



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 16 EnOcean room units
- Operating voltage AC / DC 24 V

Validity

This data sheet is valid for devices with index B and higher.

For devices with index A see [CM2N1661en_02](#).

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 16 EnOcean room units. The telegrams received via radio are converted to LONWORKS standard network variables (SNVT).

Type summary

Product number	Order 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 order number.

Example:

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

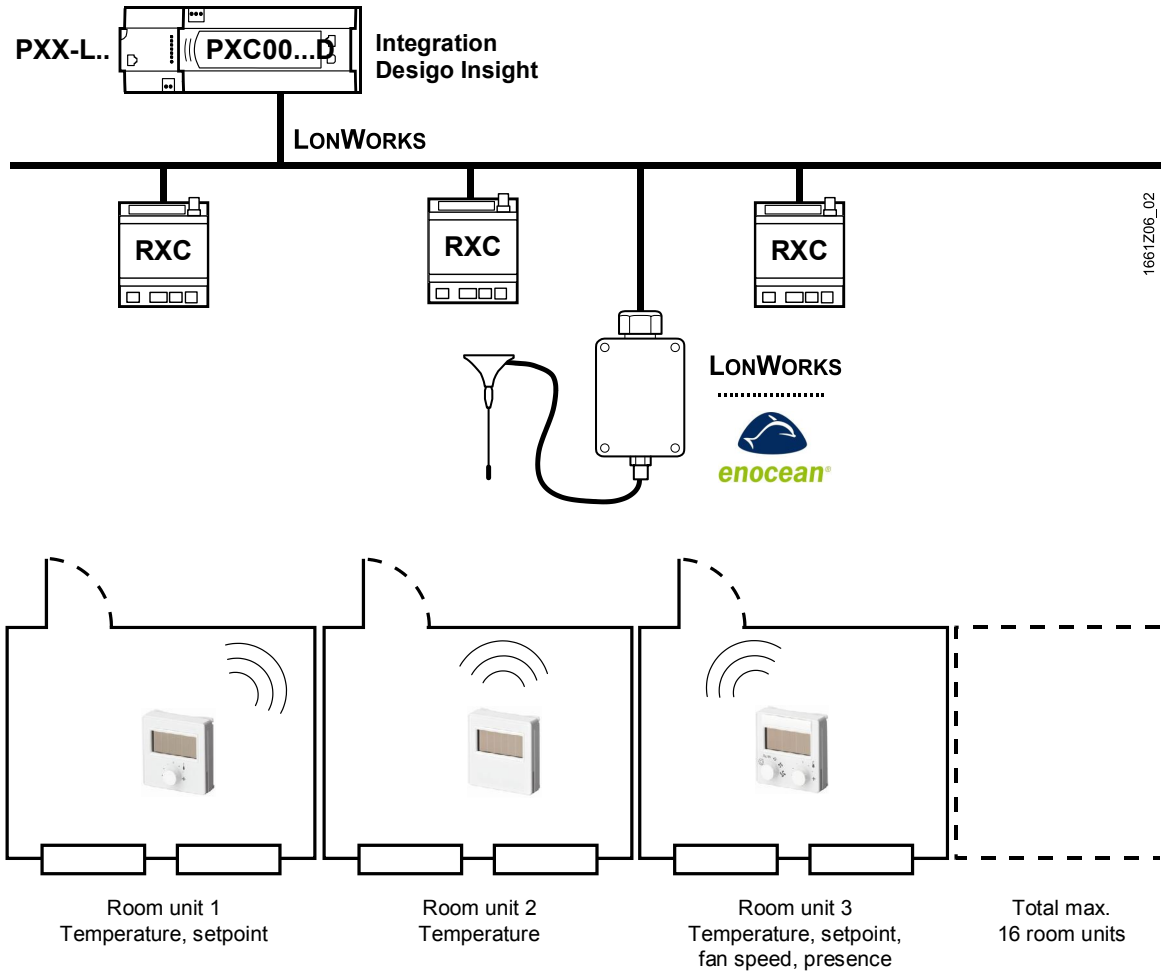
Equipment combinations

EnOcean room units

Product number	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 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)

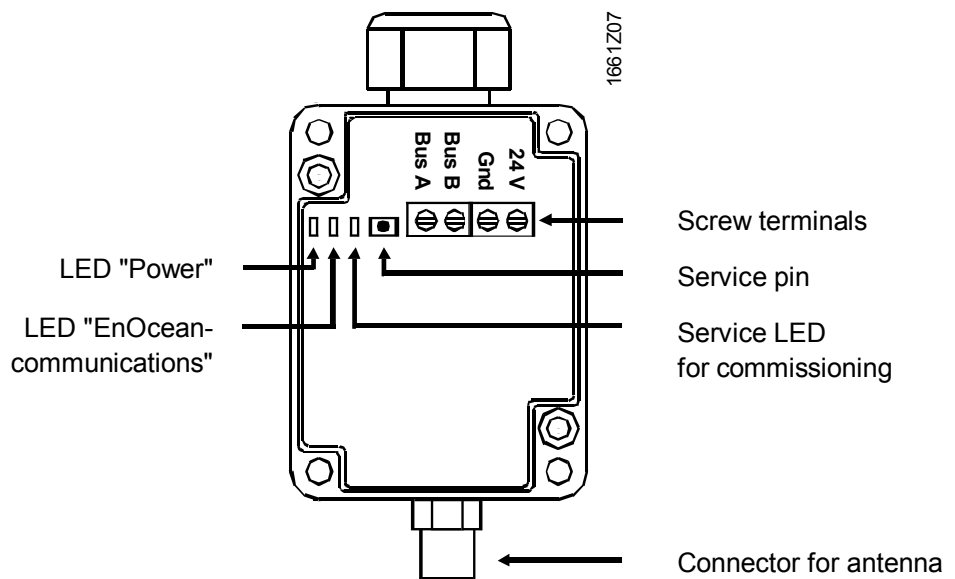
Note The RXZ95.1/LON can be used in all systems with LONWORKS communication

