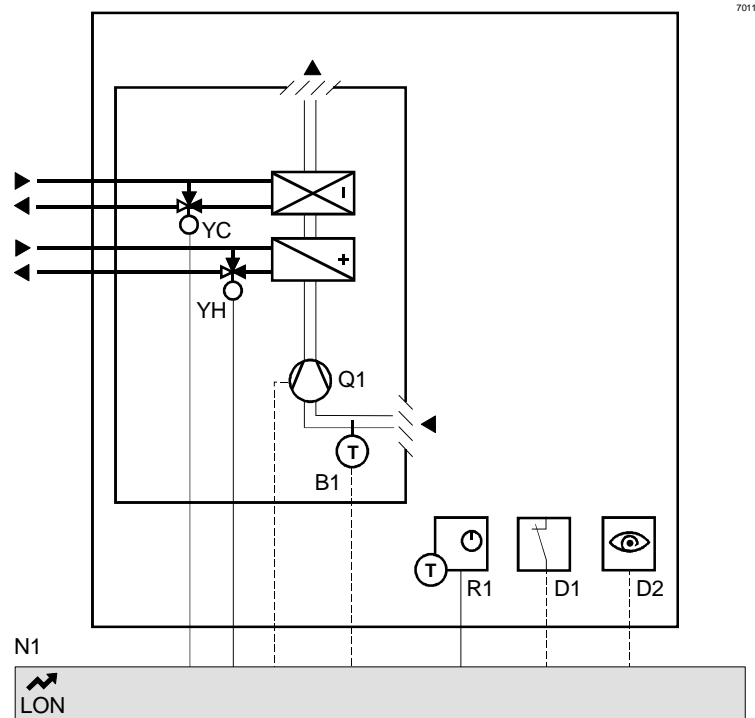




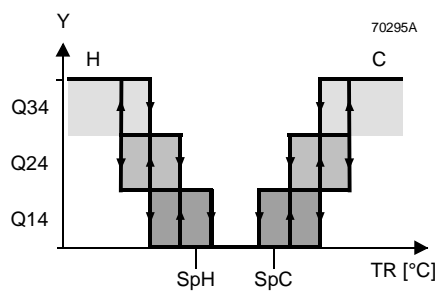
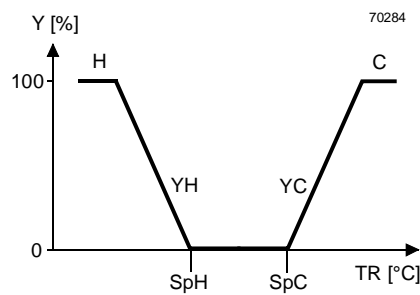
- Heating and cooling with LTHW and CHW resp.
- Modulating control of heating and cooling valve
- Automatic or manual fan control

Plant diagram



- N1 Room temperature controller
- R1 Room unit with temp. sensor
- B1 Return air sensor
- D1 Window switch
- D2 Occupancy sensor
- Q1 Fan (1 ... 3-speed)
- YH Heating valve
- YC Cooling valve

Operating diagrams



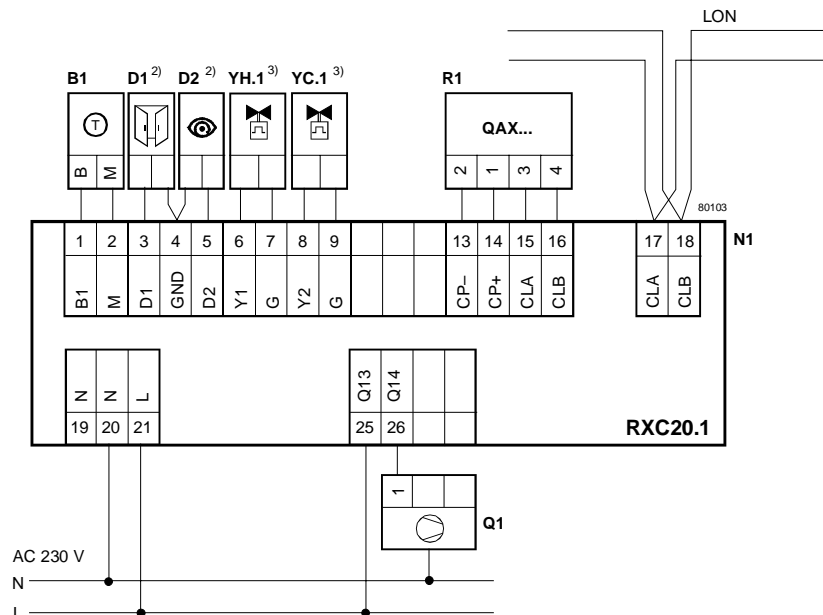
- Y Output signal
- TR Room temperature
- SpH Effective heating setpoint
- SpC Effective cooling setpoint
- H Heating sequence
- C Cooling sequence
- YH Heating valve
- YC Cooling valve
- Q14 Fan speed 1
- Q24 Fan speed 2
- Q34 Fan speed 3

