SpaceLogic Room Controllers

SE8000 ZigBee Sensors Integration Guide
Pairing SE8000 Room Controllers with ZigBee Sensors

Schneider Electric™

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Quick Setup

The quick set-up assumes all back-end configuration of the stand alone Room Controller acting as coordinator or the Multi-Purpose Manager (MPM) coordinator for the ZigBee network has already been completed. It also assumes the User is familiar with the **Permit Join** function and the **Wireless Ecosystem** screen functions.

1. Set the **Permit Join** on the Room Controller (or networked MPM coordinator if used) to **On**.

2. Go to the **Wireless Ecosystem** menu of the Room Controller interface.

    IMPORTANT: the Room Controller attempts to pair itself with a sensor when you enter any Zone in the **Wireless Ecosystem** menu. If for any reason you exit from any Zone in the **Wireless Ecosystem** menu, you must wait 30 - 60 seconds before attempting to enter the **Wireless Ecosystem** menu screens again. The Room Controller cannot pair itself with a sensor if you access the **Wireless Ecosystem** menu screens without waiting for the necessary amount of time to pass.

3. Insert the battery or remove the pull tab (for contact sensors) to activate the ZigBee sensor.

4. Click the pairing button to allow the ZigBee Pro sensor to pair with the Room Controller:

    - Wall-mounted motion sensor (SED-WMS-P): **10 times**.
    - Ceiling-mounted motion sensor (SED-MTH-G-5045): **3 times**.
    - Water leakgage sensor (SED-WLS-G-5045): **3 times**.
    - Window and door sensor (SED-WDC-G-5045): **3 times**.
    - CO2, temperature & humidity sensor (SED-CO2-G-5045 & SED-TRH-G-5045): **1 time**.

    Note: If sensor was already paired at an earlier date, removing the battery and inserting back into the sensor again performs the same action as clicking the pairing button 10 times.

5. Verify sensor has joined network: The Paired Devices count on the **Wireless Ecosystem** screen to be incremented for the Wireless Device screen to become available for the sensor. Confirm it is the correct sensor by comparing the Address field shown on the Wireless Device page with the last 4 characters of the address printed on the device.

6. Set the **Set function to** parameter to correct setting.

    Note: If pairing multiple sensors, navigate to subsequent Zone page in Room Controller menu and repeat steps 3 - 6.

7. Set **Permit Join** on Room Controller (or networked MPM coordinator if used) to **Off**.

8. In Configuration screen 1/10, ensure UI16 and UI17 are set to **Door dry, Window, or Motion** to ensure correct operation.

    Note: UI17 is used for either Window or Motion sensors. Both sensors can not be used at the same time.

9. Physically install sensor.

TROUBLESHOOTING

Refer to full procedure described later in this document if the Quick Setup is insufficient, or, if an MPM or Room Controller must be configured.

Overview

This procedure shows how to pair a SpaceLogic SE8000 Room Controller with one of the following ZigBee Sensors:

- Ceiling mounted motion sensor
- Wall mounted motion sensor
- Door/Window mounted switch
- Water leakage sensor
- Motion/temperature/humidity sensor

The ZigBee Sensors can be paired with a stand-alone Room Controller, or with a Room Controller as part of a network. However, when pairing a ZigBee Sensor with a Room Controller on a network, the Room Controller must first be bound to MPM using Smart StruxureWare Building Expert.

You can pair up to 10 ZigBee Sensors per Room Controller. Each MPM can connect wirelessly with up to 30 ZigBee enabled devices.

SETTINGS

You must correctly set the following parameters to successfully pair a ZigBee Sensor with a Room Controller:

- PAN ID to value less than 499 if Room Controller is bound to an MPM.
- PAN ID to value greater than or equal to 500 if Room Controller is stand-alone.
- PAN ID parameter in Building Expert set to same value as Room Controller.
- Permit join set to ON in Building Expert and Room Controller. Then set to OFF in Building Expert and Room Controller after successful pairing.

INSTALLATION STEPS

Perform the following steps in order to successfully pair the ZigBee Sensor to the Room Controller:

1. Bind Room Controller to MPM.
2. Set parameters for MPM.
3. Set Permit Join to On in Room Controller and MPM.
4. Pair Sensor with Room Controller.
5. Install Sensor at selected location.
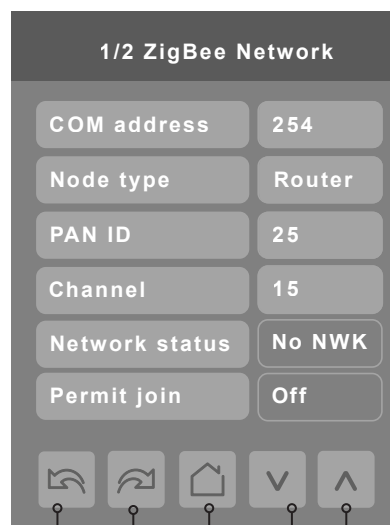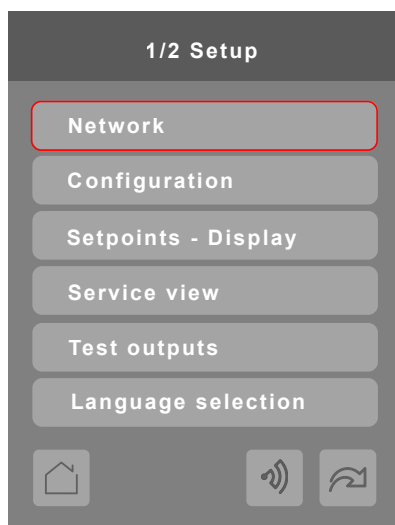
Bind Room Controller to MPM

This procedure shows how to bind a Room Controller to an MPM using Building Expert.

