SIEMENS

enocean



1662P01

DESIGO™ RXB

Gateway EnOcean/KNX

RXZ97.1/KNX

Can be used with:

- DESIGO RXB
- Devices / Systems with KNX Communication
- Wireless receiver with KNX interface
- Evaluation of up to 32 EnOcean room units
- With RXB, other EnOcean functions may also be integrated: switches, window contacts, motion detectors
- Other EnOcean functions (dimming, blinds, light sensors) can be realized in KNX systems
- Powered via KNX bus

In addition to the standard QAX3x room units, wireless units can also be integrated into the RXB room controllers. One of these technologies is called EnOcean. The energy required in the **room unit** is provided by a solar cell. A battery is only required for insufficient lighting.

The Gateway is powered by the KNX bus.

The integration of EnOcean room units (QAX9x.x) occurs via the gateway EnOcean/KNX, RXZ97.1/KNX. Up to 32 EnOcean room units can be integrated. The telegrams received via radio are converted into KNX communication objects.

Type summary

Product No.	Order number	Designation
RXZ97.1/KNX	S55842-Z101	Gateway EnOcean/KNX

Ordering

When ordering, please specify the quantity, designation, product number and order number.

Example:

10 Gateways EnOcean/KNX RXZ97.1/KNX, S55842-Z101

Equipment combinations

EnOcean room units

Product No.	Order number	Designation
QAX95.1	S55623-H100	Wireless and battery-less room unit with EnOcean interface (temperature sensor)
QAX96.1	S55623-H101	Wireless and battery-less room unit with EnOcean interface (temperature sensor with setpoint adjustment)
QAX95.4	S55623-H104	Wireless and battery-less room unit with EnOcean interface (temperature sensor)
QAX96.4	S55623-H105	Wireless and battery-less room unit with EnOcean interface (temperature sensor with setpoint adjuster)
QAX97.4	S55623-H106	Wireless and battery-less room unit with EnOcean interface (temperature sensor with setpoint adjuster, freely programmable button and 2-stage switch)
QAX98.4	S55623-H108	Wireless and battery-less room unit with EnOcean interface (temperature sensor with setpoint adjuster, freely programmable button and 5-stage switch)

Notes

• The RXZ97.1/KNX can be used in all systems using KNX communication.

- With RXB, other EnOcean functions may also be integrated: switches, window contacts, motion detectors
- Other EnOcean functions (dimming, blinds, light sensors) can be realized in KNX systems



Integration of EnOcean room units in Desigo RXB and building automation and control systems

Mechanical design



System requirements

Source software Product data of the RXZ97.1/KNX: Download from DESIGO intranet

> https://intranet1.siemens.com/org/bt/en/business/productssystems/bacs/desigo/ra/des_ra_gax/Pages/des-ra-units.aspx?TabcardNo=6

Download from the internet: <u>http://www.buildingtechnologies.siemens.com/bt/global/en/support/tools/Pages/Do</u> <u>wnloadsforcontroller.aspx</u>

Engineering tool environment

Required for engineering and commissioning: a standard infrastructure using ETS.

Restriction

	Due to technology, a room controller RXB with EnOcean room unit will have a lower control accuracy as a standard room unit QAX3x.
STOP Note!	Radio communications by solar-powered room units can fail under unfavorable lighting conditions. Make sure to plan for appropriate measures to nevertheless ensure proper plant operation.

Engineering KNX

- 1. Import product data for an RXB controller.
- 2. Import product data for the Gateways RXZ97.1/KNX.
- 3. Create ETS project.
- 4. Add device: RXB room controller.
- 5. Add device: Gateway RXZ97.1/KNX.
- 6. Parameterize room controller
- Configure Gateway RXZ97.1/KNX: Configure Channel 1 as "Temperature sensor" (next channels: identical procedure). The following fields appear in the mask:

Channel 1	*	Eurotian of channel 1		
Channel 2		Function of channel 1	Temperature sensor	•
Channel 3		Sending device	Siemens QAX 9x.4	•
Channel 4			-	
Channel 5	-	Slide switch / presence key	Not available	•
Channel 6	5			
Channel 7		Set point adjustment	Not available	•
Channel 8		Multiple contact quitch	and the	
Channel 9		Multiple contact switch	Not available	•
Channel 10				
Channel 11				
Channel 12				

When using the presence key, change "Slide switch / Presence key" to "Presence key".

Channel 1	-	Eurotian of channel 1	-	1
Channel 2			Temperature sensor	
Channel 3		Sending device	Siemens OAX 9x.4	•
Channel 4				
Channel 5	-	Slide switch / presence key	Presence key	•
Channel 6	-			
Channel 7		Set point adjustment	Not available	•
Channel 8		Multiple contract quitch	(
Channel 9		Multiple contact switch	Not available	•
Channel 10				
Channel 11				

When selecting the setpoint adjustment to "Available", the additional entry fields for the setpoint limits appear:

Channel 1	-	Eurotion of channel 1	T-manutum commu	
Channel 2			Temperature sensor	
Channel 3		Sending device	Siemens OAX 9x.4	•
Channel 4			(
Channel 5	_	Slide switch / presence key	Presence key	•
Channel 6	-			
Channel 7		Set point adjustment	Available	•
Channel 8				
Channel 9		Left limit (In ~ C)	-3	(In the second s
Channel 10		Diskt limit (in 90)	-	
Channel 11		Right limit (in -C)	3	
Channel 12		Multiple contact switch	Not available	_
Channel 13		Final Condice Smean	INOL AVAILABLE	
Channel 14				
Channel 15				

When using the multiple contact switch, change "Multiple contact switch" to "Available".