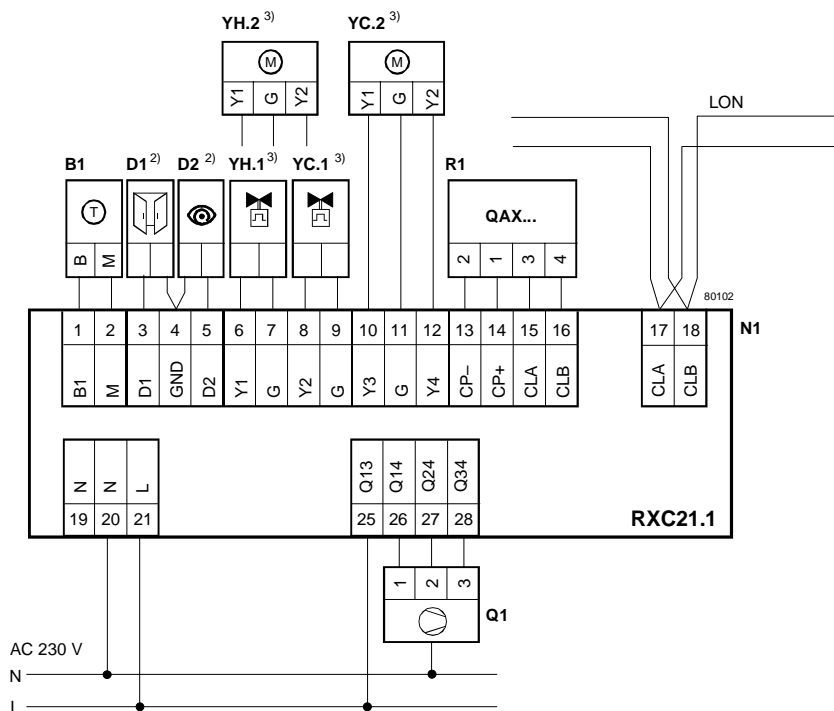
Functions

For details refer to the “FNC” description of functions at the beginning of this section (CA2A3816E00). Application FNC04 includes the following functions:

Function	Brief description	See CA2A3816E00
Four-pipe system	<ul style="list-style-type: none"> – PID control – Two proportional control sequences, heating and cooling – Control of thermic or motorised valve actuators (AC 24 V, PWM or AC 24 V, 3-position) – Valve exercising feature 	6.1 6.3 6.8
Fan control	<ul style="list-style-type: none"> – Single speed (RXC20.1) or 1...3 speeds (RXC21.1), automatic or – Manual with room unit 	7
Temperature measurement	<ul style="list-style-type: none"> – Room temperature sensor or – Return air sensor 	5 7.6
Operating modes	<ul style="list-style-type: none"> – <i>Comfort, Stand-by, Economy and Building protection</i> – Change of operating mode via ⏻/Auto switch on room unit, occupancy sensor, window contact or central command 	2, 3
Setpoint adjustment	<ul style="list-style-type: none"> – Locally via room unit or via central command 	4
General functions	<ul style="list-style-type: none"> – Occupancy sensor – Window switch – Master/slave operation – Boost, night cooling – etc. 	2.2, 8.4 2.2, 8.4 8.2 8.6, 8.7
Room units	<ul style="list-style-type: none"> – Available with temperature sensor, setpoint adjuster, switch for <i>Off/Auto</i> and fan speeds, LCD display 	9
Compatible controllers	FNC04 can be used in conjunction with RXC20.1 and RXC21.1.	

Connection diagrams





- 2) Type of operation (N/O or N/C) can be selected
 3) Do not exceed the max. simultaneous load on outputs Y1 ... Y4: max. 9.5 VA (see data sheet 3834).
 4) Do not connect the fans in parallel (or use cut-off relays).

