



1661P01, 1661P02

DESIGO™ RXC

Gateway EnOcean/LonWorks

RXZ95.1/LON

For use with:

- DESIGO RXC
- Devices / systems with LONWORKS® communication

-
- **Wireless receiver with LONWORKS® interface FTT10A**
 - **Evaluation of up to 9 EnOcean room units**
 - **Operating voltage AC / DC 24 V**

Use

With the RXC room controllers, wireless room units can be used in place of the QAX3x standard room units. One of the wireless technologies used is EnOcean. Here, the **room unit** is powered by a solar cell. A battery is only needed if light conditions are poor.

The **gateway** requires a separate AC / DC 24 V supply (not in the scope of delivery).

Integration of the EnOcean room units (QAX9x.x) into the system is made via the RXZ95.1/LON EnOcean/LONWORKS gateway. It handles up to 9 EnOcean room units. The telegrams received via radio are converted to LONWORKS standard network variables (SNVT).

Type summary

Product number	Stock number	Designation
RXZ95.1/LON	S55842-Z100	Gateway EnOcean/LONWORKS

An external antenna is included in the delivery.

Ordering

When ordering, please give quantity, designation, product number and stock number.
When ordering, please give, Product number and Stock number.

Example:

10 Gateways EnOcean/LONWORKS, RXZ95.1/LON, S55842-Z100

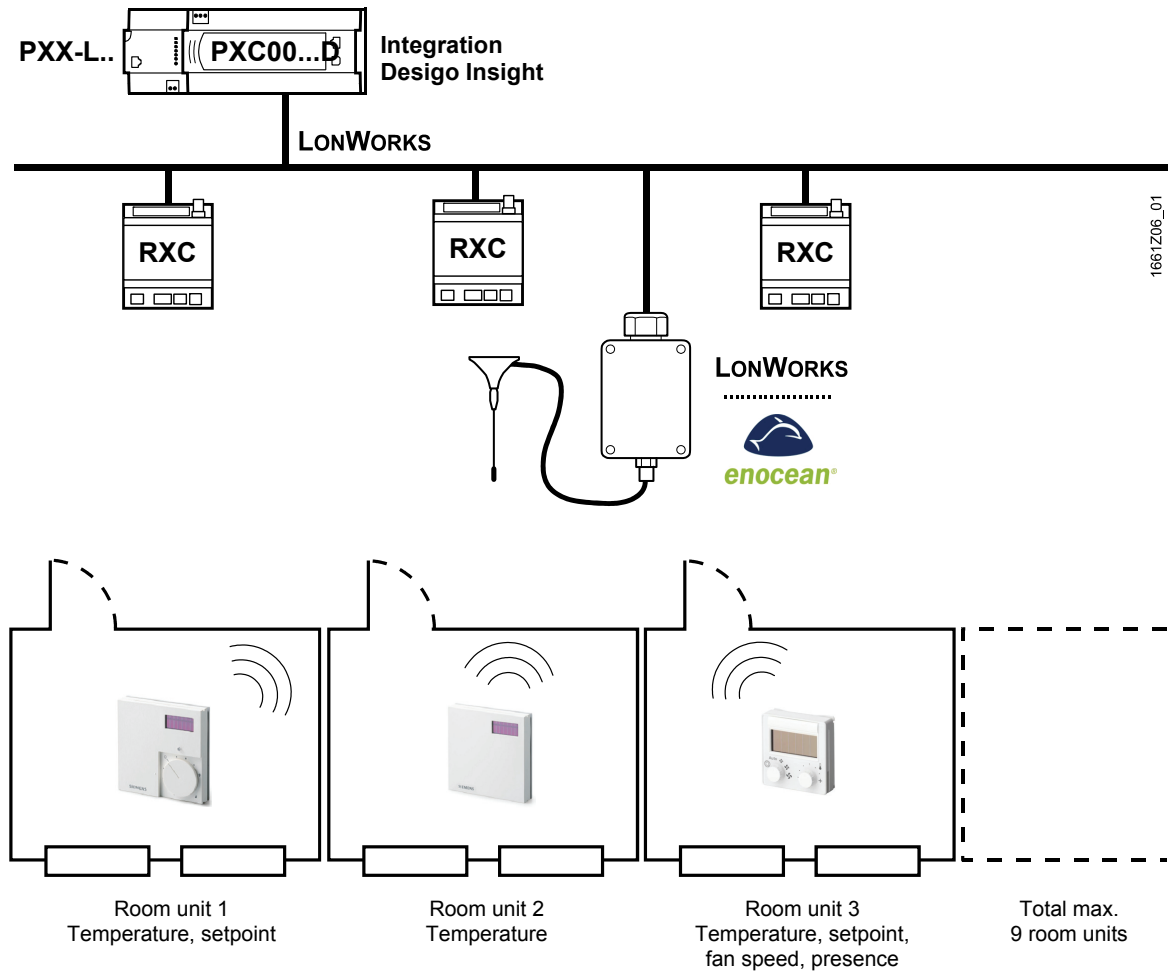
Equipment combinations

EnOcean room units

Product number	Stock 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 adjuster)
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)

