SIEMENS

DESIGO™ RXT10.2
Engineering and commissioning
Quick guide

CM110758en
30.09.2005

Building Technologies
Building Automation

Contents

1 About this document

This condensed guide briefly describes the engineering and commissioning procedures for DESIGO RX projects. It covers both the activities to be carried out with the RXT10 commissioning and service tool, and the steps required for integration into the DESIGO building automation and control system.

Engineering workflow

The standard procedure for project engineering normally involves the use of the System Design component of DESIGO TOOLSET. In this case the RXT10 is used only for commissioning and service activities.

1.1 Before you start

Validity

This document is valid for the RXT10 commissioning and service tool from Version 2.3.

Content and target readership

The RXT commissioning and service tool is used to engineer, install and maintain LON networks incorporating DESIGO RXC and LONMARK-compliant third-party devices. This document contains basic information and operating instructions, and is written for engineering, commissioning and service specialists in the field of HVAC.

How the contents are structured

All the tables have the same structure. The **Action** and **Procedure** columns are followed by a **Menu** column containing the command sequence. In addition to cross-references within this document (chapter x.x), reference is also made to the relevant section of the User's guide (CA110412en), where the procedures are described in more detail.

Faulty product/ Incomplete documentation

Should you experience any faults or shortcomings in the product or the product literature, please contact the Common Support department of Siemens Building Technologies, Building Automation. This will help us further improve the product.

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2 Creating a new project (offline)

Refer to Section 5 of the User's guide.

Action	Step	Procedure	Menu Project >
Set up project	**1**	Create a new project	**New**
Enter the project data	**2**	Enter project name, engineer, and comments	**Properties > Overview** tab
	3	Enter the project version	**General** tab
	4	Select the relevant options	**Network** tab
	5	Master device, network interface	**Integration** tab

Notes

- **One** project must be created for each PXR or NIDES.RX.
- If you are using the same RXC devices in succession in different projects (for test purposes, for example), a different domain must be selected for each project.

2.1 Configuring the devices

Refer to Section 6 of the User's guide.

Action	Step	Procedure	Menu Device >
Register first device	**1**	Add a new device	**Add**
Configure first device	**2**	Location, description	**Summary** tab
	3	Select application	**Application** tab
	4	Select device type	**Device Type** tab
	5	Set parameters	**Settings** tab
	6	Save configuration	**OK**
	7	Select binding to master device	
Register other identical devices	**1**	Copy device	**Copy**
	2	Paste device(s)	**Paste** or **Paste Special**

Action	Step	Procedure	Menu Device >
	3	Modify location and description (and settings if required)	**Configure > Overview** or **Configure > List view**
	4	Save configuration	**OK**
Register other dissimilar devices		As Step 1	

Notes on third-party devices

- Third-party devices from the applications library: same as RXC devices (application = 3rd party devices)
- Third-party devices with LNS plug-ins (application type: LNS plug-in support)
  Devices can only be configured online.

2.2 Creating bindings

Refer to the User's guide, Sections 6.1.6 and 7.

Action	Step	Procedure	Menu View >
Create bindings between devices	**1**	Switch to the tree view	**Tree view**
	2	Click source device or object and drag mouse pointer to target device or object.	
	3	Binding template	
		It may be necessary to create a binding template if no suitable binding template exists already: Menu: **Tools > Binding Template Editor**	

2.3 Creating/modifying topologies

Refer to the User's guide, Section 6.10 to 6.12.

Action	Step	Procedure	Menu Tools >
Define topology (offline)	**1**	Open the relevant topology dialog box	**Device topology** or **Router topology…**
	2	Adding segments	**Device topology > Create**
	or	Delete segment	**Device topology > Remove**
	3	Highlight the segment, select device(s), and highlight new (target) segment	**Device topology > Move**
Modify topology (online)		Highlight the device placeholder	**Device topology > Move**
Create router topology (offline)	**1**	Highlight router and highlight two new segments	**Router Topology…**

Action	Step	Procedure	Menu Tools >
Reconfigure router topology	**or**	Highlight the required segments	**Router Topology… > Change**
	2	Complete the reconfiguration process	**Router Topology… > Assign**

2.4 Creating groups

Refer to Section 6.9 of the User's guide.

Note Useful for commissioning the plant; not to be confused with the Groups in the PXR).

Action	Step	Procedure	Menu: Tools >
Group the devices	**1**	Display Group Editor	**Group Editor...**

2.5 Printing the project data, saving and closing the project

Refer to the User's guide, Section 5.7 to 5.9.