List of equipment

Ref.	Description	Type	Data sheet
N1	Room temperature controller	RXC20.1 ¹⁾	3834
		RXC21.1	
R1	Room unit	QAX30.1	1741
		QAX31.1	1741
		QAX32.1	1641
		QAX33.1	1642
		QAX34.1	1645
		QAX39.1	1646
		Wireless room unit Receiver	QAX90.1, 91.1 RXZ90.1
B1	Return air sensor	QAM22	1771
		QAP22...	1831
	Room temperature sensor	QAA24	1721
D1	Window contact ²⁾	Third-party device	–
D2	Occupancy sensor ²⁾	Third-party device	–
Q1	Single-speed or 3-speed fan	Third-party device	–
YH.1	Thermic heating valve, 2-position (PWM) control ³⁾	T3W..., T4W...	4829
		STE72	4873
YH.2	Motorised heating valve, (RXC21.1 only) 3-position control ³⁾	SQS81 SSB81...	4575 4891
YC.1	Thermic cooling valve, 2-position (PWM) control ³⁾	T3W..., T4W...	4829
		STE72	4873
YC.2	Motorised cooling valve, (RXC21.1 only) 3-position control ³⁾	SQS81 SSB81...	4575 4891

- 1) Only for use with a 2-position valve actuator
 2) Type of operation (N/O or N/C) can be selected
 3) Do not exceed the max. simultaneous load on outputs Y1 ... Y4: max. 9.5 VA (see data sheet 3834).

Configuration

The parameters below are available with application FNC04. They are set in the RXT10.1 commissioning and service tool in the **Device, Configure, Settings** menu option.

Menu	Parameter	Values/range	Basic setting	
<i>Temperature setpoints</i>	<i>Comfort heating</i>	10 ... 35 °C	21 °C	
	<i>Comfort cooling</i>	10 ... 35 °C	24 °C	
	<i>Stand-by heating</i>	10 ... 35 °C	19 °C	
	<i>Stand-by cooling</i>	10 ... 35 °C	28 °C	
	<i>Economy heating</i>	10 ... 35 °C	15 °C	
	<i>Economy cooling</i>	10 ... 35 °C	35 °C	
	<i>Building protection heating</i>	10 ... 40 °C	12 °C	
	<i>Building protection cooling</i>	10 ... 40 °C	40 °C	
<i>Fan control</i>	<i>Fan speeds</i>	– Manual – Single-stage – 2-stage (RXC21.1 only) – 3-stage (RXC21.1 only)	3-speed (RXC21.1) 1-speed (RXC20.1)	
	<i>Min. run-time</i>	1 ... 10 min	6 min	
	<i>Temperature sensor</i>	– Room air – Return air Time interval, 0:00 ... 1:00 h	Room air 0	
<i>Sequences</i>	<i>Valve type</i>	– STE72 – SQS81 (RXC21.1 only) – SSB81... (RXC21.1 only) – Third-party device (RXC21.1 only)	STE72	
<i>Room unit</i>	<i>Sensor correction</i>	– 3 ... 3 K	0 K	
	<i>Setpoint adjustment range</i>	± 0 ... 10 K	3 K	
	<i>Display of heating/cooling symbol</i>		Enabled	
	<i>Temperature unit</i>	°C or °F	°C	
	<i>Temperature display in normal mode</i>	None / room temp. / setpoint	room temp.	
	<i>Temperature display in setpoint shift mode</i>	Absolute or relative	Absolute	
<i>General functions</i>	<i>Occupancy override time</i>	0 ... 90 min	30 min	
	<i>Receive heartbeat</i>	0 ... 105min	60 min	
	<i>Send heartbeat</i>	0 ... 105min	45 min	
	<i>Occupancy sensor</i> <i>Type of operation:</i>		Digital input 1 or 2	No occ. sensor
			Room occupied: Contact open or closed	Closed
		<i>Switch-off delay</i>	0 ... 90 min	5 min
		<i>Switch-on delay</i>	0 ... 90 min	5 min
	<i>Window switch</i> <i>Type of operation:</i>		Digital input 1 or 2	No window switch
			Window closed: Contact open or closed	Closed
	<i>Master/slave</i>	Master or Slave	Master	
	<i>Heating demand signal</i>		Enabled	
	<i>Cooling demand signal</i>		Enabled	
	<i>Morning boost</i>		Enabled	
	<i>Night cooling</i>		Enabled	
<i>Service LED</i>		Enabled		
<i>Reset shift</i>		Disabled		
LONMARK bindings	See the sections headed "LonMark network variables" and "LonMark binding templates"			

Ordering

Room controllers may be ordered either with the application described above or with the appropriate basic application. Please state the quantity, DESIGO RXC device name, type code and application.

Example 1

15 RXC20.1 individual room controllers with application FNC04 RXC20.1/FNC04

Notes

- The controllers will be delivered with the basic settings shown above.
- Minimum order quantity: 10 controllers

Example 2

2 RXC20.1 room controllers RXC20.1 / 00020

Notes

- The controllers will be delivered with the basic application
- The application can be loaded into the controllers by means of the RXT10.1 tool
- Minimum order quantity: 1 controller