Note The RXZ95.1/LON can be used in all systems with LONWORKS communication

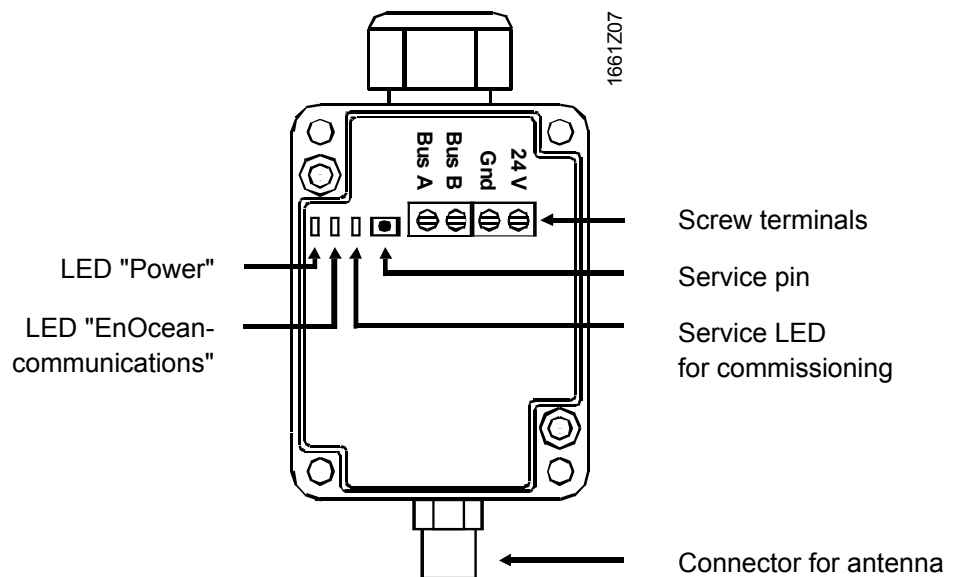
Topology



1661Z06_01

Integration of EnOcean room units into DESIGO RXC

Mechanical design



System requirements

Software LNS PlugIn SRC04-FTT plug-in (template: Thermokon srcn_9_1_02)

Functions:

Monitoring and configuration gateway / room units

For use with RXT10 tool or standard LNS tool

Device resource files: The device resource files contain information about supplier-specific configuration parameters and network variables (UNVTs and UCTPs).
Thermokon_DRF22.exe

Prerequisite for installation is LONMARK® resource files version 13.00 or, alternatively, LonMARK resource file API version 2.3 (bothersome installation).

LONWORKS application srcn_9_1_02.APB; .NXE; .XFB; .XIF; .PDF (if SRC-FTT plug-in is not used)

Software source / documentation

LNS plug-in, device resource files, LONWORKS application:

Download from the DESIGO RX intranet:<https://intranet10.sbt.siemens.com/>

https://intra.industry.siemens.com/bt/global/en/business/building_comfort/systems/desigo/ra/Pages/des-ra-units.aspx?TabcardNo=6

LONMARK resource files version 13.00:

Download from http://www.lonmark.org/technical_resources/resource_files/

Environment for engineering tool

Integration of QAX95.x/QAX96.x: The RXT10 tool or a standard LNS tool can be used.

Integration of QAX97.x/QAX98.x: A standard LNS tool must be used.

Limitations

- With a DESIGO system, it is not possible to integrate additional EnOcean products, such as buttons, presence detectors, etc., via the RXZ95.1/LON gateway with the RXT10 tool.

Reason:

In the gateway, temperature and setpoint adjustment are available as static network variables. However, additional functions are configured dynamically, and the RXT10 does not support dynamic network interfaces.

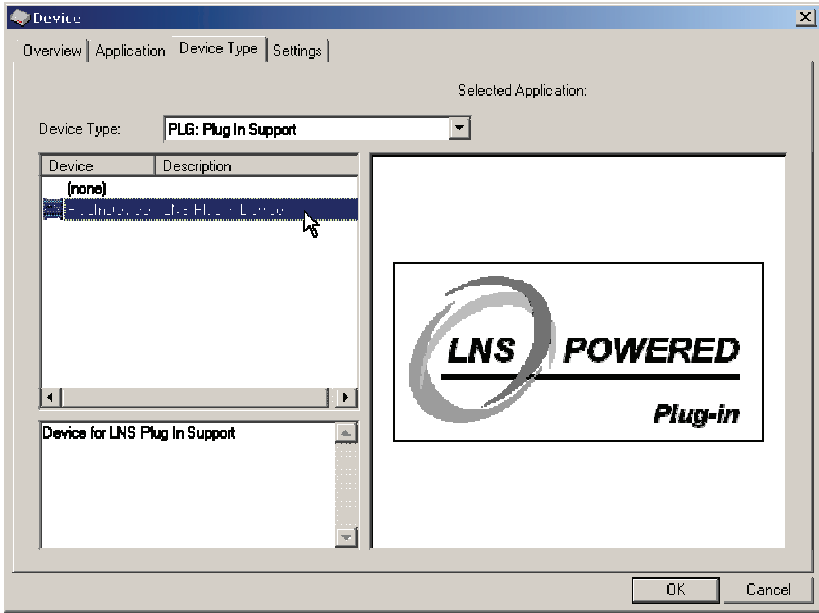
- RXT10 does not support the multifunctional button of the QAX97.4 und QAX98.4 room units.
- For technological reasons, the control performance of an RXC... room controller in connection with an EnOcean room unit is inferior to that with a standard QAX3x room unit

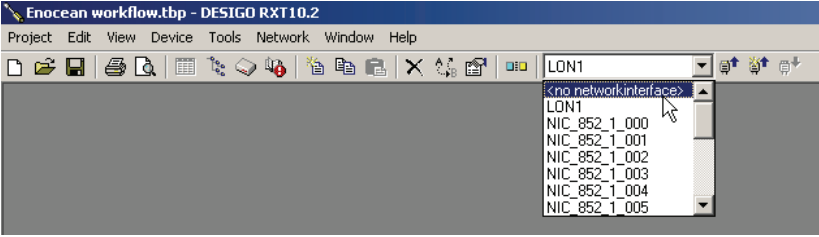
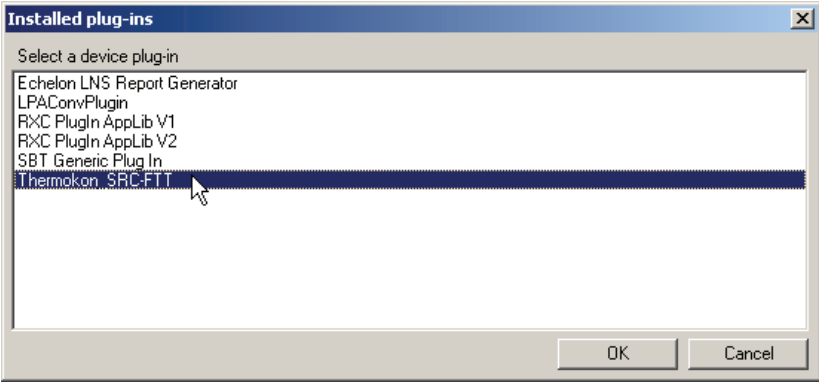
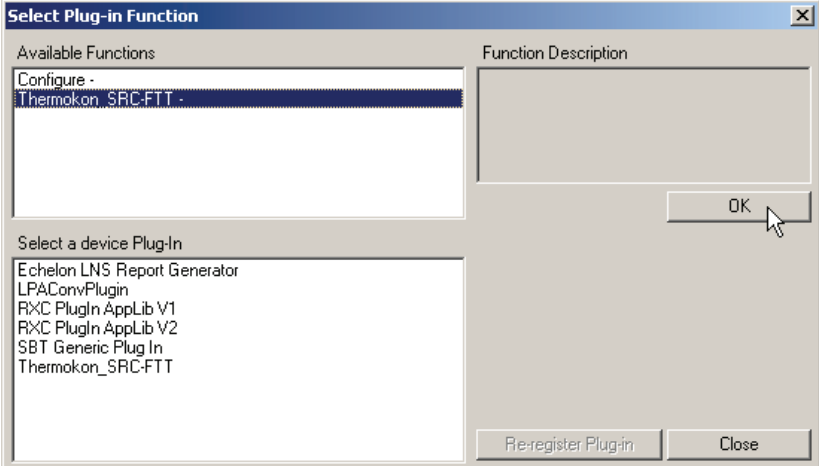
Infrastructure