You can leave the default values of the 3 fan speeds.

For correct fan control with the RXB, set "Automatic state inversion" to "Yes (Automatic = 0)".

Channel 1	<u>^</u>	Eurotian of channel 1	F	
Channel 2		runction of channel 1	Temperature sensor	•
Channel 3		Sending device	Siemens OAX 9x.4	*
Channel 4				
Channel 5		Slide switch / presence key	Presence key	•
Channel 6				
Channel 7		Set point adjustment	Available	•
Channel 8				(
Channel 9	-	Leit innit (in - C)	-3	T
Channel 10	-	Pight limit (in 90)	ä	
Channel 11		rogite infine (infice)	3	
Channel 12		Multiple contact switch	Available	•
Channel 13				
Channel 14		Fan speed 1	33	
Channel 15		(in %)		0
Channel 16		Fan speed 2	66	
Channel 17		(in %)	and the	
Channel 18		Fan speed 3	100	
Channel 19		(in %)	100	(
Channel 20		Automatic state inversion	Vac (Automatic = 0)	-
Channel 21		Adomate state inversion	res (Automatic = 0)	

- 8. Create group addresses.
- 9. Bind group addresses with room controller.
- 10. Bind group address with Gateway RXZ97.1/KNX.

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A Topology	-	Number	Name	Object Funct	ion Description	Group Addresses	Length	C	R	w	Т	U	Data Type	Priority
Dynamic Folders		26	Enable fan command value	Input		1/1/5	1 bit	С	-	w	-	-		Low
D Backbone area		11	Fan command value	Input		1/1/4	1 Byte	С	-	w	-	-		Low
I New area		■ ‡ 2	Temporary Comfort Mode	Input		1/1/3	1 bit	С	-	w		-		Low
1.0 Main line		∎ ‡ 6	Setpoint offset	Input		1/1/2	2 Byte	С	1	w	1	7		Low
🔺 📙 1.1 New line		■ ‡ 5	Room temperature input	Input		1/1/1	2 Byte	С	-	w	Т	U		Low
1.1.1 RXZ97.1 Gateway EnOcean		■ ‡ 56	Digital input 1	Output			1 bit	С	R	-	Т	-		Low
▲ 1.1.2 RXB21.1/FC-10 Panel Controller		■ ‡ 55	Effective room operating mode	e Output			1 Byte	С	R	-	т	5		Low
■之 0: Status request - Input		■ ‡ 59	Heat/Cool output	Output			1 bit	С	R	-	т	-		Low
1: Schedule occupancy - Input	٣	■ ‡ 45	Heating coil output	Output			1 Byte	С	R	÷	т	-		Low
Find 🔎 🗘 0/0 🏶 👻		Device object	s / Parameters / Commissi	oning /										
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Topology .														
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A Topology	*	Num	Name	Object Function	on Description	Group Addresses *	Length	С	R	W	т	U	Data Type	Priority
Dynamic Folders	E	∎‡ 4	Channel 1: Automatic			1/1/5	1 bit	с	-	-	т	-		Low
D Backbone area		∎ ‡ 3	Channel 1: Fan speed			1/1/4	1 Byle	с	-	-	т			Low
▲ 1 New area		∎‡ 6	Channel 1: Presence			1/1/3	1 bit	С		2	т	<u>د</u>		Low
1.0 Main line		∎‡ 2	Channel 1: Set value temperatu	re		1/1/2	2 Byte	С	-	-	т	-		Low
▲ I.1 New line		z 1	Channel 1: Temperature			1/1/1	2 Byte	С			т			Low
1.1.1 RXZ97.1 Gateway EnOcean		127	Channel 22: Temperature				2 Byte	С	-	-	т	-		Low
 1.1.2 RXB21.1/FC-10 Panel Controller 	_	121	Channel 21: Temperature				2 Byte	с	1.51	12	т	4		Low
■ ↓0: Status request - Input		z 139	Channel 24: Temperature				2 Byte	с		-	т			Low
=+11- Schadula occupancy - Input	-	z 133	Channel 23: Temperature				2 Byte	с		-	т			Low
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Group Addresses V	_	_		_			_			-	_		_	
🕂 Add Group Addresses 👻 👗 Delete 🛛 🧱	New Dynan	nic Folder												
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Dynamic Folders		88 1	Temp N	o No	-									
RE 1 Main Group		RH 2	SetotShft N	o No										
4 99 1/1 HVAC	_	29 3	Presence N	o No										
99 1/1/1 Temp		89 4	FanCmd N	o No										
29 1/1/2 SetotShft		88 5	FanCmdEn N	p No										
PQ 1/1/3 Presence														
00 1/1/4 FanCmd														
68 1/1/5 Fancmoen														
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SvsOne Router - 0.2.57	-						_					Last us	ed workspace	

11. Download addresses.

A new Gateway RXZ97.1/KNX has the physical address 15.15.255. No group addresses and bindings are occupied to EnOcean devices.