Topology



Integration of EnOcean room units into DESIGO RXC

Mechanical design



System requirements

Software LNS PlugIn

Thermokon_LNS_PlugIn-FT5000 (Template: srca_16_1_01)

Functions:

Monitoring and configuration gateway / room units

For use with RXT10 tool or standard LNS tool

Device resource files: Thermokon_DRF24.exe

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

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

LONWORKS application

srca_16_1_01.XIF; .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://intranet.for.siemens.com/org/bt/en/business/products-systems/bacs/desigo/ra/des_ra_qax/Pages/des-ra-units.aspx?tabcardname=qax95%20/%20qax96%20/%20qax97%20/%20qax98#Downloads
- Plug-In: Thermokon LNS Plug-In_x.x.xxxx.xxxxx_setup.exe
Download from www.thermokon.de/en/media-downloads.html
- 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.

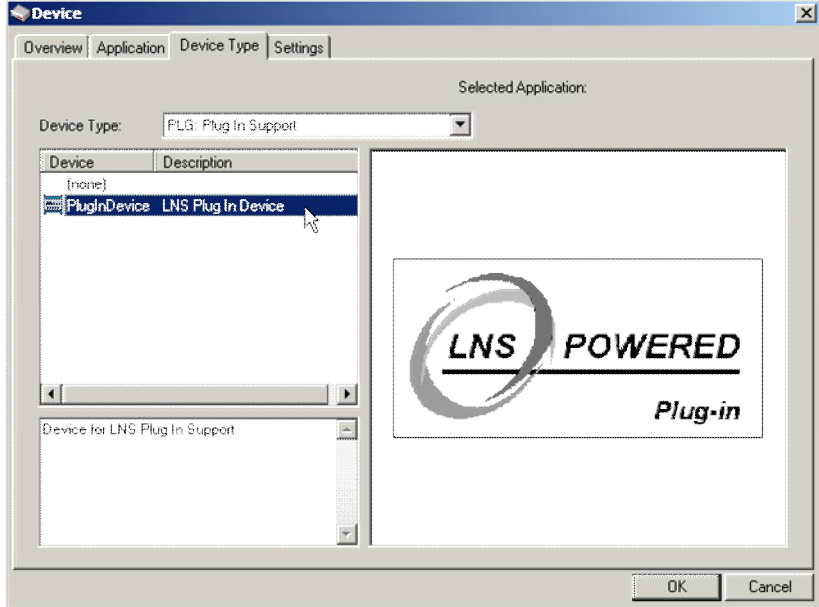
- RXT10 does not support the multifunctional button of the QAX97.4 und QAX98.4 room units.
- For technological reasons, the control performance of an RXC... room controller in connection with an EnOcean room unit is inferior to that with a standard QAX3x room unit

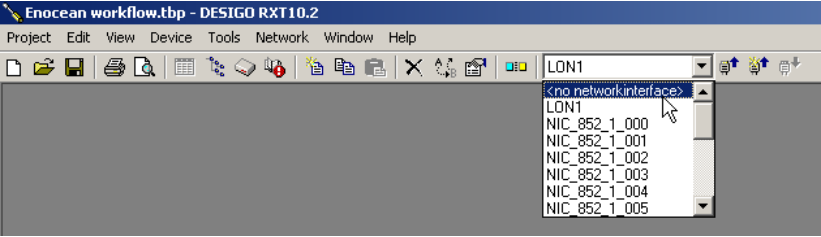
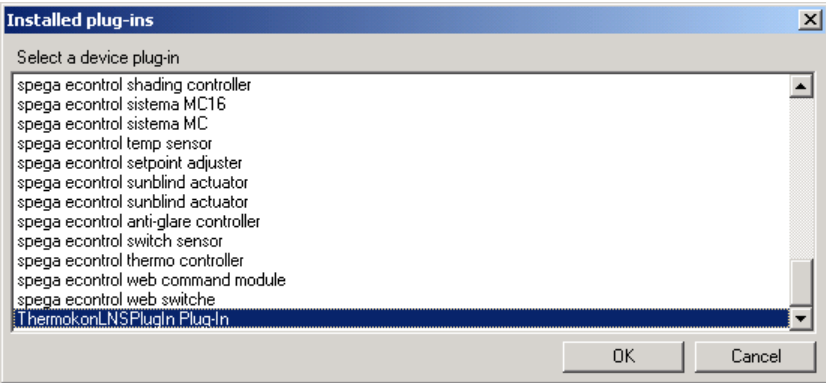
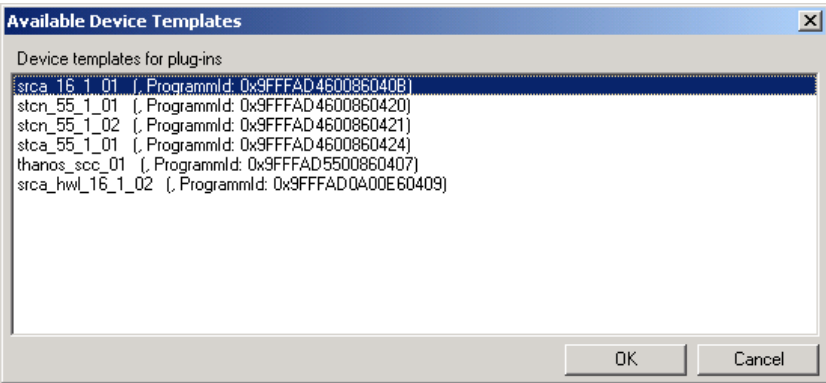

Infrastructure

- 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://intranet.for.siemens.com/org/bt/en/business/products-systems/bacs/desigo/ra/des_ra_qax/Pages/des-ra-units.aspx?tabcardname=qax95%20/%20qax96%20/%20qax97%20/%20qax98#Downloads
- Step 3:** Installation of Thermokon plug-in
Source: Download from the DESIGO RX intranet:
https://intranet.for.siemens.com/org/bt/en/business/products-systems/bacs/desigo/ra/des_ra_qax/Pages/des-ra-units.aspx?tabcardname=qax95%20/%20qax96%20/%20qax97%20/%20qax98#Downloads

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).