CONFIGURE ROOM CONTROLLER

1. Touch and hold screen for 3 seconds to enter setup mode.
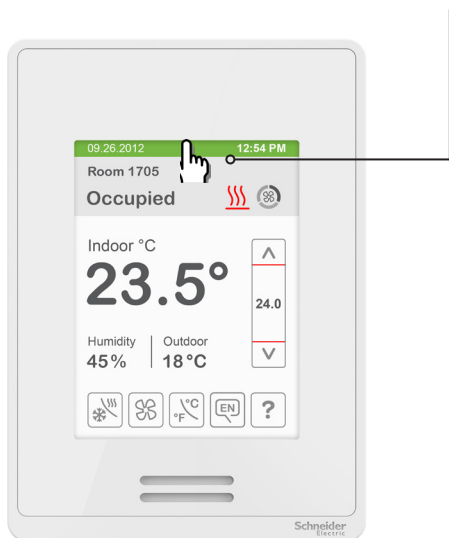
2. Select **Network.**

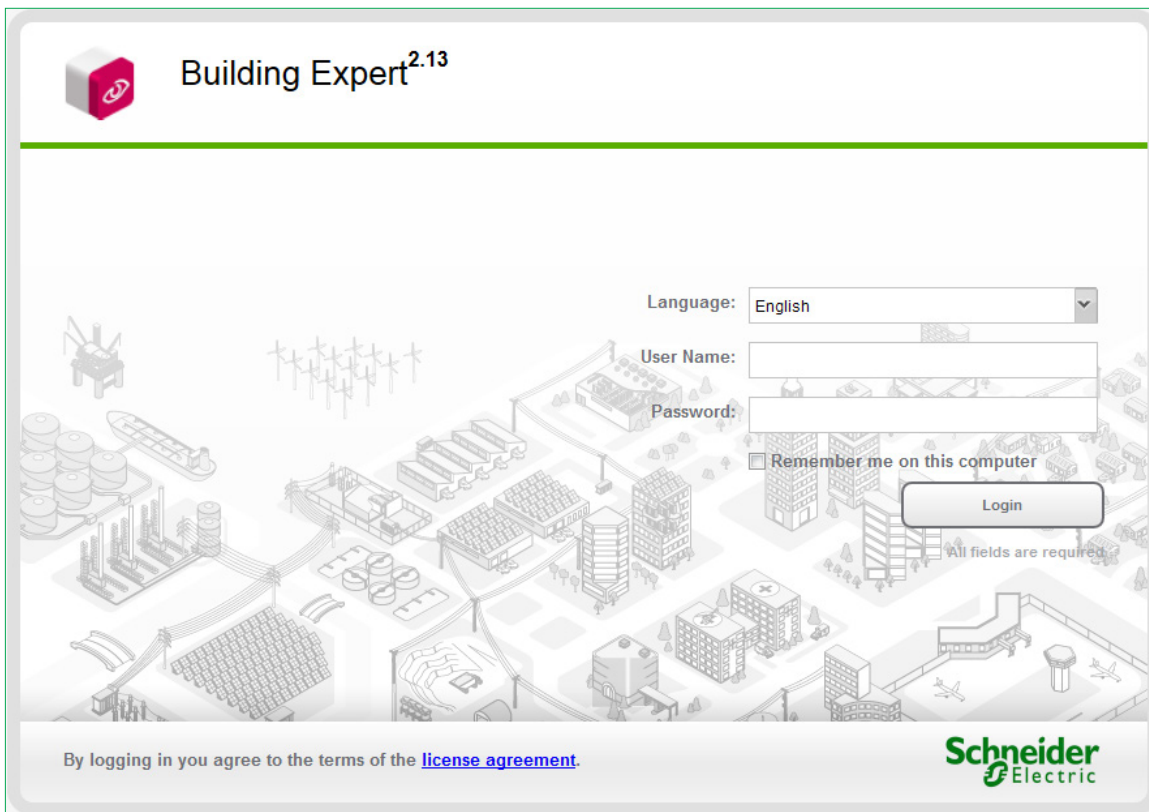Previous page   Next page   Back to Setup   Change value

3. Select **COM address**.

    Using up/down arrow icons, enter COM address value.
    Note: this should be unique to the device for networked installations.

4. Select **ZigBee pan. ID**.

    Using up/down arrows, enter ZigBee pan. ID value.
    Note: this value must be 499 or less if the Room Controller is part of a network of Room Controllers, and 500 or greater if Room Controller is stand-alone.

5. Select **ZigBee channel**.

6. Using up/down arrows, enter Channel number.

7. Select B**ack to Setup** icon.

LOGIN TO MPM

Smart StruxureWare Building Expert requires ESR version of Firefox.

The instructions in this guide assume Building Expert 2.13 or later is installed. If you are using an earlier version, update Building Expert before attempting the procedures described in this guide.

1. Type default address in address bar (10.50.80.3 for MPM-GW and MPM-UN, 10.50.80.4 for MPM-VA).

2. Building Expert splash page shows:

3. Select **Language** (default English).

4. Enter **User name** (default 'admin').

5. Enter **Password** (default 'admin').

6. Click **Login**. Building Expert loads to default page.

CONFIGURE MANAGER

1. In Building Expert, click **Configuration** tab.

2. In **Controller Settings (CFG1)**, set **Adjust Time**, **Save Period**, **Time Zone Offset**, and **Enable DST** (if applicable).

3. Click **Enable** toggle.

4. In **Ethernet Settings** (ETH1), set **IP**, **Netmask**, **Gateway**, **DNS**, and **Email Source** with appropriate addresses for network.

5. Click **Devices** window and select MPM. Then scroll down main **Explorer** tab window and select **ZigBee Configuration.**

    OR

    Click **Configuration** tab of main window and go to **ZigBee Settings (ZBC1)** section.

Controller Settings (CFG1)

Node Instance: 600		Save Period:	Daily
Adjust Time: 2013-09-23	15:27:00	Time Zone Offset:	UTC-06:00
Current Time: 2013-09-23 15:27:52		Enable DST:	☐

Ethernet Settings (ETH1)

IP:	10.50.80.183
Netmask:	255.255.0.0
Gateway:	10.50.80.1
DNS:	10.50.80.1
Email Source:	<node id>@notconfig.com

SMTP

Server:	smtp.notconfig.com
User name:	
Password:	

6. Toggle **Edit Settings** (warning message shows) and click **OK** to continue.

ZigBee Settings (ZBC1)