- Basis:** PC with DESIGO infrastructure
RXT10 version 4 or higher
- Note:** The following components must be installed in the order indicated.
- Step 1:** Installation of LONMARK resource files version 13.00 or higher
Source: http://www.lonmark.org/technical_resources/resource_files/
- Step 2:** Installation of device resource files:
Source: Download from the DESIGO RX intranet:
https://intra.industry.siemens.com/bt/global/en/business/building_comfort/systems/desigo/ra/Pages/des-ra-units.aspx?TabcardNo=6
- Step 3:** Installation of SRC04-FTT plug-in
Source: Download from the DESIGO RX intranet:
https://intra.industry.siemens.com/bt/global/en/business/building_comfort/systems/desigo/ra/Pages/des-ra-units.aspx?TabcardNo=6

Engineering with RXT10 and LNS plug-in

Set up the gateway with the RXT10 tool by following the standard procedure for integration of third-party devices (for details, refer to User Manual RXT10, CM110669).

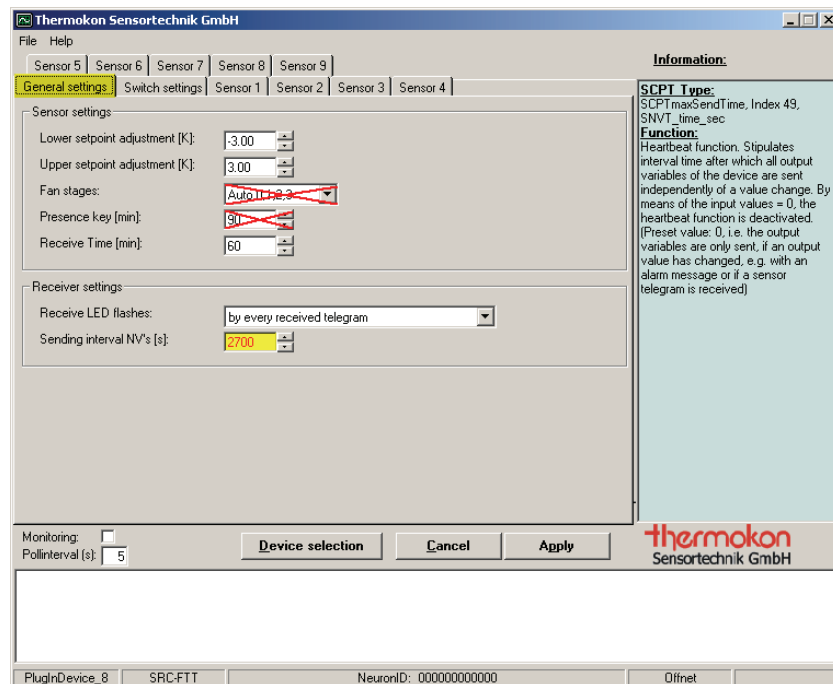
Step	Procedure
1	<p>Device > Add</p> <p>Select tab Device Type. From menu Device Type, select PLG: Plug In Support. On the "Device" list, highlight PlugInDevice.</p> 
2	<p>Select tab Overview and enter the location. Confirm by clicking OK.</p>

Step	Procedure
3	<p>RXT: Select <no networkinterface></p>  <p>Network > Connect (Attached offnet)</p>
4	<p>Device > Configure > Thermokon_SRC-FTT > OK</p>  <p>Confirm message by selecting YES.</p> <p>Select function "Thermokon SRC-FTT" > Click OK.</p>  <p>Confirm message by selecting YES.</p>

Step	Procedure
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5a

Configure the gateway:
Select tab **General settings**:



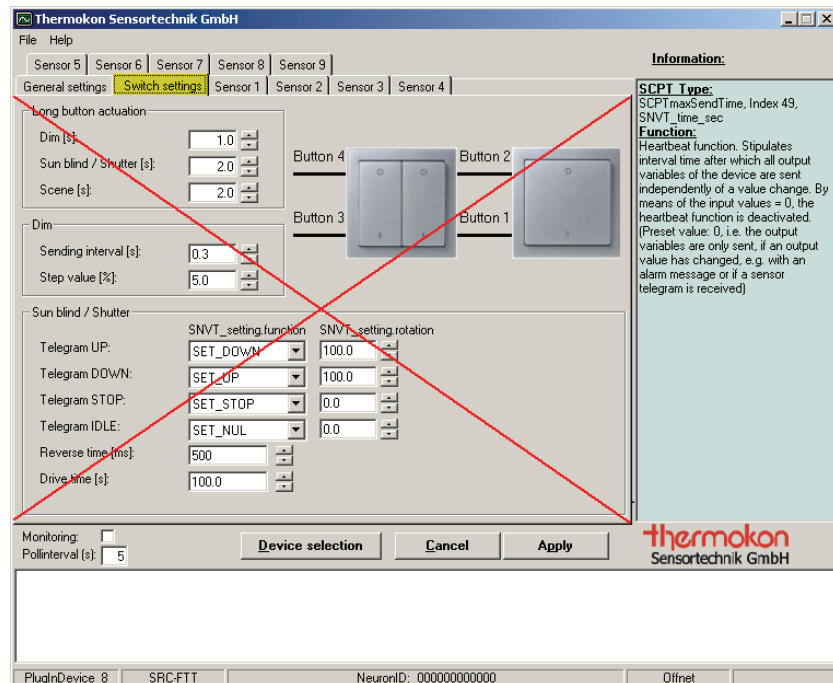
Function not available with the RXT10

Receive time: For monitoring the RF link to the room unit (optional)

