GreenParking system

Commissioning guide
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1 Introduction

1.1 GreenParking system (GP)

The GreenParking system, hereafter referred to as GP, is a lighting system for covered parking garages. The GP will dim luminaires to background light level when no motion is detected. The GP is easy to commission with a remote control.

1.2 Working principle

The GP detects motion in areas that are used, and adjusts the light intensity. The luminaires in the GP can be combined. In this way, the lighting in an area can be customized in line with the use of that area.

1.3 Intended use

GP is designed to be used in covered parking garages.

1.4 About this commissioning guide

This commissioning guide helps to set the GP. It explains the options, and how to change them to your personal wishes.
1.5 Warnings

**CAUTION**

You must have an installation and commissioning plan available before you can install and commission the GP.

**CAUTION**

You must have all documentation before you can commission the GP.
CAUTION
Do not install the GP luminaire or sensor close to concrete constructions.

CAUTION
Do not install the GP control unit or sensor near a heater.
2 Before you start

2.1 Occupancy time

The time, in which the sensor detects motion and keeps the system at the maximum light intensity (100%).

2.2 Hold time

This is the time between the last detection of movement before the lights are actually dimmed down.

2.3 Grace time

The time in which the luminaires are dimmed from maximum light intensity (100%) to the background light level.
3 Check the installation

After the installation, all the luminaires are switched on to 100%. Test to see if the GP is correctly installed. See 3.2.

3.1 The remote control

Always aim the remote at the sensor in the luminaire precisely.

Feed-back message

Many actions, like (un)lock network, send parameters, will result in a feed-back message. The lights will flash twice if the action was successful and four times if it failed. You must wait for confirmation before you can send a next command. If a command failed, try again. Contact Philips if the failure persists.
3.2 Check the installation of the GP

Before you commission the GP, you can check to see if the installation of the GP luminaire was successful.

1. Aim the remote control at the luminaire and press the off button.
2. The luminaire should switch off.
3. Press the on button. The luminaire should switch on to 100%.

Reset the factory default, when the GP does not react as described above and try again. See 3.3.
3.3 Reset the factory default

When the GP does not react as described in paragraph 3.2, you must reset the luminaire to factory default.

1. Press the reset button
2. Aim the remote control at the sensor in the luminaire and press the green send button. Keep aiming the remote at the sensor till the LED on the remote stops blinking.

After a reset the lights will switch off (or remain off). It can take 12 seconds for the luminaire to reset. After this the luminaire will switch on.

Note, you will not see any direct response to a reset if the lights were off. This is normal.

If the reset did not help, you must check the installation, and replace parts if necessary. Also check if the GP is not locked. Unlock (see 7.1) and try to reset again.

¡ Do not leave the system in default mode!

After resetting a luminaire, continue to apply an application mode and complete the network. In case Out of The Box behavior is needed, apply mode 21 to each individual luminaire, see chapter 5.3.1.
4 Creating a network

Start the commissioning of the GP by creating a “network”.

4.1 What is a network

The GP can combine luminaires and sensors to form a network that equals a zone. All the luminaires in a network will react in the same way. If the GP detects motion in the network, all the luminaires in that network will switch on to 100%. A maximum of 50 luminaires and sensors can be combined in a network. The number of luminaires must be higher than the number of sensors.

If you want all the luminaires in an area to react on motion detection, make one network.

Check the sensor design to determine the location of the networks and sensors. Always follow this design.
4.2 One network

One network in a car park. The GP can have a maximum of 50 luminaires and sensors in one network.

In one network, the luminaires are in one mode. All the luminaires will react on motion detection as set by the current mode.

4.3 Multiple networks

When you make two or more networks, the luminaires in another network can be set in a different mode. Luminaires will only react on motion detection in their own network.

Check the sensor design to determine the location of the networks.
4.4 Create a network

Start in the center of the car park
Make certain you start to group 4 or more luminaires in the middle of the network, adjacent to each other. Work your way around this group. Luminaires at the perimeter of the area, especially those that have only 1 neighboring luminaire, should be added last (in example above luminaire 26).

Open the network
Walk to the first luminaire that you want to add to the network.
Aim the remote control at the sensor and press the add button.
Aim the remote control at the sensor and the open door button to open the network.
The luminaire will dim to 10% as confirmation that it is the first in the network.
Add luminaires to the network

Walk to the next luminaire
Aim the remote control at the sensor and press the add button.
After a few seconds, the luminaire will dim to 10% as confirmation that it is added to the network.
See Chapter 4 for more information about networks.
4.5 Place the sensors

Prepare the sensors
Put battery (included) in the sensor.
Set the timer counterclockwise to 1.
You should first group all luminaires in a network before you start adding sensors.