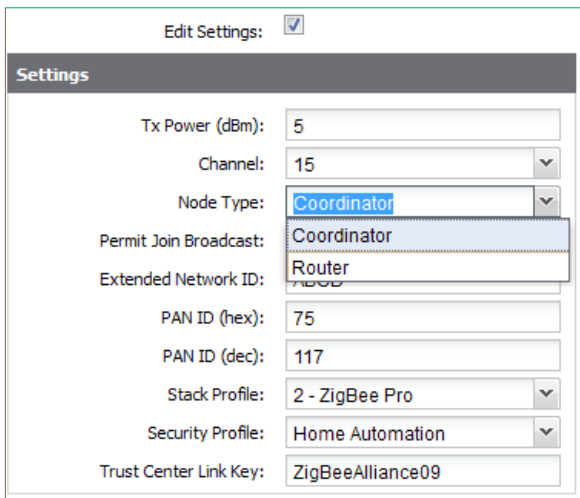|	
Edit Settings:	☐
Node Type:	Router
Permit Join Broadcast:	✓
Channel:	25
Extended Network ID:	ZBC-BPAC
PAN ID (dec):	52140
Stack Profile:	0 - Custom
Security Profile:	None
Trust Center Link Key:	ZigBeeAlliance09

Warning ✕

⚠ Changing the ZigBee settings can disrupt your network and may require to re-commission any ZigBee devices.

| OK | Cancel |

7. Set **Node Type** as Coordinator or Router.

8. Set **Channel** to value between **11 - 25** matching Channel value set on Room Controller.

9. Set **Extended Network ID** to a unique value.

    Note: this value must be unique for each Room Controller. For example, in a Hotel, use the Hotel Room number as the unique ID value.

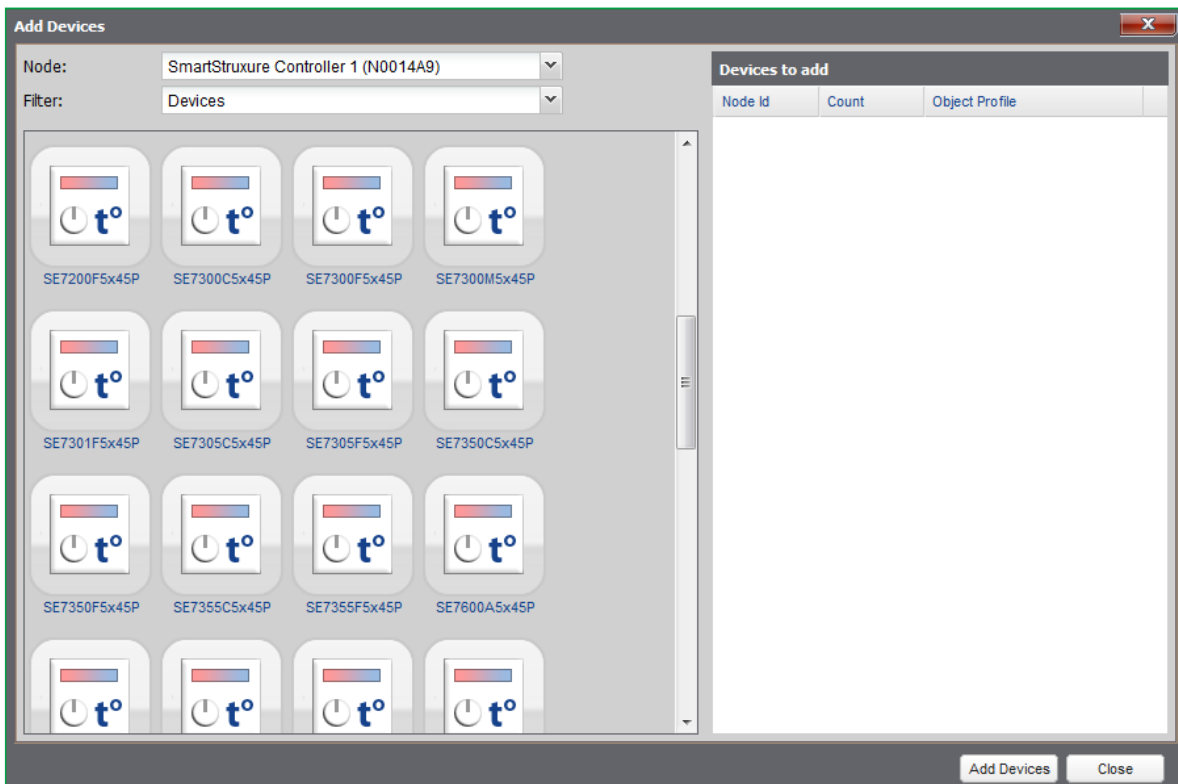10. Set **PAN ID (dec)** to value matching **PAN ID** value set on Room Controller.

11. Set **Stack Profile** to **2 - ZigBee_Pro**.

12. Set **Security Profile** to **Home Automation**

13. Click **Save**.

ADD DEVICE

1. In **Explorer** tab, click **Add Device**.

2. Select device to add.

   Note: device model selected from device list must be identical to model number of device.
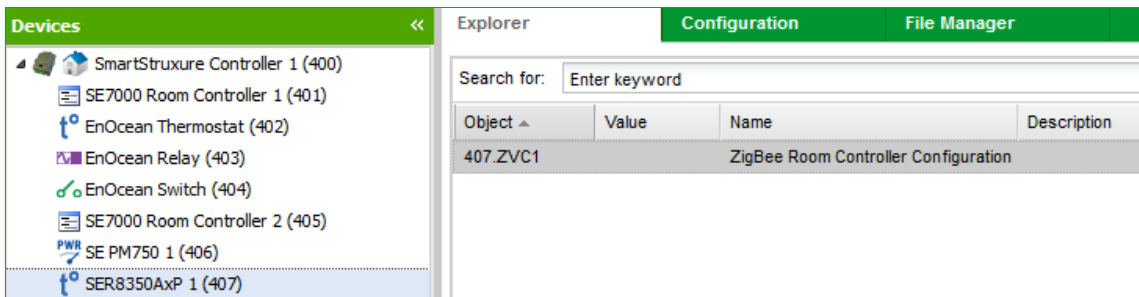
3. Click **Add Devices**. Building Expert automatically adds device to your Room Controller.