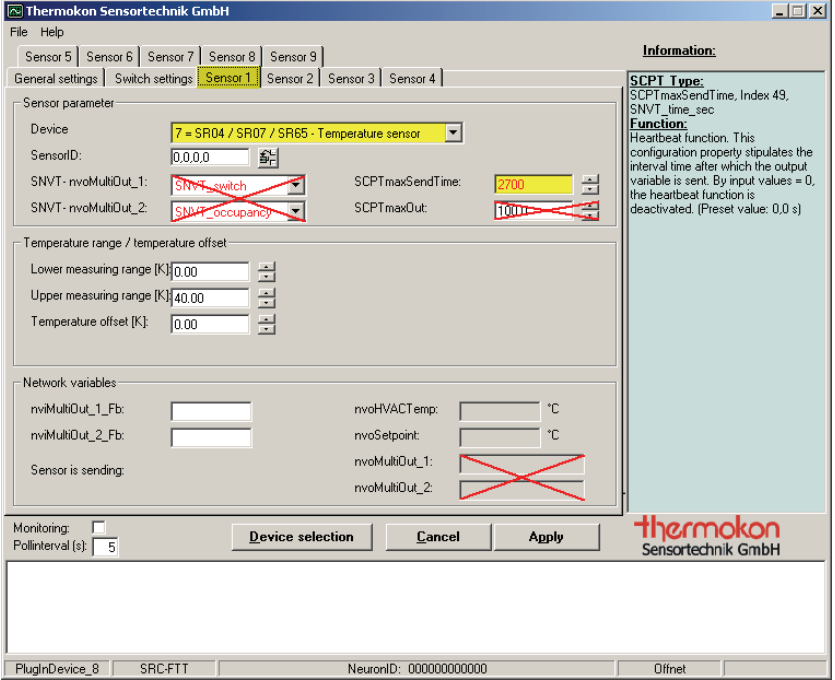

Sending interval: Recommendation: Same as RXC ⇒ Default **2700 [s]** (45 min)

5b

Configure the gateway:
select tab **Switch settings**:



Functions not available with the RXT10

Step	Procedure									
5c	Configure the gateway: select tab Sensor 1...9 :									
	 <p> Function not available with the RXT10.</p> <p>Device: For room units QAX95.1, QAX96.1, select setting 7</p> <p>SensorID: For offline engineering, the EnOcean ID of the room unit can be entered here, if desired. Normally, it is learned-in online (with connection to the network, see step 10).</p> <p>SCPTmaxSendTime: Heartbeat room unit Recommendation: Same as RXC ⇔ Default 2700 [s] (45 min)</p> <p><i>Note relating to SCPTmaxSendTime:</i> With the default setting of 0.0 s (OFF) and in the event the RF link breaks down (faults, no light, etc.), the temperature value in the RXC will change to "invalid" when the heartbeat has elapsed. When using a setting greater than 0.0 s, the temperature value received last will be transmitted.</p>									
6	<p>> Apply (Question "...transmit to device?": Answer with YES) Network > Disconnect (Attached offnet)</p>									
7	<p>Make RXT10 bindings:</p> <table border="0"> <thead> <tr> <th>Datapoint</th> <th>Gateway</th> <th>RXC</th> </tr> </thead> <tbody> <tr> <td>Room Temperature:</td> <td>nvoHVACTemp_x</td> <td>⇔ nviSpaceTemp</td> </tr> <tr> <td>Setpoint Offnet:</td> <td>nvoSetpoint_x</td> <td>⇔ nviSetpointOffset</td> </tr> </tbody> </table>	Datapoint	Gateway	RXC	Room Temperature:	nvoHVACTemp_x	⇔ nviSpaceTemp	Setpoint Offnet:	nvoSetpoint_x	⇔ nviSetpointOffset
Datapoint	Gateway	RXC								
Room Temperature:	nvoHVACTemp_x	⇔ nviSpaceTemp								
Setpoint Offnet:	nvoSetpoint_x	⇔ nviSetpointOffset								
8	<p>Network > Connect (online)</p>									
9	<p>Assign devices and install</p>									

Step	Procedure
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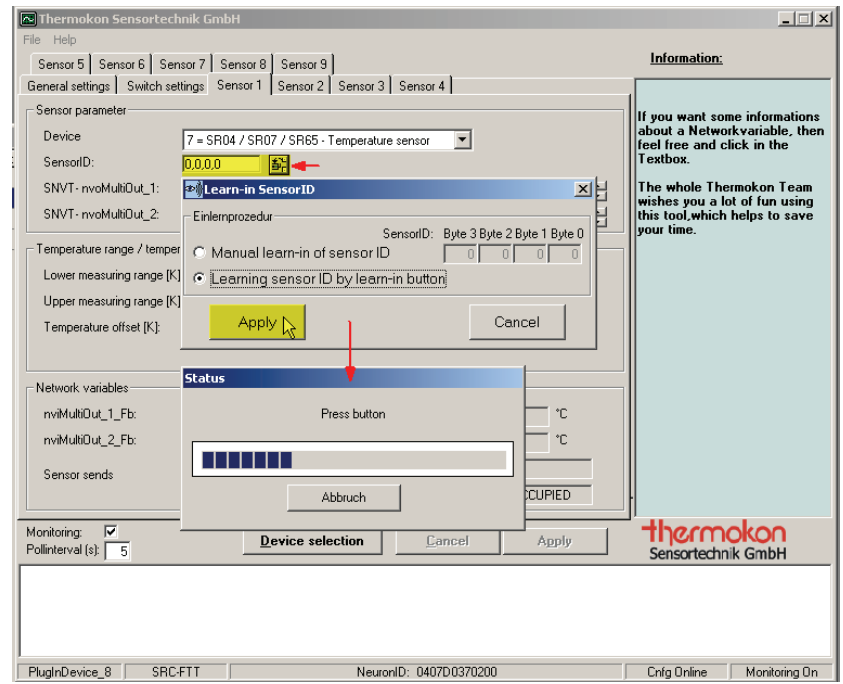
10