Activation of the sensors
If no indicator light sequence is visible:
- Remove battery
- Press button shortly
- Place battery
The sensor starts.
The indicator light becomes red, then yellow, then green.
When the indicator lights is out, the sensor is activated.

Place the sensor in the right position, but do not fixate it yet. The position might prove out of range.
The sensor should be in sight of at least 2 luminaires. You do not need to use the waterproof housing (if applicable) yet.
4.6 Install the sensors to the network

Push the button

Look at the indicator light
Good: After several orange flashes the LED flashes green. Go to Final Mounting.
Wrong: After several orange flashes the LED flashes red.
Reposition the sensor to get it in range of the network and push the button again.

Final Mounting
When done do final fixation. Mount the sensor in the waterproof housing (if applicable).
4.7 Close the network

Press the closed door button
All the luminaires in the network are dimmed to 50%.
A network can have a maximum of 50 luminaires and sensors.

⚠️ The commission of the GP is not completed at this moment.
Go to the next step.
4.8 Test the network

Test the installation
Aim the remote control at a luminaire.
Press the off button. All the luminaires in the network will switch off.
Press the on button. All the luminaires in the network will switch on to 100%.
If you want to add a luminaire to this network, walk to that luminaire, then go to 4.4.
Continue with setting a mode (chapter 5) or locking the network (chapter 6).
5 Setting a mode

After you have made a network, continue to commission the GP with the choice of a “mode”.

5.1 What is a mode

A mode defines in what way the luminaires will react. The mode that you set is for all the luminaires in a network. If you have more networks, different networks can have different modes.

5.2 Choose a mode

The GP has 3 modes, each with their own luminaire behavior. See the table for the mode that is best for you.

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Description</th>
<th>Hold time</th>
<th>Background level</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>standard setting</td>
<td>intermediate between saving and comfort.</td>
<td>4 minutes</td>
<td>20%</td>
</tr>
<tr>
<td>22</td>
<td>economic setting</td>
<td>maximum saving on energy costs.</td>
<td>2 minutes</td>
<td>10%</td>
</tr>
<tr>
<td>23</td>
<td>comfort setting</td>
<td>the best working area lighting.</td>
<td>6 minutes</td>
<td>30%</td>
</tr>
</tbody>
</table>

NOTE

A mode can only be set, if the network is unlocked. This is the case if you just installed the GP.
5.3 Standard settings

See chapter 2.
5.3.1 Set mode 21, 22 and 23

Set mode 21
1. Press the blue mode button.
3. Aim at the sensor in the luminaire and press the green send button.

Motion Detection: ON
Background level: 20 %
Hold time: 4 minutes
Power up setting: ON

Set mode 22
1. Press the blue mode button.
2. Press 22.
3. Aim at the sensor in the luminaire and press the green send button.

Motion Detection: ON
Background level: 10 %
Hold time: 2 minutes
Power up setting: ON

Set mode 23
1. Press the blue mode button.
2. Press 23.
3. Aim at the sensor in the luminaire and press the green send button.

Motion Detection: ON
Background level: 30 %
Hold time: 6 minutes
Power up setting: ON
5.3.2 Request the current mode

1. Aim at the sensor in the luminaire and press the ‘mode?’ button. First, the luminaires will dim to the background level.

2. Next, the luminaires will blink. Count the number of times that the luminaire will blink, as this corresponds with mode that is active. For instance, 2x + 1x blink means the GP is set in mode 21.

3. Finally, the luminaires will go back to the original setting.

[Diagram showing the sequence of events with labels for Max. level, Double digit, Mode #, Min. level, State before request, 2s., State after request = State before request, Press ‘mode?’ button, Start of second digit (end of first digit), 1s. at Min. level followed by 1s. at Max. level counts as 1 (this example = mode 21)]
6 Locking the Network

After you have set a mode (according chapter 5.3.1), you must lock the network to safe your settings and to make the GP operational.

1. Press the lock button.
2. Enter a code of 4 digits.
   Repeat the 4 digits (only necessary to save the code)
   You need the code the next time that you want to unlock the network.
   You need a Philips engineer on the project if you forget the code.
3. Press the green send button.