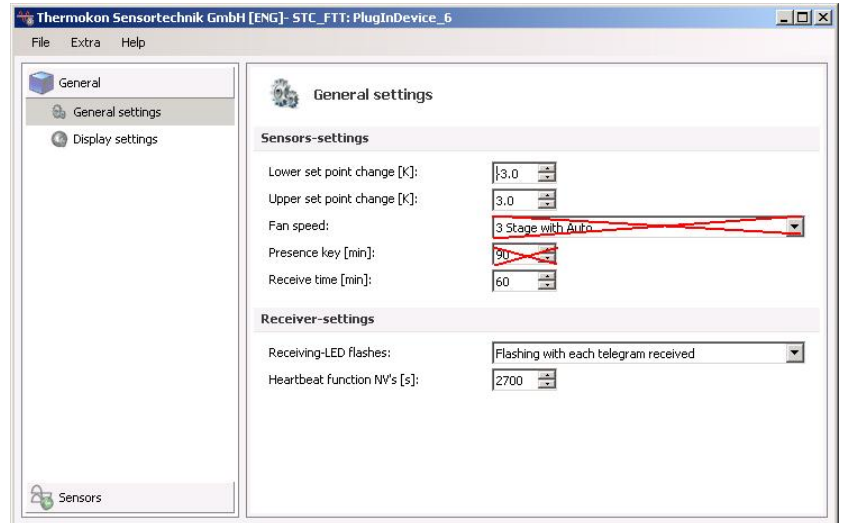
Step	Procedure
1	<p>Device > Add</p> <p>Select tab Device Type. From menu Device Type, select PLG: Plug In Support. On the "Device" list, highlight PlugInDevice.</p> 

Step	Procedure
2	Select tab Overview and enter the location. Confirm by clicking OK .
3	<p>RXT: Select <no networkinterface></p>  <p>Network > Connect (Attached offnet)</p>
4	<p>Device > Configure > ThermokonLNSPlugIn.Plug-In > OK</p>  <p>Select device template "srca_16_1_01" > OK</p>  <p>Select function "ThermokonLNSPlugIn Device Configuration" > Click OK.</p>  <p>Confirm message by selecting YES.</p>

Step	Procedure
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5a

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



Receive time:

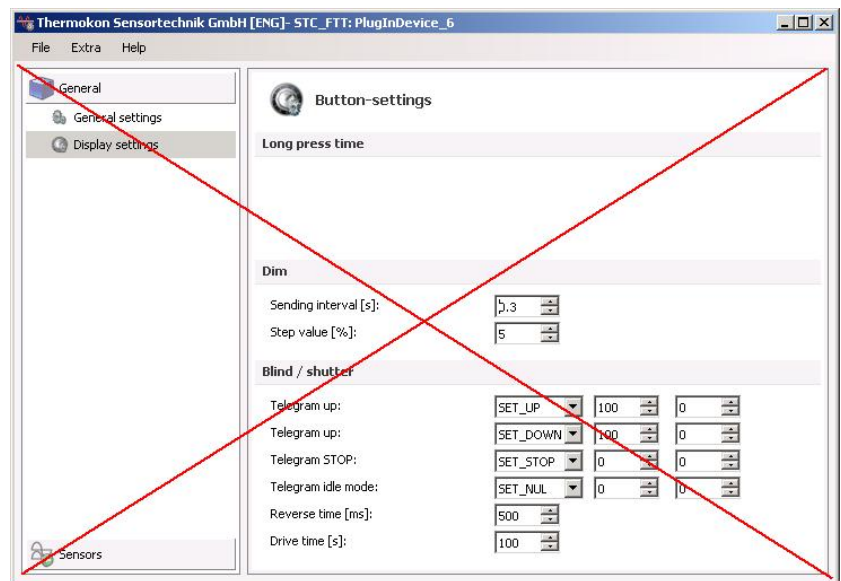
Function not available with the RXT10
For monitoring the RF link to the room unit (optional)

Sending interval:

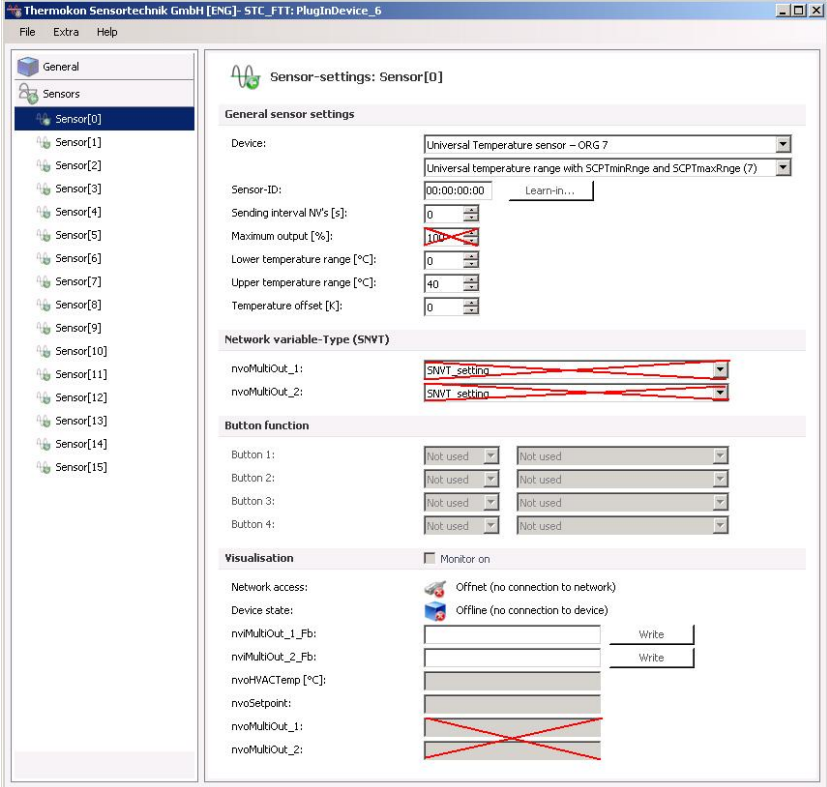

Recommendation: Same as RXC ⇒ Default **2700 [s]** (45 min)

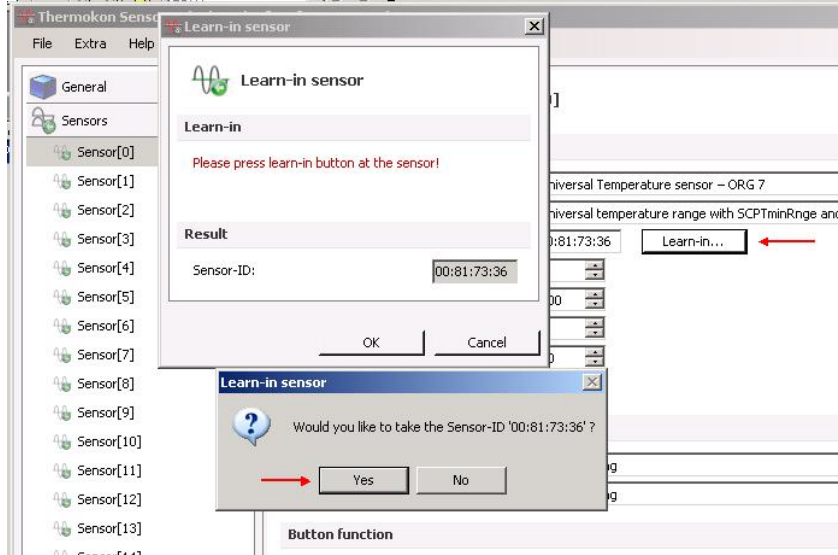
5b

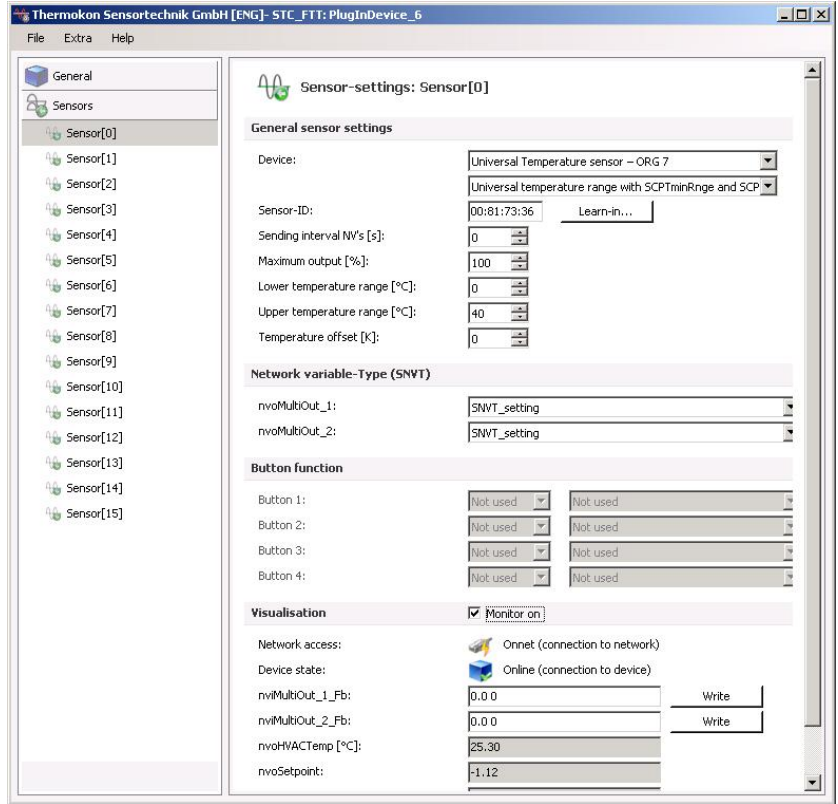
Configure the gateway:
select tab **Switch settings**:



Functions not available with the RXT10

Step	Procedure												
5c	<p>Configure the gateway: select tab Sensor 1...16:</p>  <p> Function not available with the RXT10.</p> <p>Device: For room units QAX95.x, QAX96.x, 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 data-bbox="603 1839 874 1872">Datapoint</th> <th data-bbox="890 1839 1129 1872">Gateway</th> <th data-bbox="1145 1839 1177 1872"></th> <th data-bbox="1193 1839 1401 1872">RXC</th> </tr> </thead> <tbody> <tr> <td data-bbox="603 1877 874 1910">Room Temperature:</td> <td data-bbox="890 1877 1129 1910">nvoHVACTemp_x</td> <td data-bbox="1145 1877 1177 1910">⇨</td> <td data-bbox="1193 1877 1401 1910">nviSpaceTemp</td> </tr> <tr> <td data-bbox="603 1915 874 1948">Setpoint Offnet:</td> <td data-bbox="890 1915 1129 1948">nvoSetpoint_x</td> <td data-bbox="1145 1915 1177 1948">⇨</td> <td data-bbox="1193 1915 1401 1948">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										