Set Parameters for MPM

BIND AND CONFIGURE ZIGBEE PRO ONLINE FOR ROOM CONTROLLER

1. In **Devices** pane, select newly added device.
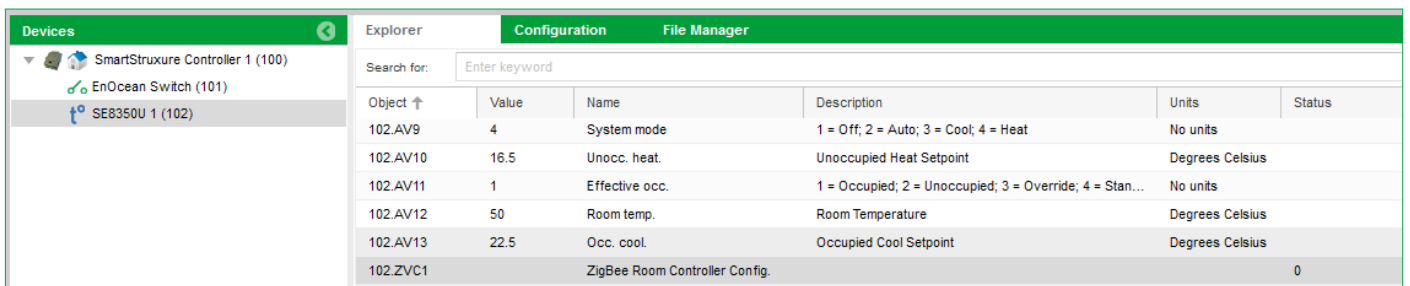
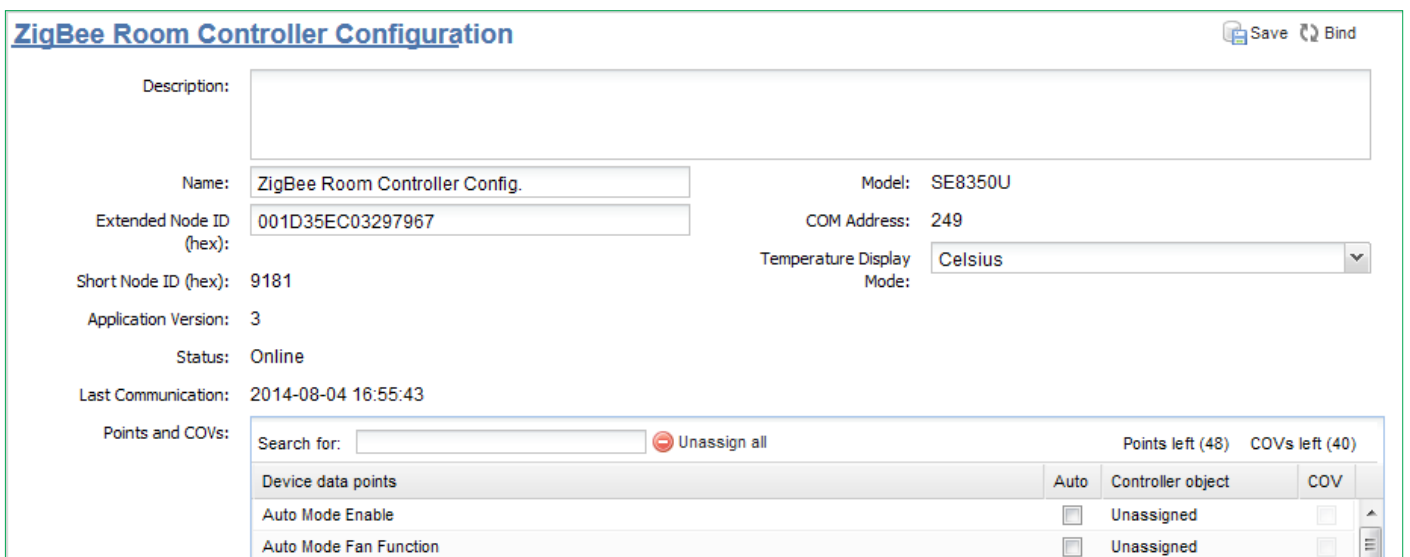2. Navigate to **ZigBee Room Controller Configuration** on **Explorer** tab.

3. Click **Bind**. A new window opens and Building Expert searches for **Com Address** and **Extended Node ID** for device.

4. In **Select device** window, select device to bind with MPM.
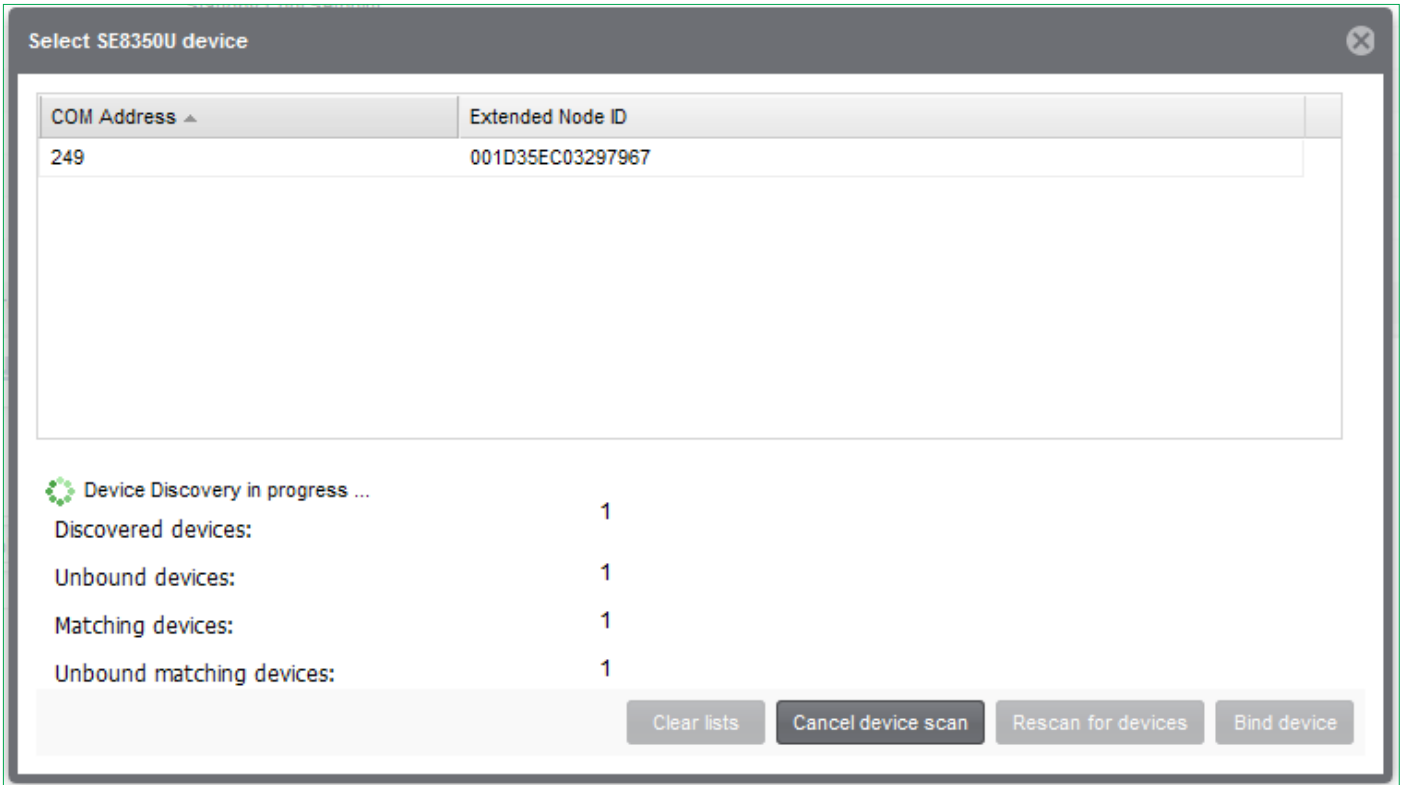
5. Click **Bind device**. Building Expert adds devices **Extended Node ID** and **COM Address** information to selected Room Controller.