Steps 1, 2 and 3 should be repeated during first installation or when password has been changed (not only the 4 digits)

The GreenParking commissioning is now finished, the system is fully operational.
7 Optimizing the installation

The behavior of the luminaires in the GP can also be set per luminaire individually.

7.1 Unlock and Lock the network

If you want to set parameters, you must first unlock the network.

1 Press the unlock button.
2 Type the 4 digit code (see 6)
3 Aim the remote control at the sensor in the luminaire and press the green send button. Keep aiming the remote at the sensor till the LED on the remote stops blinking.

Now you can set parameters to individual luminaires in the GPS. You can make several changes for different luminaires before you need to lock.

4 Aim at the sensor in the luminaire and press the lock button.
5 Type the 4 digit code.
6 Wait for confirmation.
7.2 Set the hold time

The hold time is the time it takes for the GP to conclude that the area is empty, after the latest motion detection by the sensors. First, you must unlock the network. See 7.1.

1. Press the delay button. The LED on the remote control flashes.
2. Enter the hold time that you want to set. Use 2 digits. The entry that you give must be between 02 and 35 minutes.

   The LED stops flashing.

3. Aim the remote control at the sensor and press the green send button.

   If you want to apply the same setting to another luminaire, walk to that luminaire. Aim the remote control at the luminaire and press the green send button again.

When you have set all the luminaires that you want to adjust individually, you must lock the network to save your settings and to make the GP operational.
7.3 Set the background light level

The background light level is the light intensity of the luminaires, when no motion is detected anymore by the sensors. The background light level is set as a percentage of the GP maximum light intensity. The GP enables you to set the background light level per luminaire. First, you must unlock the network. See 7.1

1. Press the background button. The LED on the remote control flashes.
2. Aim at the sensor in the luminaire and press a number button. Press 0 for the drivers’ minimum of your system. Press 1 for 10% Press 2 for 20% Press 3 for 30% Press 4 for 40% Press 5 for 50% Press 6 for 60% Press 7 for 70% of the GP maximum.

The LED stops flashing.

3. Aim the remote control at the sensor and press the green send button.

If you want to apply the same setting to another luminaire, walk to that luminaire. Aim the remote control at the luminaire and press the green send button again.

When you have set all the luminaires that you want to adjust individually, you must lock the network to save your settings and to make the GP operational.

See chapter 7.1
7.4 Set the RF channel

When a network is created the system selects one of the three available RF channels. It is not possible to retrieve the channel in use. Sometimes it is necessary to change the RF channel due to poor network performance. This can for instance be caused by intense WiFi use near the network. Always consult a Philips representative first. First, you must unlock the network. See 7.1

1. Press the RF channel button. The LED on the remote control flashes.
2. Press 15 to set RF channel 15, or Press 20 to set RF channel 20, or Press 25 to set RF channel 25.

The LED stops flashing.

3. Aim the remote control at the sensor in the luminaire and press the green send button.

All luminaires in the network will be set to the same channel. Repeat this for all networks that require changing the RF channel. When a luminaire is added to a network (see chapter 4.4) the Luminaire will use the RF channel of the network.

When you have set all the luminaires that you want to adjust individually, you must lock the network to save your settings and to make the GP operational.

See chapter 7.1
7.5 Reset a luminaire

If the luminaire is not functional, or shows strange behavior, you must reset the luminaire. This action will reset the controller and the LED driver as well. When you reset a luminaire it will not be part of the network anymore. You have to group it again into a network. The rest of the network is not affected and will continue to operate normally. First, you must unlock the network. See 7.1.

1. Press the reset button. The LED on the remote control flashes.
2. Aim the remote control at the sensor in the luminaire and press the green send button. The luminaire will switch off, wait for 12 seconds and the luminaire will switch on again.

If you want to reset another luminaire, walk to that luminaire. Aim the remote control at the sensor in the luminaire and press the green send button again.

When you have set all the luminaires that you want to adjust individually, you must lock the network to save your settings and to make the GP operational.

CAUTION
You must commission the luminaire to the network again.
7.6 Retrieve the current mode

1  Unlock the network

2  Press the 'mode?'. First, the luminaires will dim to the background level.

3  Next, the luminaires will blink. Count the number of times that the luminaire will blink, as this corresponds with mode that is active.
   For instance, 2x + 1x blink means the GP is set in mode 21.