Step	Procedure
8	Network > Connect (online)
9	Assign devices and install
10	<p>Learn-in the room units: Open Plug-in (Device > Configure > ThermokonLNSPlugIn Device Configuration > OK > YES) Click button next to SensorID > Learn-in > Press button on the room unit</p> 

11	<p>Function check gateway / room unit:</p> 
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Infrastructure

Basis: PC with DESIGO infrastructure
RXT10 version 4 or higher

Step: Download:
SRC04_SRC65-FTT.zip

Extract and save LON application:

..\2_LON-Software\1_deutsch\EasySens, Funk-Empfangsmodule\SRC04_SRC65-FTT\srca_16_1_01\srca_16_1_01.XIF (.apb; .nxe; .xfb; .xif)

Source: www.thermokon.de/en/media-downloads.html

Media & Downloads - Thermokon Sensortech...
www.thermokon.de/en/media-downloads.html

Products Thermokon Product-Highlights **Media & Downloads** News Contact

Home > Media & Downloads

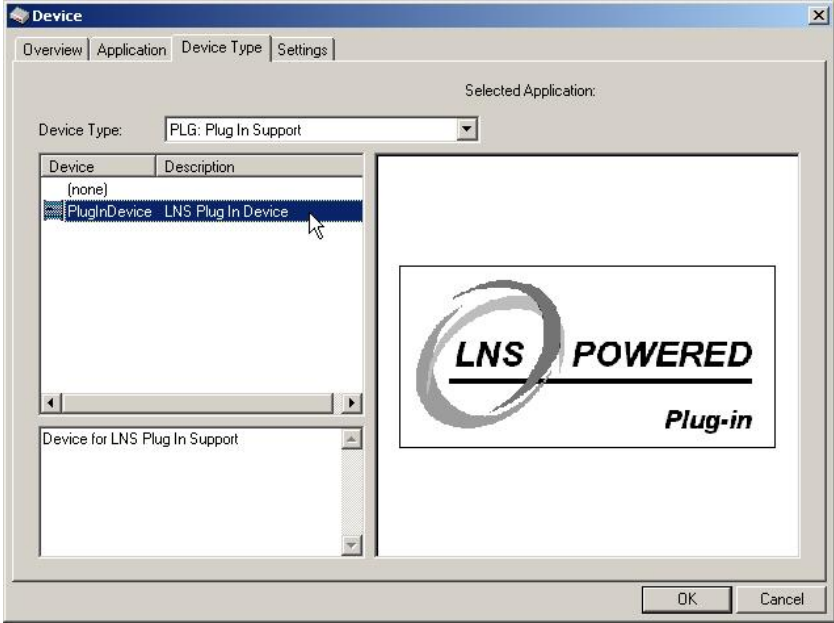
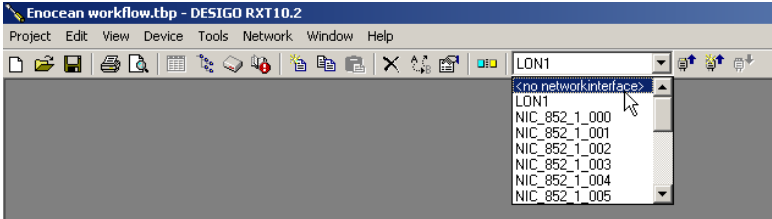
Media & Downloads

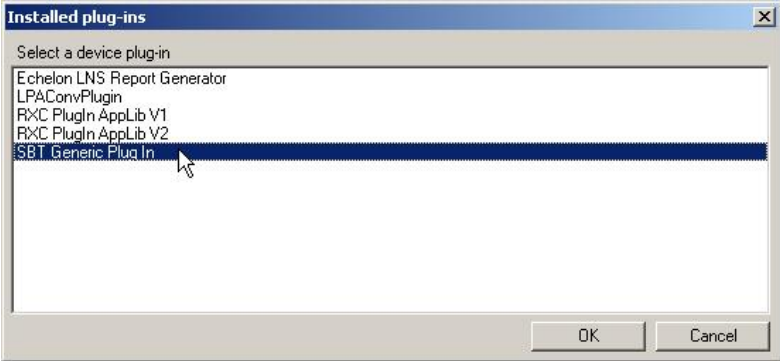
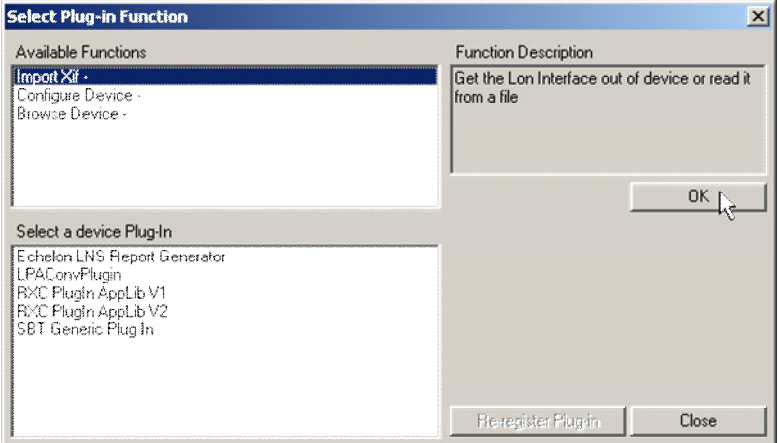
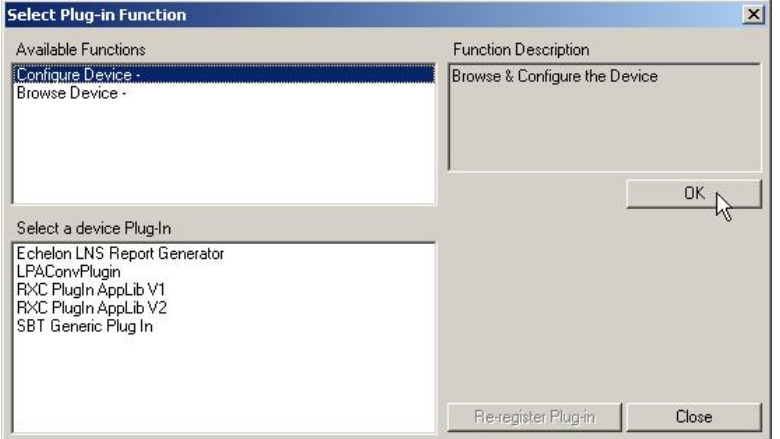
Software LON » English **EasySens** « Back to overview