ASSIGN DEVICE DATA POINTS

1. In **Object** field of **Explorer** tab, click **ZigBee Room Controller Configuration**.

2. Click on checkboxes for any device data points to monitor in Building Expert. A maximum of 60 data points can be selected. Use **Search for** text box to locate specific data points.
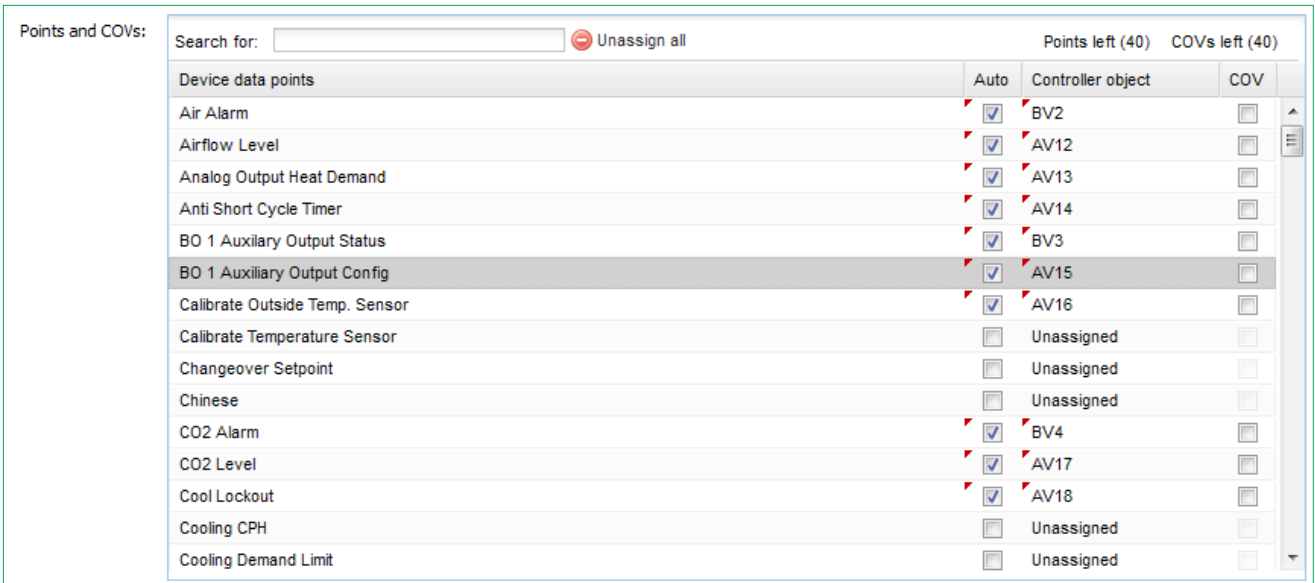
3. Click **Unassign all** to clear all selected data points (if necessary).

4. In **COV** field, select checkbox for **Wireless Zone Battery** and **Wireless Zone Status** for any Zones intended for use to pair sensors (see next section).

    Note: data gets updated automatically to MPM whenever Room Controller has a change in current values. This can affect up to 20 COV data points.

5. Select checkboxes for any other data set points to have updated to MPM automatically when Room Controller has a change in current values.

    Note: up to a maximum of 40 COV data points counting those used for ZigBee sensors in previous step.

Set Permit Join and Pair ZigBee Sensor(s)

This procedure assumes the Room Controller is either stand-alone or is bound to an MPM acting as a coordinator. See Appendix A for information on how to pair a ZigBee sensor with a Room Controller bound to an MPM in a network including multiple MPMs.

PERMIT JOIN

Ensure Room Controller (or MPM if used) has **Permit Join** parameter set to **On.**