Action	Step	Procedure	Menu: Project >
Print the project data	**1**	Select and print the required report type	**Print Report…**
Save the project	**2**	Save the project. (Files will be generated for system integration.)	**Save** or **Save as…**
Close the project	**3**	Close the project	**Close**

If you are ready to commission the RXC devices, you can now go to the "Commissioning" section, (see chapter 3) without closing the project.

2.6 Copying rooms

Refer to Section 6.4 of the User's guide.

Action	Step	Procedure	Menu:
Register all the devices in a room	**1**	Register the first device, see chapter 2.1	**Device > Add**
	2	Register remaining devices, as Step 1	
Create bindings between registered devices	**3**	Create bindings, see chapter 2.2	**View > Tree View**
	4	Highlight all the devices for this room and copy (including bindings)	**Device > Copy**
Copy room	**5**	Paste the copy once or more than once	**Device > Paste** or > **Paste Special**
Create bindings between rooms	**6**	Create bindings between rooms, see chapter 2.2	**View > Tree View**

3 Commissioning (online)

3.1 Connecting the PC to the network

Refer to Section 8 of the User's guide.

Action	Step	Procedure	Menu:
Connect the PC to the LON bus	**1**	Check that the correct LON interface type has been specified.	**Tools > Options**
Activate the "To do" list	**2**	Select the **Show Todo dialog box on connection** check box	Tools > Options
	3	If there are routers on the network, specify the segment to which the RXT10 is connected.	
	4	Connect to network	**Network > Connect**

Important

If you make an incorrect choice here, it will not be possible to install the network. At a later stage during installation, errors will occur indicating an incorrect "channel".

3.2 Processing the "To do" list

RXT10 identifies outstanding tasks automatically. The "Todo" list appears as soon as you select **Network > Connect**. The check boxes marked with a cross indicate those items in the network which still need to be modified or installed. Click **Process** to start the first step.

These steps correspond to the steps in the basic "Commissioning" procedure.

3.3 Loading the project data

Refer to Section 8.4 of the User's guide.

Action	Step	Procedure	Menu: Network
Install the devices with the following options:	**1**	Select the devices to be installed	**> Install…**
	3	Load Settings	
	4	Set Device Online	
	5	Update application	**Device** > **Configure…** > **Application > Settings**

Note Both the installation of the master device and the loading of project data can be automated by use of the Connect Wizard.

3.4 Disconnecting from the network

Refer to Section 8.10 of the User's guide.

Action	Step	Procedure	Menu:
	1	Disconnect from network	**Network, Disconnect**
	2	Select and print the required reports	**Project > Print Report…**

3.5 Commissioning a single device

Refer to Section 8.5 of the User's guide.

Action	Step	Procedure	Menu:
Install devices	**1**	Connect the PC to the RXC device	
	2	Connect to network	**Network > Connect**
	3	Select device from the list view	**View > List View**
Define options	**4**	Assign address	**Device > Install...**
	5	Load settings	
	6	Set device online	
	7	Disconnect from network	**Network > Disconnect**

Third-party devices with LNS plug-in

For a detailed description, refer to Section 8.6 of the User's guide.

4 Service activities (online)

Refer to Section 9 of the User's guide.

4.1 Extending or modifying a project

Action	Step	Procedure	Menu:
Add device(s)	**1**	Disconnect the RXT10 from the network	**Network > Disconnect**
	2	Add device(s)	**Device > Add**
	3	Connect to network	**Network > Connect**
	4	Address the new devices	**Network > Assign devices.**
	5	Install the new devices	**Network > Install... > Select Changed Devices**
Replace device	**6**	Connect to network	**Network > Connect**
	7	Replace device	**Device > Replace**

4.2 Resetting the project (Reset Project)

Refer to Section 5.10 of the User's guide.

In the event of a problem, it is possible to reset the devices in a project, i.e. restore their default values.

Caution Resetting a project has significant consequences for any devices which have already been addressed. These devices must be reinstalled to maintain the consistency of the network. Projects should therefore only be reset in extreme circumstances.

Note Make sure you create a backup first (see the User's guide, Section 5.8).