Additional files

Preview	Type	Name	Size	Date
	zip	SRC04_SRC65-FTT.zip	1,69 MB	08.04.2016
	zip	STC04_STC65-FTT.zip	1,26 MB	08.04.2016

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

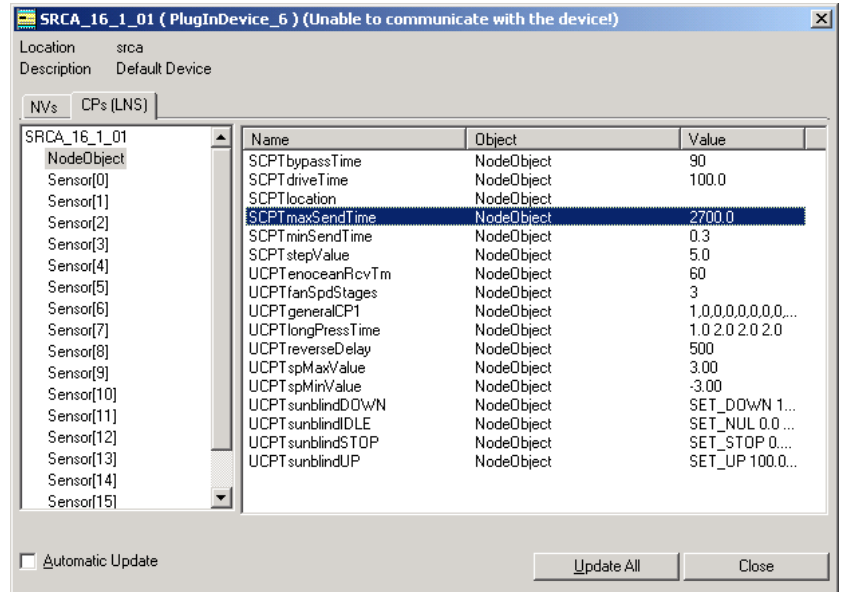
Step	Procedure
4	<p data-bbox="603 152 1209 185">Device > Configure > SBT Generic Plug In > OK</p>  <p data-bbox="603 566 991 600">Select function Import XIF > OK</p>  <p data-bbox="603 1064 1299 1097">> Read XIF File > Select path for srca_16_1_01.XIF > OK</p> <p data-bbox="603 1108 903 1142">> Select Plug-in > Close</p>
5	<p data-bbox="603 1149 1430 1182">Device > Configure > OK (depending on plug-in: Configure Device)</p> 

Step	Procedure
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6

Configure the gateway:

Select **Node Object**



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

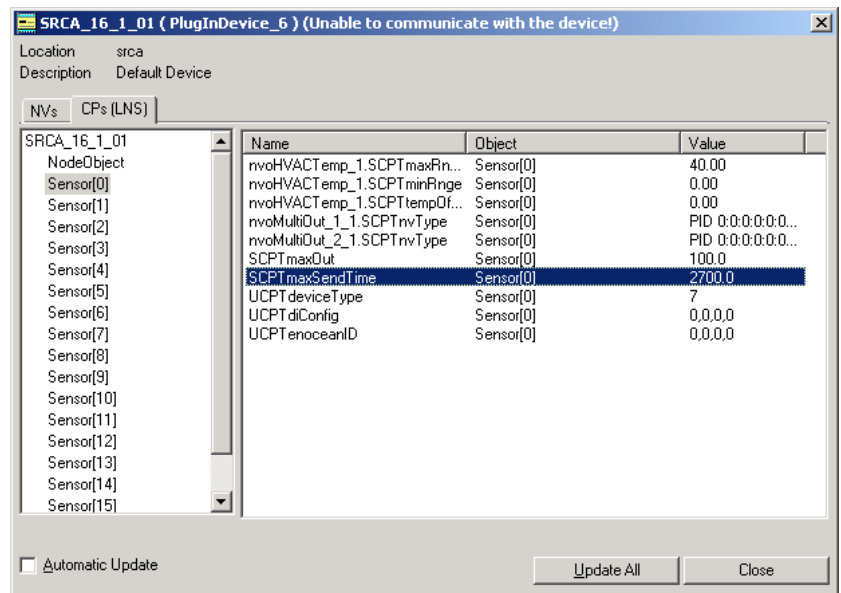
UCPTenoceanRcvTm: Receive time
 For monitoring the RF link to the room unit (optional)

UCPTspMax/MinValue: Setpoint Offset (± 3 K, default)

7

Configure the gateway:

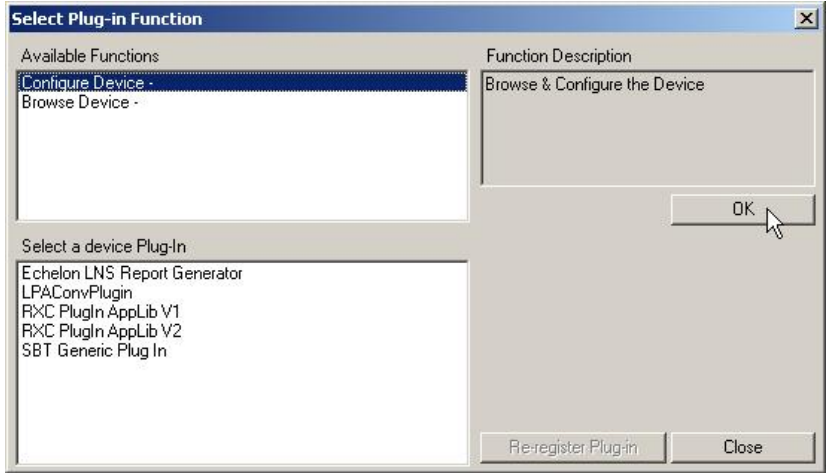
Select **Sensor Object [0..15]**

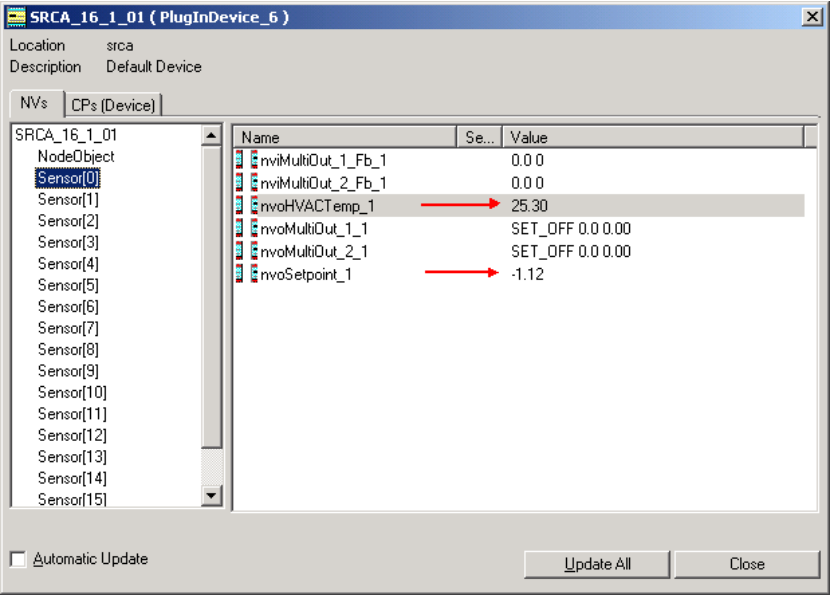


...SCPTmax/minRnge: Measuring range of temperature sensor
 [0...40 °C, default]

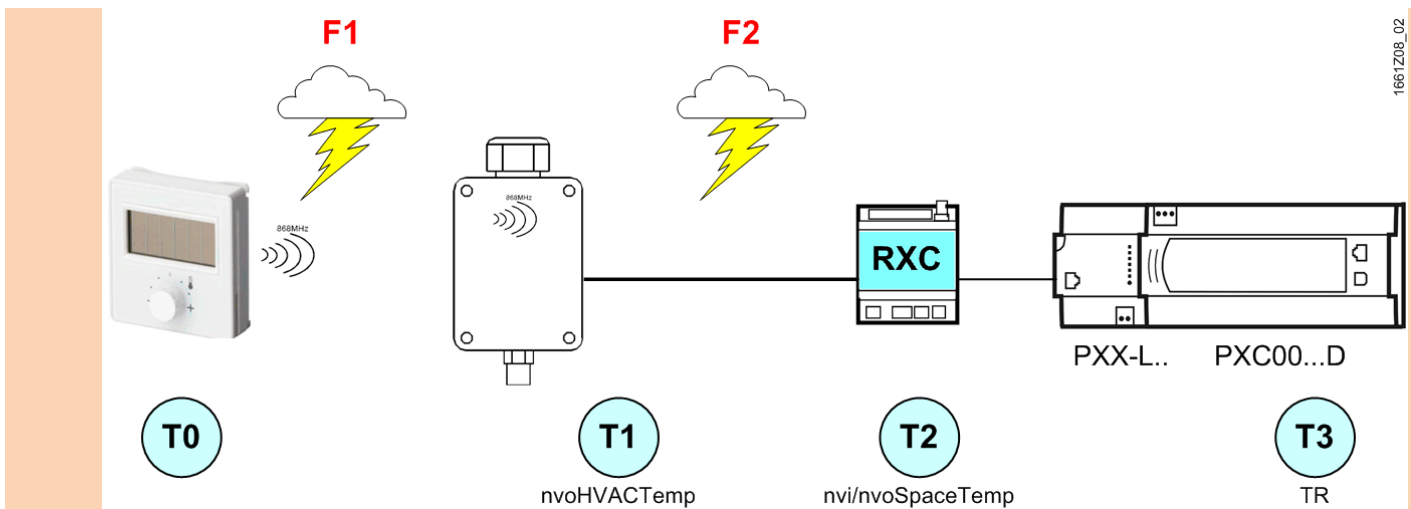
SCPTmaxSendTime: Sending interval LONWORKS
 Recommendation: Same as RXC ⇔
 Default **2700 [s]** (45min)

Step	Procedure												
8	> Close > Active Plug-in finish Network > Disconnect (Attached offnet)												
9	Make RXT10 bindings: <table border="0"> <thead> <tr> <th><i>Datapoint</i></th> <th><i>Gateway</i></th> <th></th> <th><i>RXC</i></th> </tr> </thead> <tbody> <tr> <td>Room Temperature:</td> <td>nvoHVACTemp_x</td> <td>⇒</td> <td>nviSpaceTemp</td> </tr> <tr> <td>Setpoint Offnet:</td> <td>nvoSetpoint_x</td> <td>⇒</td> <td>nviSetpointOffset</td> </tr> </tbody> </table>	<i>Datapoint</i>	<i>Gateway</i>		<i>RXC</i>	Room Temperature:	nvoHVACTemp_x	⇒	nviSpaceTemp	Setpoint Offnet:	nvoSetpoint_x	⇒	nviSetpointOffset
<i>Datapoint</i>	<i>Gateway</i>		<i>RXC</i>										
Room Temperature:	nvoHVACTemp_x	⇒	nviSpaceTemp										
Setpoint Offnet:	nvoSetpoint_x	⇒	nviSetpointOffset										
10	Network > Connect (online)												
11	Assign devices and install												
12	Device > Configure > OK												