4  Finally the luminaires will go back to the original setting.

5  Lock the network

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<table>
<thead>
<tr>
<th>Max. level</th>
<th>Min. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>State before request</td>
<td>State after request = State before request</td>
</tr>
</tbody>
</table>

Press 'mode?' button

Start of second digit (end of first digit)

1s. at Min. level followed by 1s. at Max. level counts as 1 (this example = mode 21)

See chapter 7.1
7.7 Repeat an individual setting to another luminaire

To set luminaires quickly, just repeat an individual setting to another luminaire.

Walk to the next luminaire. Aim the remote control at the sensor and press the green send button again. Now the luminaire has the same individual setting.

You can repeat one setting at a time.
7.8 Set the task light level

This function is in the first releases not available!
You can modify the light level in a Network / Zone.
Use a lux meter to determine the actual light level, and change the systems light output accordingly.

1  Aim at the sensor in the luminaire and
press the up and down buttons on the
remote control to change the light level.
The LED on the remote control flashes.

2  Press the save button to confirm your
setting. The LED stops flashing.

3  The luminaires will blink to confirm that
the calibration was successful.

See chapter 7.1 parameter
7.9 Check sensor connectivity to network and identify failing sensor

1. Unlock the network
2. Open the sensor housing
3. On the sensor briefly press the ‘link’ button
4. The luminaires in the network will switch on or off depending on the previous state
5. In case the lights react, press again to switch the network to previous state
6. Continue with next sensor until the defective sensor is found
7. Repair the sensor
8. Lock the network
7.10 Add additional sensors

1. Unlock network and wait for confirmation (see 7.1).

2. Open the network where you want to add the sensor(s).

3. Put a battery in the sensor. Set the timer counterclockwise to 1.

The luminaires will dim to 50%.

Additional sensors can only be added on network level, you cannot add them to a zone!
4 Place the sensor in the right position, but do not fixate it yet. The position might prove out of range.

Push the button.

5 Look at the indicator light on the sensor.

Correct: after some yellow flashes the LED flashes green. Fixate the sensor. Go to step 6.

WRONG: after 6 yellow flashes the LED flashes red. Reposition (usually closer to standard WHS sensor) the sensor, then go to step 4.

6 Close the network.

The luminaires will go to 100%.

![Diagram of sensor and indicator lights]

See chapter 7.1
7.11 Remove sensor from network

To remove a OSW sensor from the network it is not relevant in which state the network is.

Press and hold the “Link” button until LED has turned green.
Then release the button.
This action resets the OSW device and it is no longer part of a network.
7.12 Add additional luminaire to network

1. Unlock network and wait for confirmation (see 7.1).

2. Open the network where you want to add the luminaire.

3. Aim the remote control at the sensor in the luminaire you want to add and press the add button. After a few seconds, the luminaire will dim to 10% as confirmation that it is added to the network.

Press the closed door button
All the luminaires in the network are dimmed to 50%. Lock the network to make GP operational.
7.13 Remove luminaire from network

To remove a luminaire from a network, the network needs to be in the “Test and Configuration” state. The actual action is resetting the luminaire to the “Factory new” state.

1. Unlock network and wait for confirmation (see 7.1).

   ![Unlock network and wait for confirmation](image)

   Caution. After resetting a luminaire it needs to be put in application mode 21, see chapter 5.3.1

2. Press the reset button. The LED on the remote control flashes. Aim the remote control at the sensor in the luminaire and press the green send button.

   ![Press the reset button](image)

   The luminaire will switch off, wait for 12 seconds and the luminaire will switch on again. Lock the network to make GP operational.
Appendix A  What to do if a luminaire cannot be assigned to a network

The Green Parking system uses a 2.4 GHz radio signal to communicate between the different luminaires and sensors. This radio communication is very difficult to predict. Radio signals reflect on surfaces like floors and may reach a receiver perhaps further away, while nearby receivers may be out of reach.

The system has numerous safe guards to prevent loss of communication. These are active in operation mode only, not during commissioning.

Fixing poor reception during commissioning may help to get the network completed and enable to start the operation mode.

⚠️ The following procedure is not a solution to use the system outside the given specifications. At all times the specification should be applied.

⚠️ The following procedure is not guaranteed to work at all times, but if the normal procedure fails, this is a good fallback to create a network.
Lowering the luminaire will have a positive effect on the sensitivity of the radio communication. In most occasions this is enough to create a network.
Mount the luminaire back in position after the network is closed and test if the communication is in place, using the remote control.

Reception is less critical during operation.

⚠️ If a commissioned luminaire is not in reach of its network, all lights in the network will stay on at 100% and sensors will not operate.