Learn-in the room units:

Open Plug-in (**Device > Configure > Thermokon SRC-FTT > OK > YES**)

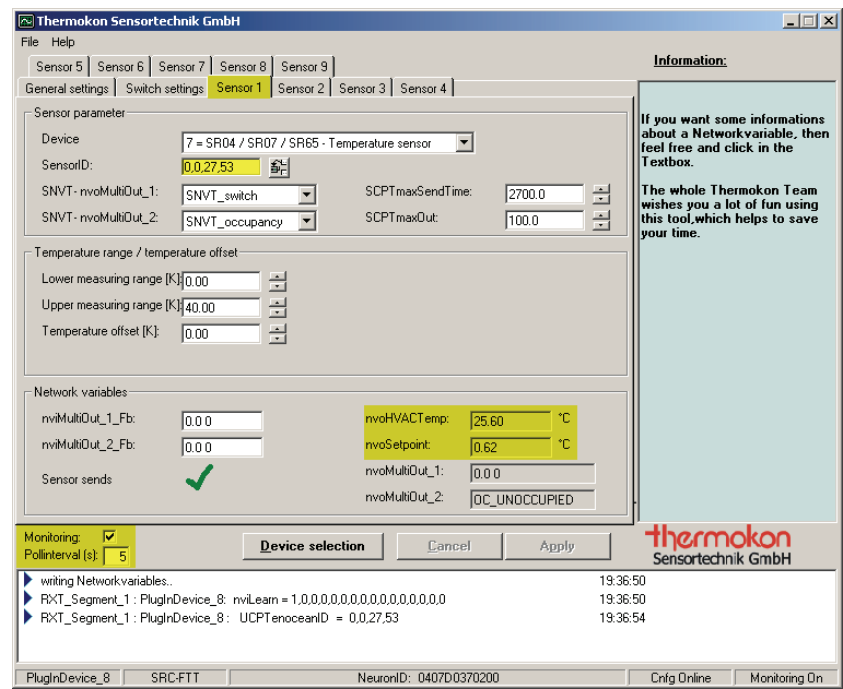
Click button next to SensorID

> **Learn-in** > Press button on the room unit



11

Function check gateway / room unit:

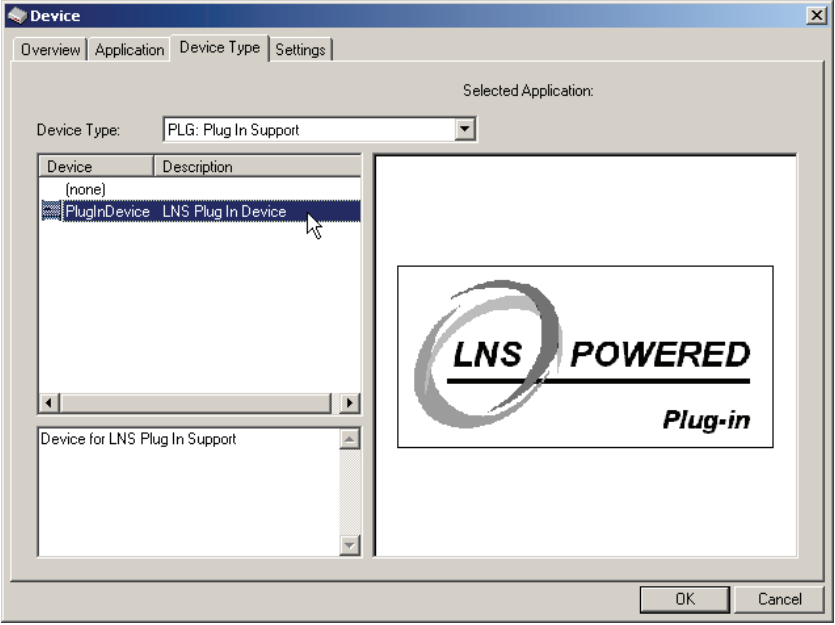
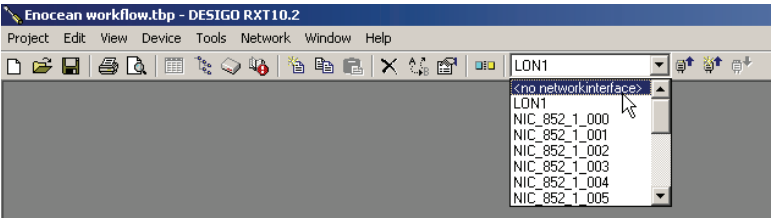


