

People counting sensor



User Manual



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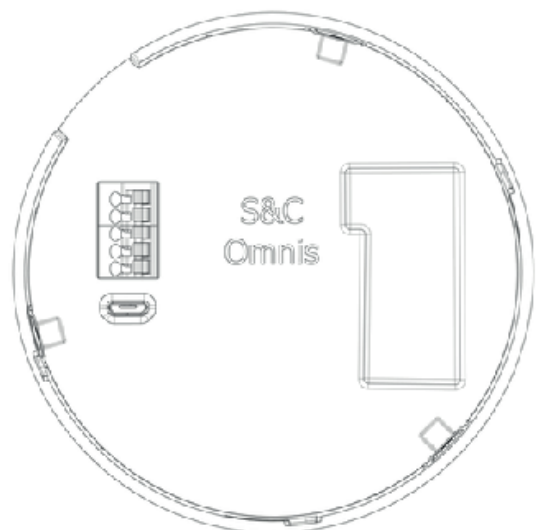
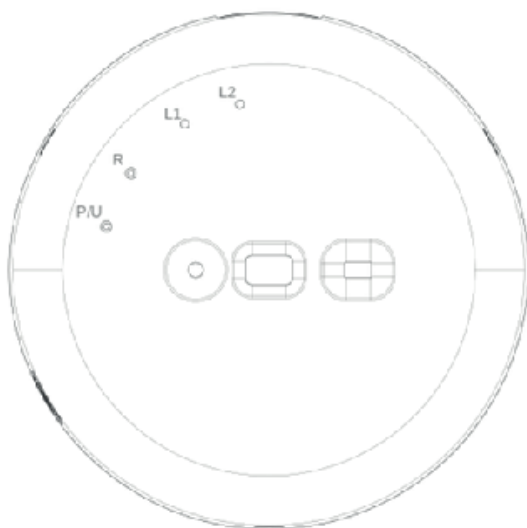
1. Presentation

The people counting sensor by Smart & Connective is an occupancy sensor that uses a groundbreaking technology able to count precisely and in real-time how many people are in a room, thanks to powerful algorithms.



This is an unobtrusive device, without camera, that uses heat sensor and motion detector to monitor occupancy. We don't need to see to know your occupancy and save energy!

Several people counting sensors can work simultaneously in the same room and aggregate their data to monitor multiple access. It can be installed in areas with a height between 2.5m and 4m. It is totally complementary to the Smart & Connective multifunction sensor which is used for heights of less than 2m30.



2. Specifications

- Analyzes footfall
- Counts people in a room
- Occupancy sensor
- Motion detection
- Integrated auto calibration
- No camera

Dimensions	105mm x 25 mm (D*H)
Housing	ABS Plastic
Installation	Ceiling mounted with 3 screws or double-sided adhesive tape
Power	5V micro USB power cable
Operating temperature	0 to 55°C
Radio protocol	Z-Wave / BLE
Range of detection	Pyramid of 8.3 to 33,4 square meter at the base
Operating height	2.5m to 4m
Warranty	Standard -2 years
Regulatory compliance	Security : UL EMC : CE RoHs

3. Process of inclusion, exclusion and restoring factory settings

Before to begin, check that you are connected to the correct Automation whose access point name is "scap| Number_ID"

The 4 red leds must be visible on the front side.



Inclusion

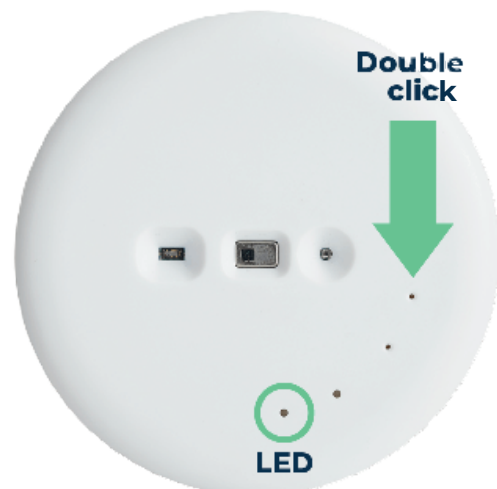
Step 1

Go to **CEOS MANAGER** and choose the people counter sensor to include.

Click on the **"Pair"** button to set the automation into inclusion mode.

Step 2

Double click with a pin into the **"P/U"** hole and check that the green led blinks **2 times**.



Exclusion

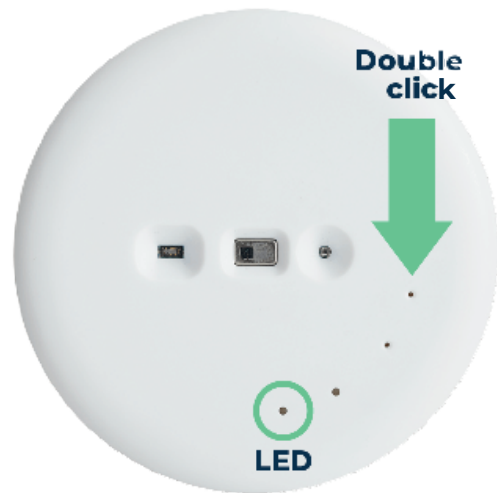
Step 1

Go to **CEOS MANAGER** and choose the people counter sensor to exclude.