Action	Step	Procedure	Menu:
Save the project	**1**	Create a backup	**Project > Backup**
Disconnect from network	**2**	Disconnect from network	**Network > Disconnect**
Reset project **Important:**	**3**	Reset the project (deletes LNS database)	**Project > Reset…**
	4	If the assignment is correct, answer **No** to the prompt **Delete Neuron ID?**	
De-energize PXR	**5**	Use reset button (do NOT remove battery!)	
De-energize NIDES.RX		Remove battery for min.10 s	
Connect to network	**6**	Connect to network	**Network > > Connect**
	7	Answer **No** to the prompt **Install MD?** (to save time, do not install MD until later)	
Reinstall devices	**8**	Re-install devices (without **Application download**)	**Network > Install …**
Disconnect from network	**9**	Disconnect from network	**Network > Disconnect**

Action	Step	Procedure	Menu:
Save the project	**10**	Save the project	**Project > Save…**
Connect to network	**11**	Connect to network	**Network > > Connect…**
Install master device	**12**	Install master device	**Device > Install…**
Read network status	**13**	Read network status	**Network > Get status**
Disconnect from network	**14**	Disconnect from network	**Network > Disconnect**
Save the project		Save the project	**Project > Save…**

4.3 Replacing the master device

Refer to Section 6.7 of the User's guide.

Action	Step	Procedure	Menu:
Disconnect from network	**1**	Disconnect from network	**Network > Disconnect**
Delete master device	**2**	Delete master device from database	**Tools > Clear MD image**
Reset new master device (NIDES.RX only)	**3**	Remove battery for approx. 10 seconds	
Replace device	**4**	Replace master device	
Connect to network	**5**	Connect to network	**Network > Connect**
Install master device	**6**	Install master device	**Device > Install…**

Important

For technical reasons, the RXC devices are reset twice upon connection to the network. This can affect lighting and blinds (depending on the controller settings).

4.4 Deleting a device

Notes: This process deletes existing bindings. The device must also be deleted at the automation level and the management level.

4.5 Monitoring and diagnostics

Refer to Section 9.1 of the User's guide.

The **Commissioning Support** option is an efficient tool for commissioning and maintenance of DESIGO RXC systems. The following processes can be carried out for several RXC devices at once:

- Monitor process values
- Override outputs
- Modify settings

Action	Step	Procedure	Menu:
Connect to network	**1**	Connect the PC to the LON bus	
	2	Connect to network	**Network > Connect**
	3	Display commissioning support	**Tools, > Commissioning support…**
	4	Select devices	
	5	View process values. Select the **View** check box.	
	6	Override outputs: select the **Override** check box.	
	7	Change settings: click **Settings**	
	8	Disconnect from network	**Network > Disconnect**

Note Remember to reset the devices to "Auto" before closing the **Commissioning Support** dialog box.

5 Integration into automation system (standard workflow)

For DESIGO PX automation level with PXR

Refer to the online-help in DESIGO TOOLSET.

5.1 INTEGRAL automation level with NITEL

Action	Step	Procedure	Tool
Download Infolist and text into NIDES.RX	**1**	Download the Infolist and `Split.asc` file	DESIGO INSIGHT CA1Z9125
Import database	**2**	DB Import: import the `Split.asc` file	DESIGO INSIGHT CA1Z9125
Graphics engineering	**3**	Integrate genies and super genies	DESIGO INSIGHT CA1Z9130

5.2 INTEGRAL automation level with NCRS

Action	Step	Procedure	Tool
Generate NCRS database from `SAPIM.ASC` and `NIOPEN.ASC`	**1**	Read the `NIOPEN.ASC` and `SAPIM.ASC` files into INTEGRAL PLAN	INTEGRAL PLAN Folder M3
	2	Create the NCRS database and Infolist e.g. (`sta_ncrs.dbs`)	INTEGRAL PLAN Folder M3
Load NCRS database	**3**	**Database > Restore** (`sta_ncrs.dbs`)	NCRS Access CA1Z9125
Load Infolist into NIDES.RX	**4**	**Database > NICO Infolist** (`infolst1.inf`)	NCRS Access CA1Z9125

Database import	**5**	Import `sta_ncrs.dbs`	DESIGO INSIGHT CA1Z9125
Graphics engineering	**6**	Integrate genies and super genies	DESIGO INSIGHT CA1Z9130

5.3 UNIGYR automation level with NIDES.RX

Action	Step	Procedure	Tool
Create RXC configuration	**1**	Import `NIOPEN.ASC`	UNIGYR Design
	2	Generate UNIGYR function blocks and set parameters	
	3	Update user manual	
Download to RX master	**4**	Configuration including transmission of the NIDES Infolist	UNIGYR Tools CA2Z3299 CM2Z8021
Download to NIDES.RX	**5**	Transmit Infolist	Automatic if different from the last loaded version CA2Z3299 CM2Z8021
Database import	**6**	UNIGYR DB Import	TagTool CA1Y9122
Graphics engineering	**7**	Integrate genies and super genies	DESIGO INSIGHT CA1Z9130

Note Do not create a binding between NIDES.RX and RX master until the commissioning on the LON side is complete.