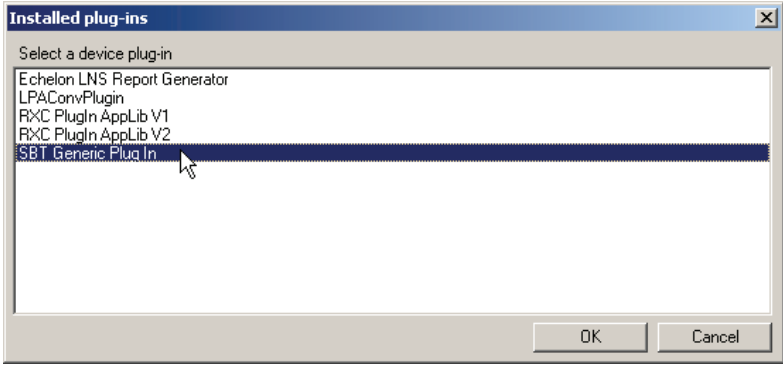
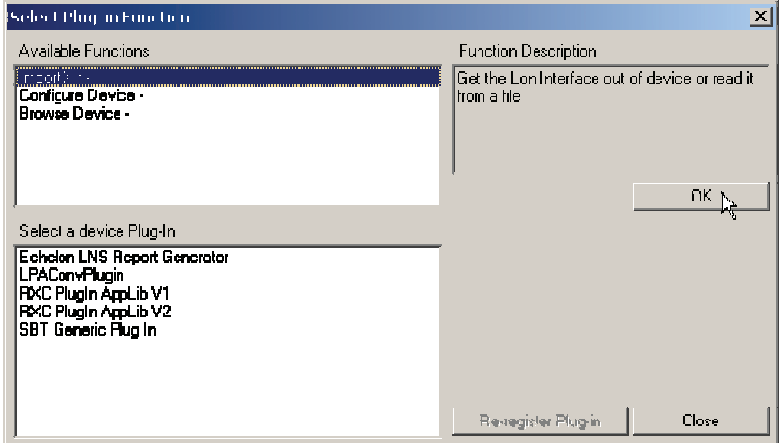
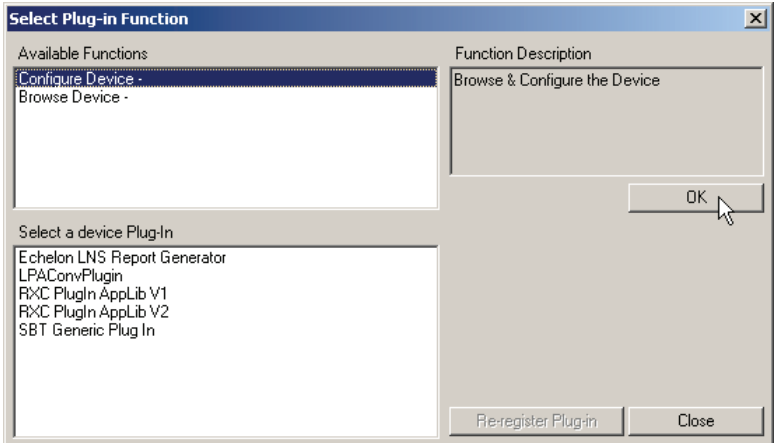
Infrastructure

- Basis:** PC with DESIGO infrastructure
RXT10 version 4 or higher
- Step:** *Download:*
EasySens_Empfaenger_Receiver_SRC04FTT_SRC65FTT_160108_156.zip
Extract and save LON application:
srcn_9_1_01 (.apb; .nxe; .xfb; .xif) / optional: srcn_12_1_01
- Source:** Download from the DESIGO RX intranet:https://intranet10.sbt.siemens.com/business/building_comfort/systems/desigo/ra/ des_ra_qax/ des_ra_qax95.htm

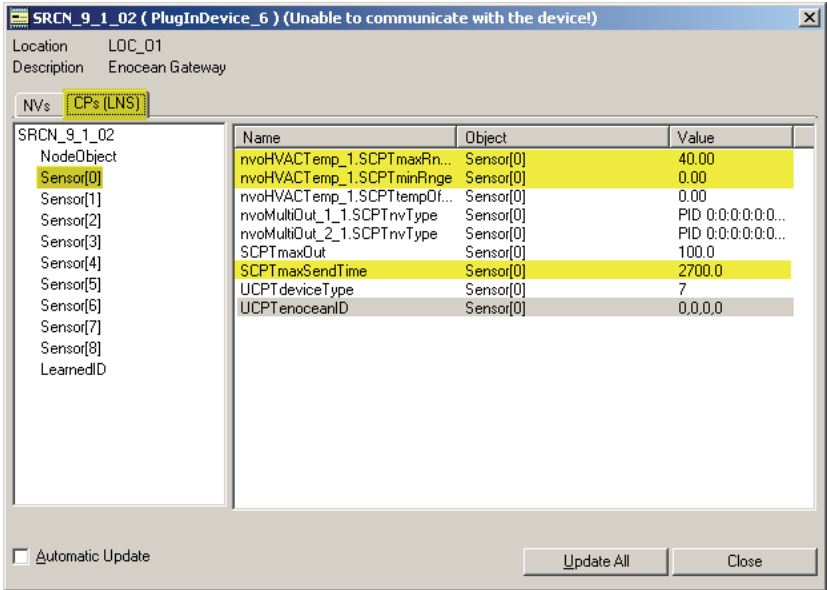
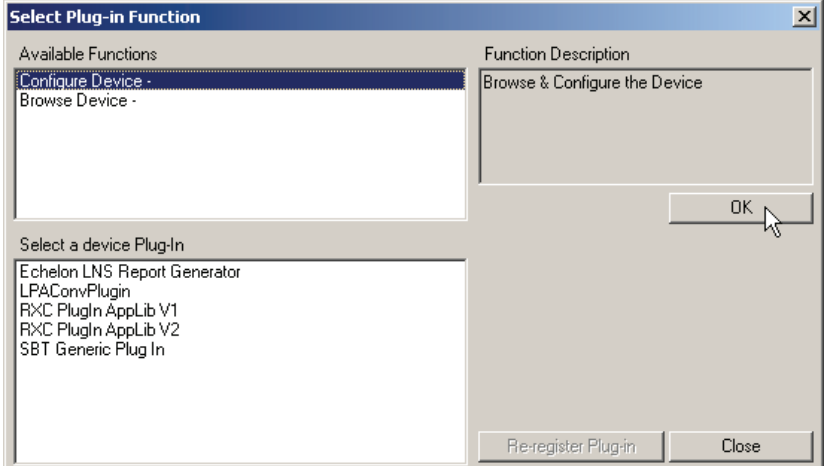
Engineering with RXT10 and XIF-Import

Set up the gateway with the RXT10 tool by following the standard procedure for integration of third-party devices (for details, refer to User Manual RXT10, CM110669).