*   For Room Controllers: ZigBee settings screen 1/2, Wireless Ecosystem Zone screen 1/10.
*   For MPMs, **Permit Join** is one of the ZigBee settings accessible as described previously.
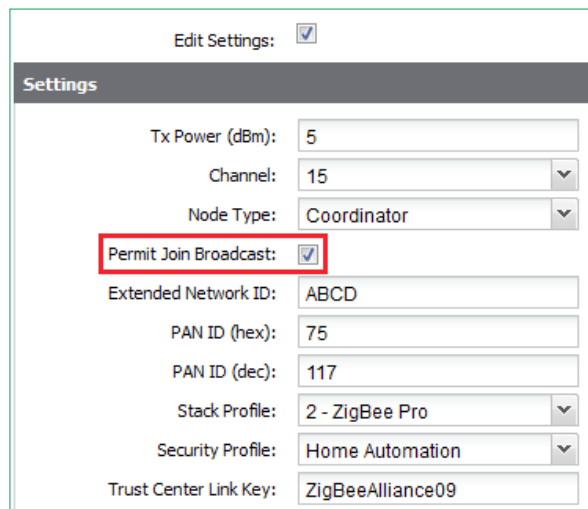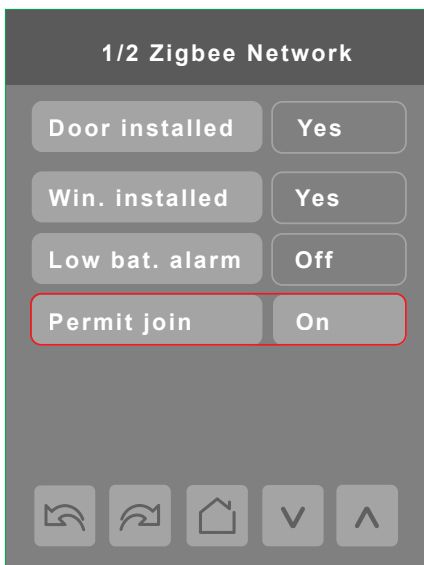
PAIR ZIGBEE SENSOR(S) WITH ROOM CONTROLLER

Navigate to the Wireless Ecosystem screen on your Room Controller before starting procedure.

1/10 Zone	
Set function to	None
Status	Closed
Battery	Normal
Paired	No
IEEE address	0x0000
Permit join	On

↔

10/10 Zone	
Set function to	None
Status	Closed
Battery	Normal
Paired	No
IEEE address	0x0000

1. Navigate to the Wireless Ecosystem page.

2. Hold ZigBee sensor in close proximity to Room Controller and click button on ZigBee sensor (consult installation guide for ZigBee sensor to determine locations of button and LED for sensor).

3. Ensure LED on ZigBee sensor flashes several times in the following sequences:

   1. ●●● YRY   Searching for Network
   2. ●●● YGY   Device Being Configured
   3. ●●● GGG   Device Joined

4. The following sequence shows if there is a problem with pairing:

   ●●● RRR   Device Failed to Join

5. For any other sequence of LED flashes, consult installation guide for ZigBee sensor to determine how to troubleshoot.

> ⚠ **Restrictions and limitations**
>
> When pairing ZigBee sensors in a networked environment where multiple Room Controllers are bound to a single MPM, **it is necessary to make certain that one Room Controller at a time is being bound with a ZigBee sensor.**
>
> When **Permit Join** is set to **On** for an MPM, all Room Controllers bound to it also have **Permit Join** set to **On**. A ZigBee sensor trying to pair with a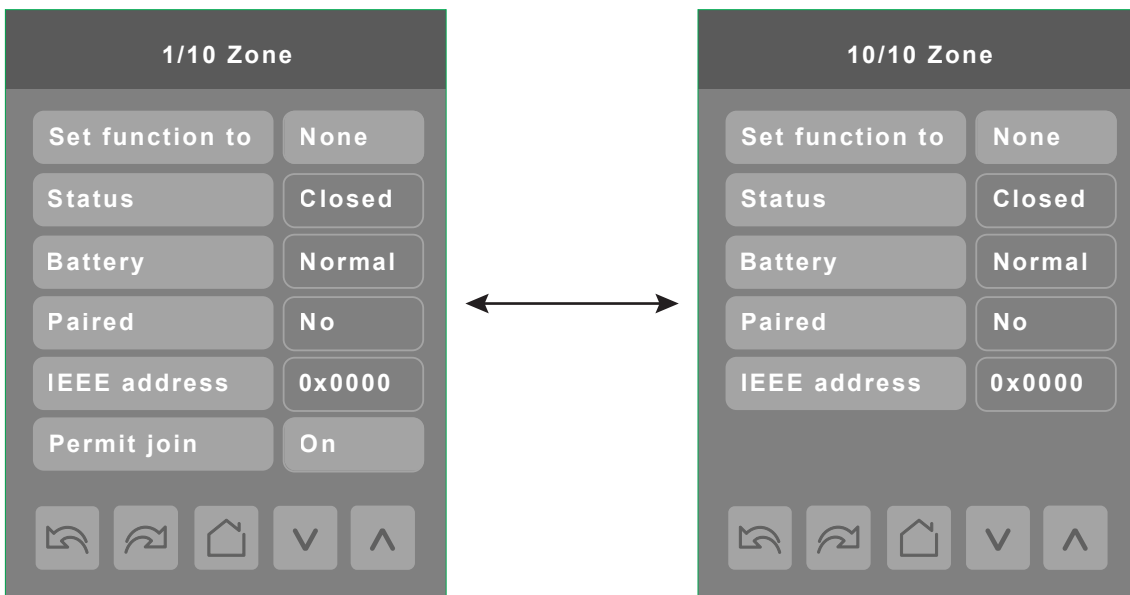 Room Controller will pair with the first Room Controller in range that has an empty **Zone** screen open in the **Wireless Ecosystem** section of the interface.
>
> **If more than one Room Controller in range of the ZigBee sensor has an empty Zone screen open in the interface, the pairing may fail.** The ZigBee sensor will always attempt to pair with the last Room Controller that became ready to pair by opening an empty Zone interface screen, whether or not that is the correct Room Controller the sensor is intended. For this reason, make sure to never have more than one Room Controller at a time with an empty Zone screen open in the interface ready to pair with a ZigBee sensor.

ADDITIONAL CONFIGURATION

Additional configuration is necessary for the Room Controller sequences to function correctly.

1. Navigate to first page of **Configuration** settings in Room Controller interface.

2. Set **UI16** to **Window** if Window sensor is used. Otherwise set to **Motion NO** or **Motion NC** if motion sensor is used.

3. Set **UI17** to **Door dry** if Door sensor is used.

1/10 Configuration	
UI 16 config	None
UI 17 config	None
UI 19 config	None
Smart recovery	Off
Setpoint func.	Attach Stp
Mode button	Off-Auto

DISABLING PERMIT JOIN

1. Once ZigBee sensor has joined network, verify last four digits of IEEE address on sensor match what shows on Room Controller screen. More than one ZigBee sensor may have joined. Confirm correct type has joined for each zone used to pair ZigBee sensor with Room Controller.