5.4 VISONIK automation level with NIDES.RX

Action	Step	Procedure	Tool
Create RXC project		The following files are created:	RXT10 CA110412
	1	"Project data"	
	2	"NIOPEN.ASC"	
	3	"RxNiBps.COL", containing: – TSK111.TXT (project image for BPS) – TSK110.TXT (Infolist for NIDES.RX)	
Define groups	**4**	Adapt GroupConfig.COL manually to the project	VISOTOOL CA2Z8339
General VISONIK engineering	**5**	Download RX coupling (CFE application) to the BPS.	VISOTOOL Editor CA2Z8339
	6	Carry out general VISONIK engineering	
Database import	**7**	DB Import: Import global and project-specific data	DESIGO INSIGHT CA1Z9125
Graphics engineering	**8**	Integrate genies and super genies	DESIGO INSIGHT CA1Z9130

Note Do not create a binding between NIDES.RX and VISONIK BPS until commissioning on the LON side is complete.

6 Migration Utility

Refer to Section 10 of the User's guide.

Action	Step	Procedure	Menu:
Migration Steps	**1**	Open old v1.x project in the DESIGO RXT10.2 V2.3 engineering tool	
	2	Use the report function to save or print full device details	
	3	Save the project and close it, do not make any other changes at this point.	
	4	Create a new empty project using the v2.x library in the DESIGO RXT10.2 engineering tool. This should just include the desired master device and no other controllers or devices.	
	5	Save this new project using a different name and location to the original.	
	6	Start the 'Migration Utility' from the tools menu, and select the project to be migrated.	
	7	Make a note of any errors or changes indicated by the utility.	
	8	Save the project.	
	9	Check all configuration details and bindings with the report generated previously to ensure all details are correct.	
	10	Install the NIDES.RX interface.	
	11	Install all devices	
	12	Save the project	

7 Dialog boxes and error handling

Note For online help in the RXT10, press <F1> in the error view.

7.1 Tool installation

Message	Cause	Action
The system is not installed correctly. Please add the directory `LonWorks\Bin` to your "Path" environment variable and restart the computer.	The path entered under **System properties > Environment** is not correct	**OK** Complete the **System properties > Environment** path: `C:\Lonworks\Bin`
	The files `NMSndMsg.ocx` and `LNS_FTP.ocx` are not in the registry	Register `NMSndMsg`.ocx and `LNS_FTP.ocx` with regsvr32. DOS command: *regsvr32 NMSndMsg.ocx* *regsvr32 LNS_FTP.ocx*
	LNS not installed	Check whether the LNS software is installed under **Control panel > Add/Remove programs**

7.2 Commissioning

Message	Cause	Action
RXT cannot connect: the network interface is being used by xxx	The LON network interface is being used by another user.	Please wait until the other application has finished using the network interface.
No object selected	For networks with several segments, you need to specify the segment to which the tool is connected.	**OK** Select segment. If no segment is selected, the connection will be terminated.
Could not open project file. Make sure the file is not being used by another application.	The project file has been opened by another tool (e.g. MS Access)	**OK** Close the program which opened the project file.
There is already a binding to this project, but the LNS database is missing. Do you want to create a new database?	The project has been reset	Confirm with **YES**
	Instead of creating a backup of the project, only the project file was copied.	**No** Obtain a backup copy and use this project. **New > Connect**.
Master device has a bad magic key. Are you sure you want to continue?	The checksum in the MD does not match the one in the project. The MD is corrupt, or there is another user working with the project	**Yes / No** Ensure that this is the current project **Update MD** or **Clear MD image**
Invalid Private data file Are you sure you want to continue?	The data in the MD does not match the project;	**Yes / No** Re-install MD

Message	Cause	Action
Timestamp mismatch! Are you sure you want to continue? (Update master device with selected project?)	The project was not saved after the last connection. Old backup. The MD has since been changed.	**Yes**: loading current project into MD. **NO**: Establishing connection without updating the MD. **Cancel**: Connection terminated
Validation found that MD data is inconsistent with device with module No. xxx. Do you want to try to update the MD with the available data?	If the response to the I**ncorrect time-stamp** error was **Yes**, the modules being updated are displayed.	**Yes / No** **Yes** to update MD
The device with NeuronID xxx is already in this project. Please select a new device.	An attempt is being made to install a device which already exists in the project database.	**OK** Check that the correct device is being installed
Cannot communicate with Master Device!	– Check the cable, power supply and battery. – MD busy, no response, cable not plugged in correctly. – Wrong project. – Bus problems (bus overload, termination resistance, bus connector with loose contact etc.)	**Abort / Retry / Ignore** Check for all the suggested causes
No project information found in the master device. The master device is not installed or there is a communication problem.	Power failure with faulty battery	**Abort / Retry / Ignore** Check the power supply and the battery. Re-install the master device.