Step	Procedure
1	<p>Device > Add Select tab Device Type. From selection menu Device Type, select PLG: Plug In Support. On the "Device" list, highlight PlugInDevice.</p> 
2	Select tab Overview to enter the location. Confirm by clicking OK .
3	<p>RXT: Select <no networkinterface></p>  <p>Network > Connect (Attached offnet)</p>

Step	Procedure
4	<p data-bbox="639 152 1246 185">Device > Configure > SBT Generic Plug In > OK</p>  <p data-bbox="639 566 1027 600">Select function Import XIF > OK</p>  <p data-bbox="639 1061 1305 1095">> Read XIF File > Select path for srcn_9_1_02.xif > OK</p> <p data-bbox="639 1106 943 1140">> Select Plug-in > Close</p>
5	<p data-bbox="639 1149 1469 1182">Device > Configure > OK (depending on plug-in: Configure Device)</p> 

Step	Procedure
6	<p>Configure the gateway: Select Node Object</p> <p>SCPTmaxSendTime: Sending interval LONWORKS Recommendation: Same as RXC ⇔ Default 2700 [s] (45 min)</p> <p>UCPTenoceanRcvTm: Receive time For monitoring the RF link to the room unit (optional)</p> <p>UCPTspMax/MinValue: Setpoint Offset (± 3 K, default)</p>

Step	Procedure									
7	<p>Configure the gateway: Select Sensor Object [0...8]</p>  <p>...SCPTmax/minRnge: Measuring range of temperature sensor [0...40 °C, default]</p> <p>SCPTmaxSendTime: Sending interval LONWORKS Recommendation: Same as RXC ⇒ Default 2700 [s] (45min)</p>									
8	<p>> Close > Active Plug-in finish Network > Disconnect (Attached offnet)</p>									
9	<p>Make RXT10 bindings:</p> <table border="0"> <thead> <tr> <th data-bbox="639 1182 920 1216"><i>Datapoint</i></th> <th data-bbox="927 1182 1166 1216"><i>Gateway</i></th> <th data-bbox="1173 1182 1469 1216"><i>RXC</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="639 1216 920 1249">Room Temperature:</td> <td data-bbox="927 1216 1166 1249">nvoHVACTemp_x ⇒</td> <td data-bbox="1173 1216 1469 1249">nviSpaceTemp</td> </tr> <tr> <td data-bbox="639 1249 920 1283">Setpoint Offnet:</td> <td data-bbox="927 1249 1166 1283">nvoSetpoint_x ⇒</td> <td data-bbox="1173 1249 1469 1283">nviSetpointOffset</td> </tr> </tbody> </table>	<i>Datapoint</i>	<i>Gateway</i>	<i>RXC</i>	Room Temperature:	nvoHVACTemp_x ⇒	nviSpaceTemp	Setpoint Offnet:	nvoSetpoint_x ⇒	nviSetpointOffset
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10	<p>Netwok > Connect (online)</p>									
11	<p>Assign devices and install</p>									
12	<p>Device > Configure > OK</p> 									

Step**Procedure****14**

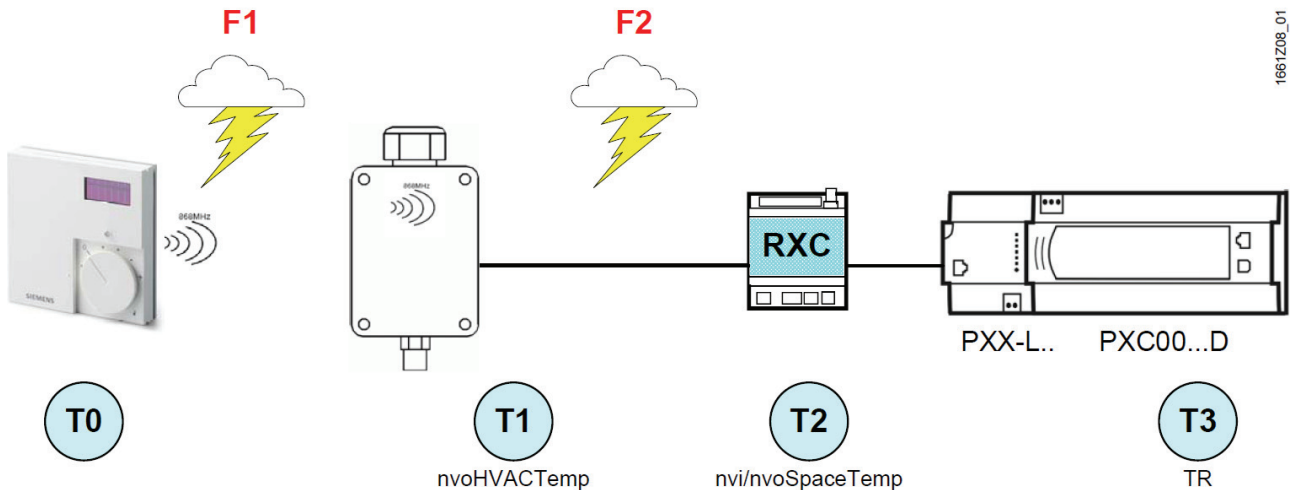
Function check gateway / room unit:

The screenshot shows a software window titled "SRCN_9_1_02 (PlugInDevice_6)". It displays the location "LOC_01" and description "EnOcean Gateway". Below this, there are tabs for "NVs" and "CPs (Device)". A list of objects is shown on the left, including "NodeObject", "Sensor[0]" through "Sensor[8]", and "LearnedID". A table on the right lists parameters with their names, self-documentation, and values.

Name	Self Docu	Value
nviMultiOut_1_Fb_1		0.0 0
nviMultiOut_2_Fb_1		0.0 0
nvoHVACTemp_1		26.20
nvoMultiOut_1_1		SET_OFF 0.0 0.00
nvoMultiOut_2_1		SET_OFF 0.0 0.00
nvoSetpoint_1		0.88

At the bottom of the window, there is a checkbox for "Automatic Update" and two buttons: "Update All" and "Close".

nvoHVACTemp_1: Receive room temperature from room unit**nvoSetpoint_1:** Receive setpoint offset from room unit



F1:
Gateway receives no telegrams from the room unit

Possible causes:

- ⇒ Room unit exhausted ⇒ poor light conditions
Check documentation on room unit
- ⇒ RF link faulty ⇒ distance, interference emitters
Check documentation on room unit
- ⇒ Room unit not / incorrectly learned-in in the gateway (SensorID)
- ⇒ Room unit faulty

Impact on the system:

When UCPTenoceanRcvTm has elapsed, nvoAlarmSensor is set (evaluation optional).