1/10 Zone	
Set function to	None
Status	None
Battery	Normal
Paired	Yes
IEEE address	0xEB6B
Permit join	On
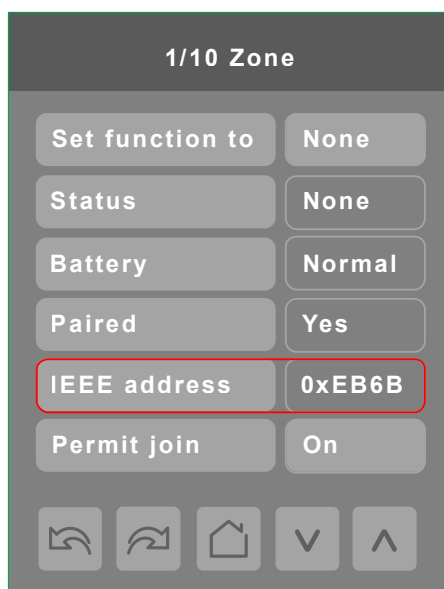
2. After sensor has paired with Room Controller, change **Set function to** parameter to match correct type of ZigBee sensor according to the following:

None   Default setting, no sensor function specified.

Door   Default behavior is if the door is opened and then closed, and the Room Controller does not detect motion for 15 seconds. In this state the Room Controller switches to **Standby**.

Window   Default behavior triggered the sensor and turns off the HVAC air compressor.

Motion   Default behavior triggers the sensor and switches the Room Controller to **Occupied** setpoints.

Water Leak   Monitors water level on the floor and triggers an alarm.

Status   Monitors functioning of the sensor without allowing it to affect the Room Controllers settings.

Remove   Clears the sensor settings from this Zone.

if the incorrect function is configured, then either the **Paired** status changes to **Invalid** (when incorrectly setting motion<-->contact), or incorrect responses get triggered in the Room Controller (example window<-->door). For example, the Room Controller can tell the difference between a contact sensor and a motion sensor, but it needs to be told if the contact is a window sensor or door sensor.

3. After confirming you have successfully joined all the ZigBee sensors needed with the Room Controller, set **Permit Join** setting on both the Room Controller and Building Expert to **Off**. This prevents any other ZigBee sensors from accidentally joining the network.

Once the pairing procedure is complete, proceed with the physical installation of the ZigBee sensor(s) according to the instructions in the **Installation Guide** appropriate to the model(s) of ZigBee sensor(s) being used.
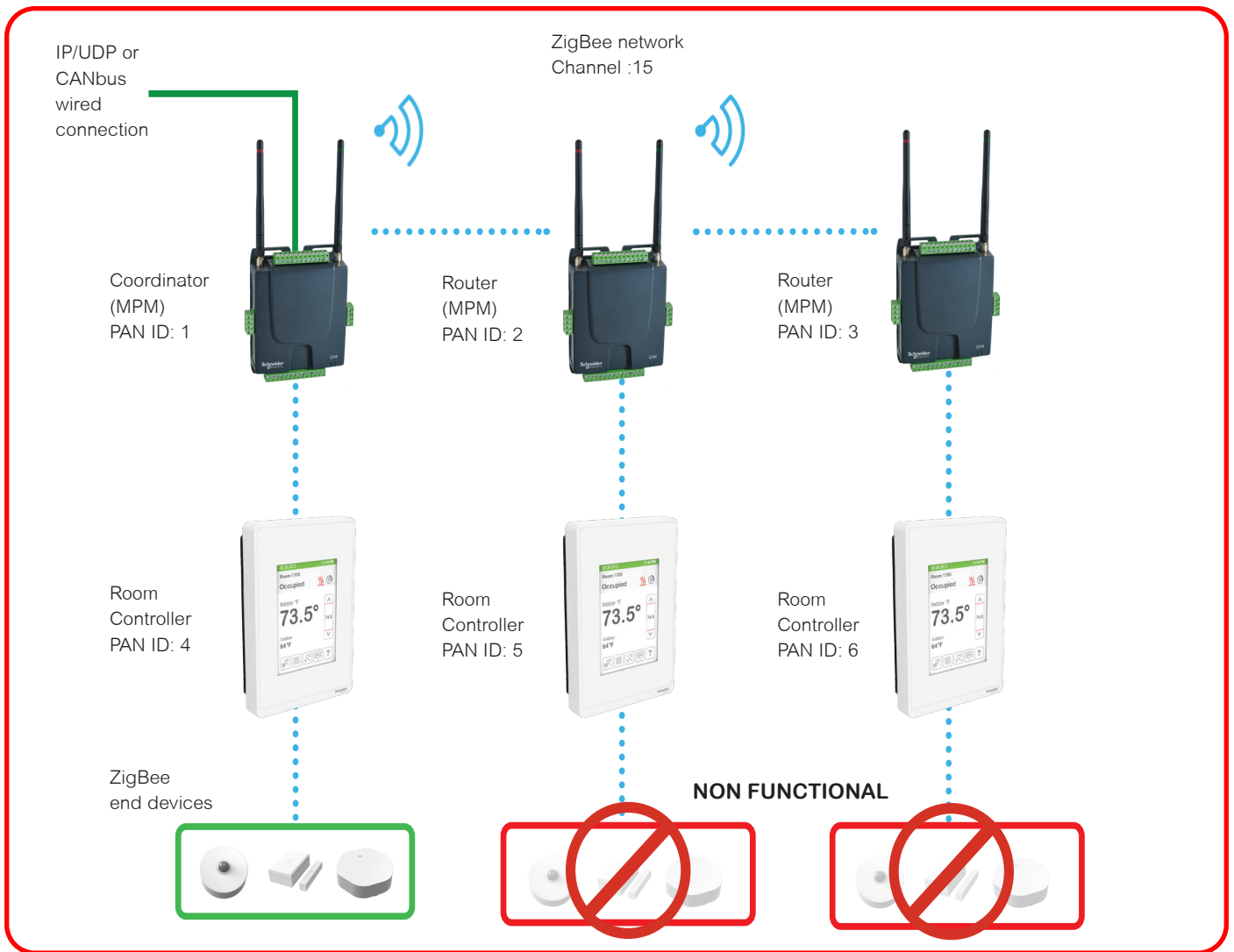
Appendix A
Binding ZigBee Sensors to Room Controllers in Network with Multiple MPMs

When pairing a ZigBee sensor with a Room Controller that is part of a network involving multiple MPMs, **it is necessary for all of the MPMs to be networked using IP/Ethernet (UDP) or Canbus, and to be functioning as a coordinator for their local ZigBee network of Room Controllers.**

If a Room Controller is instead bound to an MPM acting as a router on a wireless network using ZigBee, the pairing procedure for the ZigBee sensors described in this document **will not work**. For this reason, it is **not recommended** to use the ZigBee wireless networking for MPMs feature at the same time that ZigBee wireless sensors are used.