Message	Cause	Action
xxx devices are integrated into this project, but you can only integrate yyy devices with the selected master device.	The new master device you have selected (PXR) cannot accommodate the number of devices already set up (change from PXR12 to PXR11).	**OK** Integrate fewer devices or select PXR12 as the master device
Could not save project under C:\xx	The project is write-protected because it was copied from a CD.	**OK** Remove the write-protection from the project file.
Could not open LNS network and/or system. Invalid parameter values (subsystem: NS, 44#)	LNS will not enable the file “db”.	**OK** Save project **Important:** Reboot the RXT tool. (LNS will enable the data after the next restart).

7.3 Service errors

Message	Cause	Action
Replace device: Error preparing to replace device	Could not initialize the new device to be replaced.	**OK** Initialize the device in a test project, to check basic operation. Check the cable.
Error replacing device!	Could not download settings into new device.	**OK** Repeat the process. If this does not help: Test the device by commissioning it in a separate project (function test)
	The new device could not be registered in the master device.	**OK** Check the master device and then repeat the process.
No network interface selected! Are you sure you want to continue without a network connection?	No network interface selected in the **Tools > Options** menu.	**Yes / No** This may be intentional (to reduce waiting time on the site). If not, select the network interface under **Tools > Options**.
Do you want to read the device information from the network?	When re-installing the MD, the device data needed by the master device can be read from the network or from the database.	**Yes / No** Read from network: The database will be updated again. Reading from the database is faster.
The project has been updated from a previous version. If you save the project now, you may not be able to open it with the		**OK** To keep the old project, save the new project under a new name.

Message	Cause	Action
old version of the tool.		
Do you want to append data to xxx?	**Network test > Backup**. If you click **Cancel**, you will be asked for a new file name.	**Yes / No / Cancel** If you choose not to append the new data, then the old data in the file will be overwritten.

7.4 Special engineering notes

Message	Cause	Action
A template named "xxx" already exists. If you overwrite this template, the changes you made will apply to ALL bindings made with this template. Do you want to overwrite it?	Warning! Existing bindings will also be changed.	**Yes / No** Rename the binding if there is any doubt as to whether or not this binding is already being used.
No space for xxx more device(s).	**Paste special**: More than 150 devices have been created.	**OK** Create fewer devices, or create a second project
Network interface xxx not found! Cannot connect. Do you want to continue preparing the database?	A network interface previously installed on this computer is no longer present.	**OK / Cancel** Select or install a new network interface
Master device limits exceeded (xxx > yyy data points).	Only 889 data points are allowed (total 900 data points, of which 11 reserved for NIDES-RX).	**OK** Modify binding template; Use fewer network variables; Use fewer devices; Create a second project.

Message	Cause	Action
Device xxx has more than yyy network variables bound to the master device!	More than 25 network variables per binding template (or several binding templates between device and master device).	**OK** Modify binding template.
*Project validation failed! You may have loaded the wrong database, or are not properly connected to the network. If you are absolutely sure that the right database is loaded, click **Yes**. Otherwise click **No**.*	The data in the master device does not match the data in the open project: An old version of the project is open, or the project was modified on another PC.	**Yes / No** If you are sure you are working with the right project, click YES to update the master device. Clicking **NO** terminates the network connection.
One or more remote servers have been found.	More than one LNS-based tool is connected to the network.	**OK** Check that only one LNS-based tool is connected to the network.
The master device cannot be the source for a binding.	Tree view: Master device is marked as source	**OK** Draw binding from RXC device to master device

Message	Cause	Action
The locations are not unique. Deleting integration files!	Locations do not have unique definitions, or syntax is faulty. Note: Unique location strings are only required with VISONIK. The check for unique strings can be disabled in the **Options** menu.)	**OK** Enter unique locations.
Some devices/routers have been marked in preparation for a move, but have not been moved. Do you still want to disconnect from the network?	In the engineering process, devices were moved to other segments, or segments were linked to other routers.	**Yes / No** These changes must also be carried out in the network. If you disconnect from the network now, the changes prepared will not be carried out.

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