- T0** --
- T1** Last valid value from T0; otherwise 0.0 °C
- T2** With SCPTmaxSendTime ⇒ T1
Without SCPTmaxSendTime ⇒ invalid (327.7 °C) after RXC heartbeat has elapsed (60 min)
- T3** Ditto; if 0.0 °C ⇒ frost alarm

F2:
RXC receives no LONWORKS telegrams from the gateway

Possible causes:

- ⇒ Gateway has no power (power_fail)
- ⇒ Bus interruption
- ⇒ Error in configuration of gateway
- ⇒ Gateway faulty

Impact on the system:

- T0** --
- T1** --
- T2** Invalid (327.7 °C) after RXC heartbeat has elapsed (60 min)
power_fail gateway:
nvo_temp_p = 0.0 °C until room unit sends again (up to approx. 20 min.)
Ohne SCPTmaxSendTime ⇒ T2 = last valid T2
SCPTmaxSendTime < approx. 20 min ⇒ T2 = 0.0 °C (**frost alarm**)
SCPTmaxSendTime > approx. 30 min ⇒ T2 = last valid T2
- T3** Ditto; at 0.0 °C ⇒ **frost alarm**

F10:
Power_up / Power_fail
system

Impact on the system:

- T0** --
- T1** All temperatures = 0.0 °C after Power_fail / Power_up.
Room unit sends current temperature after about 20 to 30 minutes.
- T2** RXC polls the gateway (0.0 °C) and sends value to the system.
- T3** **Frost alarm** (0.0 °C). This state continues until all EnOcean room units have transmitted a valid temperature. This takes about 20 to 30 min, but may take longer than an hour should short breakdowns occur.
If a room unit does not send (e.g. exhausted), frost alarm is maintained until that room unit sends as well.

With each simultaneous power failure of the RXC and the gateway, the system triggers frost alarm for 20 to 30 minutes. The same applies to power-up.

Mounting

The devices are supplied in an operational status.

Installation is made by means of anchors and screws (not included) to the smooth wall surface, or by means of screws to an installation socket .

For operation a separate external 868 MHz receiving antenna is required (included in delivery).

Notes for the radio reception

- The antenna with magnet foot should be mounted on the center of a 180 mm x 180 mm metal plate (galvanized sheet steel).
- In rooms the antenna should be mounted 1 m below the ceiling.
- The antenna should be vertically aligned downwards.
- Minimal distance to the wall: 90 mm.
- Distance to other transmitters (e.g. GSM / DECT/ wireless LAN / EnOcean etc.): min. 2 m.
- The antenna cable shall be routed in an electric conduit.
- Avoid crushing of the antenna cable.
The minimal bend radius of the cable is 50mm.
- As for the cable installation, avoid the use of an active pull-up device, otherwise the sheathing or on the connectors may be damaged.

For details on positioning of the EnOcean room units, refer to data sheet CM2N1660.

Commissioning

Wireless room units are sending time or event controlled telegrams to the gateway. The gateway verifies the incoming telegrams and outputs them directly via its LONWORKS interface.

Each telegram allows a precise allocation and consists of the format: type of the telegram, data, sender ID (32bit).

EnOcean connection

In order to assure a correct evaluation of the measuring values by the gateway, it is necessary to have the devices learned-in by the gateway. This is done automatically by means of a "learn button" at the room unit (or manually by input of the 32bit sensor ID) and a special "learning" procedure between room unit and gateway.

For details, refer to the data sheet of the EnOcean room units, CM2N1660.

LonWorks commissioning

In order to press the service pin, the lid must be opened.

Disposal




The device is classified as waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed of as unsorted municipal waste.

The relevant national legal rules are to be adhered to.

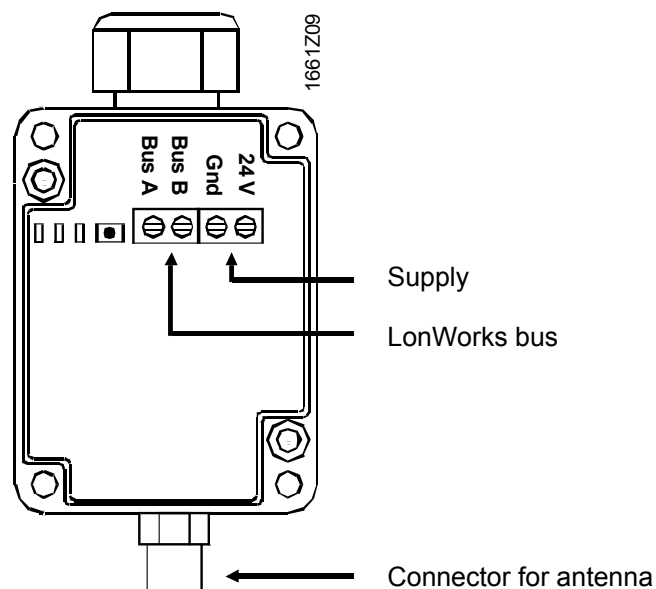
Regarding disposal, use the systems setup for collecting electronic waste.

Observe all local and applicable laws.

Technical data

General device data	Operating voltage	DC 15...24 V AC 24 V +/- 10%	
	Power consumption	0.5W / 0.82VA	
	Interface	LONWORKS Transceiver FTT, free topology	
	Antenna connector	FME female	
	Antenna (included in delivery)	External antenna with magnetic stand	
	Terminals	Screw terminals max. 1,5 mm ²	
	Cable entry	M20 for 1 cable max. D = 8 mm or 2 cables max. D = 7 mm	
	Mounting	Wall mounting	
	Housing protection	Protection	IP42 to EN60529
Ambient conditions	Temperature	-20...60 °C	
	Humidity	max. 70 % r.h. non-condensing	
CE conformity	Electromagnetic Compatibility	89/336/EEC	
	Radio and Telecommunications Terminal Equipment Directive	R&TTE 1999/5/EC	
	 Reduction of hazardous substances	2002/95/EC	
Standards	Electromagnetic compatibility		
	Emission	EN 61000-6-2	
	Immunity	EN 61000-6-3	
	Telecommunications	ETSI EN 301 4893 V.1.4.1	
	Home and building electronic systems (HBES)	EN 50090-2-2	
	Registration for radio operation	EC countries and CH	
Enclosure	Material	ABS	
	Color	white, similar to RAL9010	
Weight	Without / with packaging	173 g / 248 g	

Connection terminals



Dimensions

Dimensions in mm