Press the programming key (**Learn Key KNX**) to program physical addresses (EIB/KNX) via the ETS.

The red LED (Learn LED KNX) starts to light up. It goes out again when the device successfully receives the physical address.

12. Download application data ("Partial download" only!).

Link to EnOcean devices

The functions of individual channels must be programmed using the ETS prior to linking to EnOcean devices. One EnOcean room unit can be learned per channel.

Learning mode

The two buttons under the displays are used to operate EnOcean device learning:



Command keys

Start learning mode (from normal operation) Enter Learn:

Next channel (within learning mode)

(left short Enter Learn)

 Left short: Enter Learn:

Start learning mode

- Left long: Erase:
- Right short: **Test**:

Left short:

1.

- Send test telegram(s) • Right long: **Exit Learn**:
 - Exit learning mode

Delete channel

"Long press" = longer than 2 seconds.

Procedure

- 2. Select the first channel (left short Enter Learn) The display indicates the current channel number alternating with the number of connected EnOcean devices. Example: d.0 - 1 - d.0 - 1 means: no room unit (d) is connected; only 1 room unit per channel allowed.
- Press learning button on the room unit. 3. This activates the EnOcean connection. The display indicates the current channel alternating with the number of connected EnOcean devices. Example: d.F - 1 - d.F means: One room unit (d) is connected, no further connection (F) with this channel (1) possible.
- 4. Test (right short Test) The communication objects connected to this channel are sent on the KNX bus, if the group address is occupied.

	5.	Exit learni The Gatev when no c	ng mode way RXZ97.1/KN operation occurs	(le) IX automati within 5 mii	ft long Exit Learn) cally exits learning mode: nutes.
Delete assignments	EnC	Ocean links	to EnOcean dev	ices can be	e deleted as follows:
	• L	eft long	Erase:	Delete cha	annel (in the learning mode)
Note!	• C n P e	Changing the neans of the nerformed. Perform a "For xtension of	he parameters on the ETS will deler Partial download" a system).	or the grou te all EnOc to keep ex	p addresses for the gateway by ean links if a complete download is isting EnOcean links (after changes /
Normal operation	 If e tr c T - 	the telegra ach channel orrespondir he EnOcea The Gate EnOcean It displays channel.	am of an EnOcea el checks if this is is displayed sho ng to the functior an device determ way s only ends telegrams were s zero when a rea	in device was s "his" device rtly on the L n is sent on ines the tra telegrams of received. ceived EnO	as received during normal operation, ce. If yes, the number associated with .CD, and one or more of telegrams the KNX bus. nsmission frequency: on the KNX bus, when the appropriate cean telegram is not assigned to a
Additional EnOcean functions	The RXZ • A • b • C • d • E • F Up t con Only light	e various se 297.1/KNX: : Switching : Dimming : Blinds : Temperat : Window c : Other sen to four links tacts. y one EnOc ting sensors	nsor types are d with stop telegra ure sensor contract sor per channel car cean device can s, motion detecto	splayed as m be learned brs and bina	follows in the LCD for the Gateways d for button sensors and window per channel for temperature sensors, ary inputs.

The devices are supplied ready for operations.

You can mount it to the wall with brads and screws (no included).



A 868 MHz reception antenna is built in (blue wire)

Notes on reception

- The device should be mounted 1 meter below the ceiling in rooms.
- Distance to other transmitters (GSM / DECT / Wireless LAN / EnOcean, etc.) should be at least 2 meters.

For details on positioning of the EnOcean **room units** (transmitters), refer to data sheet CM2N1660, CM2N1663.

Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU 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.

General device data	Operating voltage (from KNX bus)	DC 24 V				
	Power consumption	Approx. 25 mA				
	Interface	KNX				
	Connection terminals	Standard KNX bus connector				
	Mounting	Flush mount.				
	Degree of protection (mounted)	IP20 per EN60529				
Ambient conditions	Operating					
	Temperature	-545 °C				
	Humidity	593% relative humidity (non-condensing)				
	Transport, storage					
	Temperature	-2570 °C				
	Humidity	593% relative humidity (non-condensing)				
Standards, directives and	Product family standard EN50491-x	General requirements for Home and				
approvals		Building Electronic Systems (HBES) and				
		Building Automation and Control Systems				
		(BACS)				
	Electromagnetic compatibility	For use in residential, commerce, light-				
	(Applications)	industrial and industrial environments				
	EU conformity (CE)	CM2T1662xx*				
Housing	Material	Plastic				
	Color	White				
Weight	With / without packaging	70 g / 110 g				

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



Standard KNX bus connector Observe correct polarity!

All dimensions in mm



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