Step	Procedure
14	<p>Function check gateway / room unit:</p>  <p>nvoHVACTemp_1: Receive room temperature from room unit</p> <p>nvoSetpoint_1: Receive setpoint offset from room unit</p>

Sources of errors



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 considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

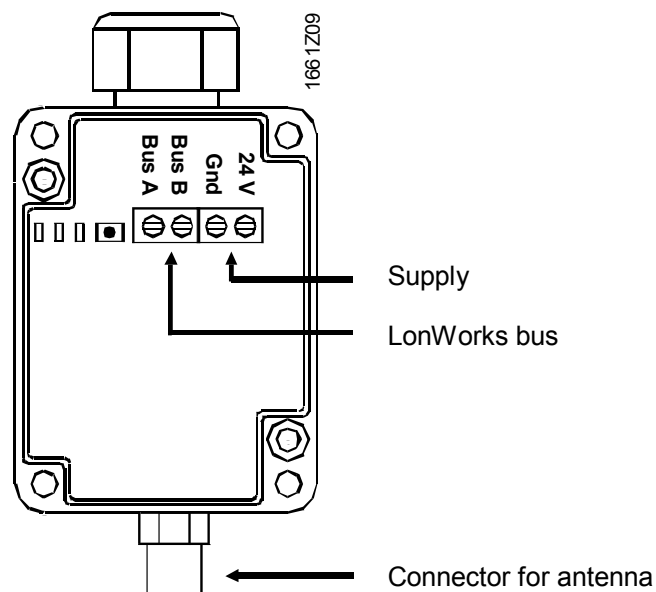
- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

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
Housing protection	Mounting	Wall mounting
	Protection	IP42 to EN60529
Ambient conditions	Temperature	-20...60 °C
	Humidity	max. 70 % r.h. non-condensing
Standards, directives and approvals	Product standard	EN 60730-1 Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commercial, light-industrial and industrial environments
	EU conformity (CE)	CM2T1661xx *)
Enclosure	Material	ABS
	Color	white, similar to RAL9010
Weight	Without / with packaging	173 g / 248 g

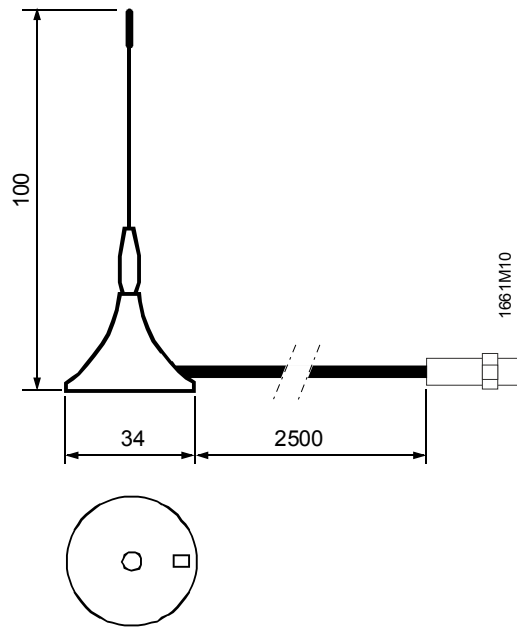
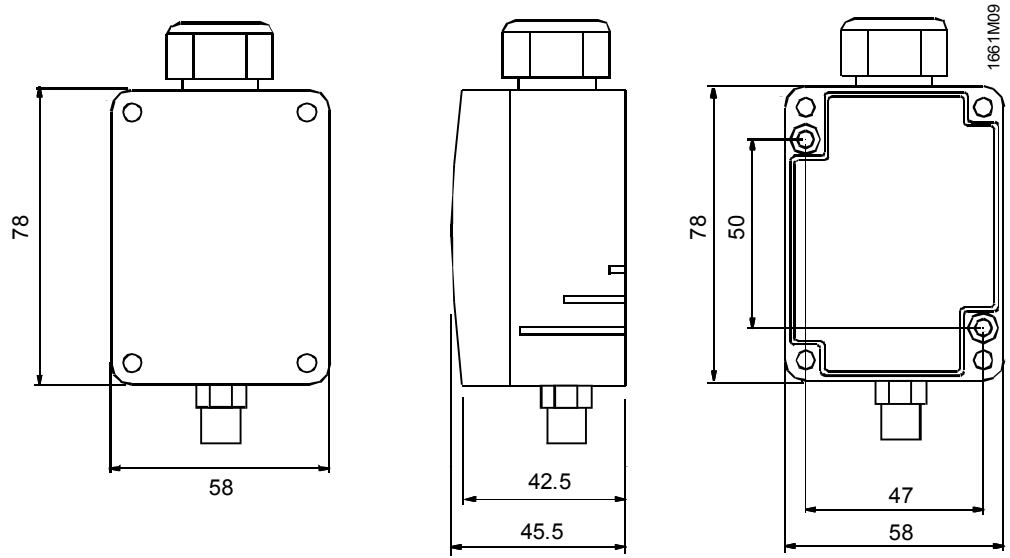
*) The documents can be downloaded from <http://siemens.com/bt/download>.

Connection terminals



Dimensions

Dimensions in mm



Published by:
Siemens Switzerland Ltd.
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel. +41 41-724 24 24
www.siemens.com/buildingtechnologies

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