Incorrect network set up for ZigBee sensors

IP/UDP or CANbus wired connection

ZigBee network Channel :15

Coordinator (MPM) PAN ID: 1

Router (MPM) PAN ID: 2

Router (MPM) PAN ID: 3

Room Controller PAN ID: 4

Room Controller PAN ID: 5

Room Controller PAN ID: 6

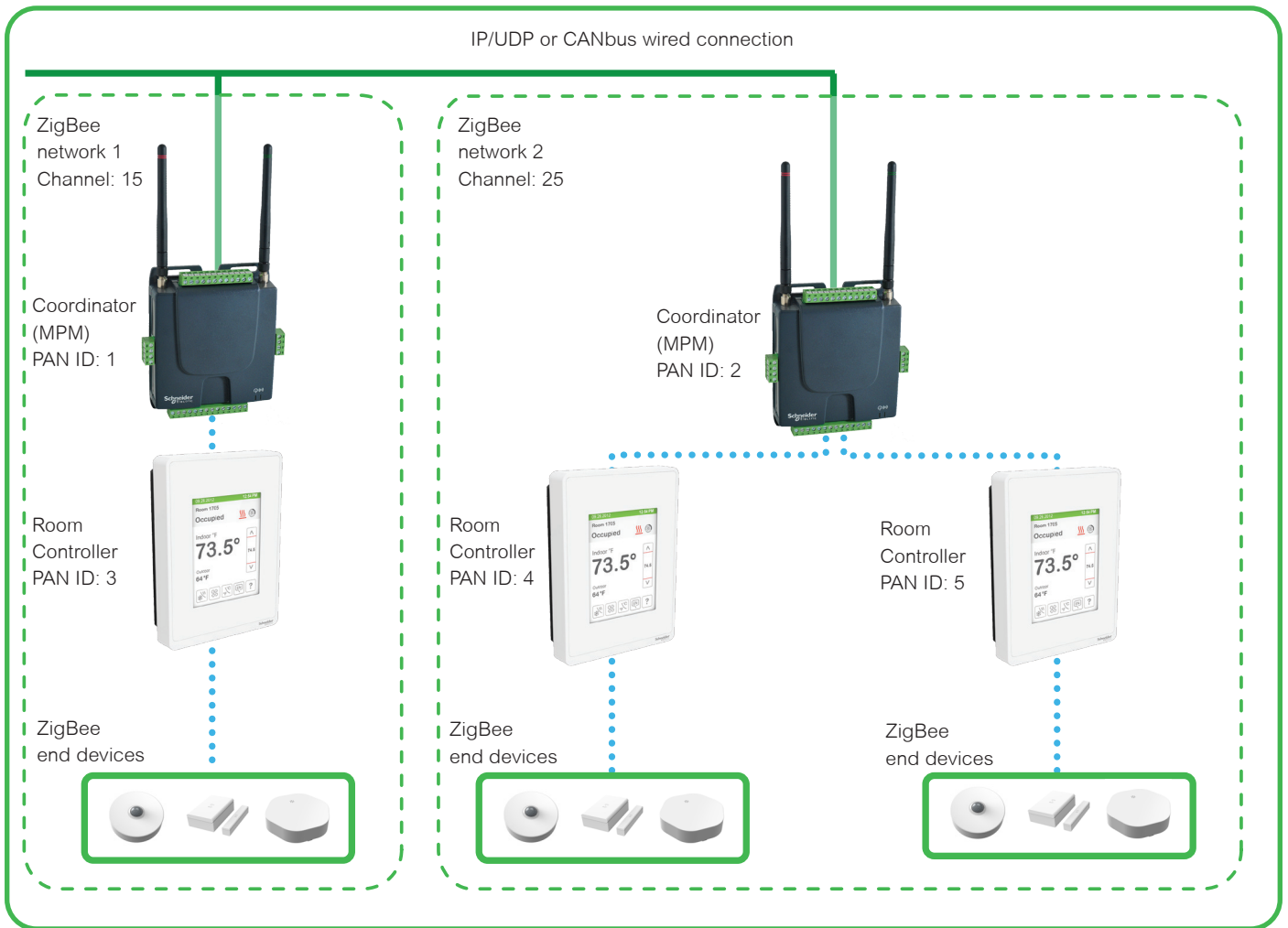ZigBee end devices

NON FUNCTIONAL

To use the ZigBee wireless sensors in a network with multiple MPMs, the general network architecture **must** resemble the diagram shown below.

If the general design of your network installation with MPMs, Room Controllers, and ZigBee sensors **does not match** that shown in the diagram below, contact Support for more information.

Note: Make sure each MPM controlling a ZigBee network has a different PAN ID. If the MPMs do not have different PAN IDs, the sensors will be unable to distinguish which network with which they are supposed to communicate. This causes them to malfunction. All MPMs have the same default PAN ID, and therefore, it is essential to configure the value when using ZigBee sensors.

Correct network set up for ZigBee sensors

IP/UDP or CANbus wired connection

ZigBee network 1
Channel: 15

Coordinator (MPM)
PAN ID: 1

Room Controller
PAN ID: 3

ZigBee end devices

ZigBee network 2
Channel: 25

Coordinator (MPM)
PAN ID: 2

Room Controller
PAN ID: 4

ZigBee end devices

Room Controller
PAN ID: 5

ZigBee end devices

Technical Support

For any issues with SmartStruxure Solution or SmartStruxure Lite, contact Schneider Electric Technical Support according to your region.

North America (NAM) Product Support
Building Management Systems (BMS): www.nampss.com

Global Product Support
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