Click on the **“Unpair”** button.

Step 2

Double click with a pin into the **“P/U” hole** and check that the green led blinks **2 times**.

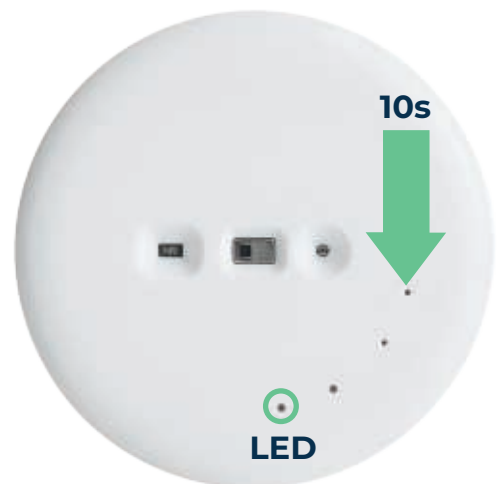


Restoring factory settings

The factory reset allow to both **empty the memory** and **to exclude** the device from the Z-Wave network.

Process

Insert a pin for **10s** into the **“P/U” hole** and check that the green led blinks **(2 times)**



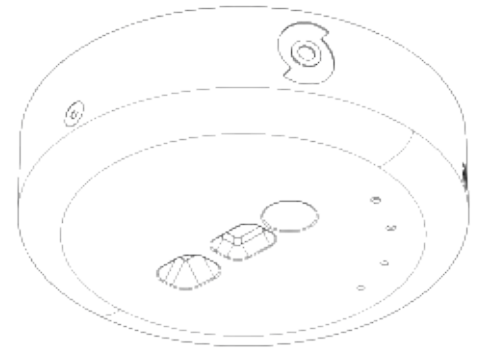
Remark : You can also just reset the counters. To do this, all you have to do is insert a pin and click **1 time** into the **“R” hole**.

The red led will flash for **2s** allowing you to leave the room. When the LED goes out, the counters are reset to 0.

4. Installation

The People Counting sensor allows to analyze the movement of people in large areas. In order to maximize the efficiency and size of the detection area of your People Counting sensor, it must be installed precisely on the ceiling, both in terms of position, orientation and height.

Warning : For proper operation, the sensor must be installed in areas with a ceiling height between 2.5m and 4m.



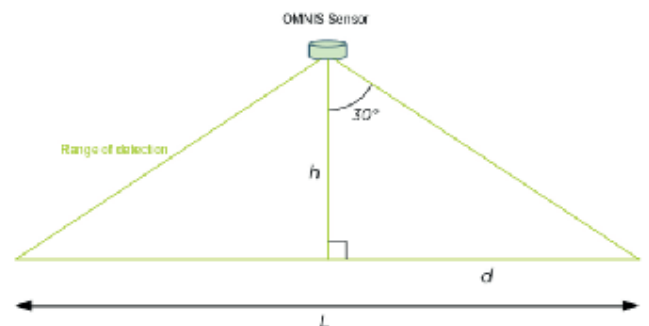
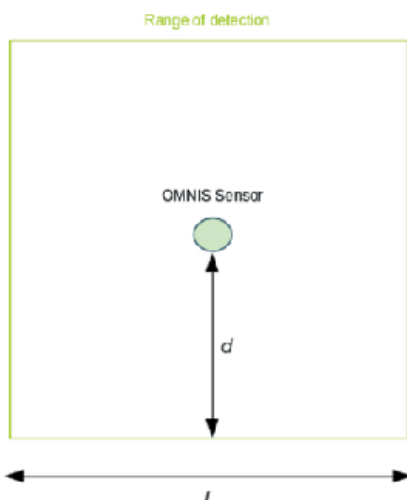
Positioning

To maximize the efficiency of your sensor to detect occupancy and optimize its range of detection, it has to be positioned accurately on the ceiling, depending on the dimensions of your room.

Step 1

1. First step to do so, is to have a precise measurement of the ceiling height (**"h" on the blueprint**).

This will give you an idea of the minimum distance your sensor needs to be positioned away from the entrance you want to monitor (**"d" on the blueprint**) and thus the length of the square defined on the ground by the range of detection of your sensor (**"L" on the blueprint**) and the surface of it (**"S" in the chart**).



Remark :

Depending on the configuration, it is advisable to position your sensor at a distance d + a few meters of safety to avoid being impacted by a flow of hot or cold air from outside.

2.

The following table gives you some height to distance ratios for the most common ceiling heights we can encounter for a room.

h (cm)	d (cm)	L (cm)	S (m ²)
250	144	288	8.3
260	150	300	9
270	156	312	9.7
280	162	324	10.5
290	167	334	11.2
300	173	346	12
350	202	404	16.3
400	231	462	21.3

3.

Depending on the measures you have for your room height, if you can't find the corresponding values in this chart, you can calculate them with the following trigonometric formulas:

$$d = \tan(30^\circ) * h$$

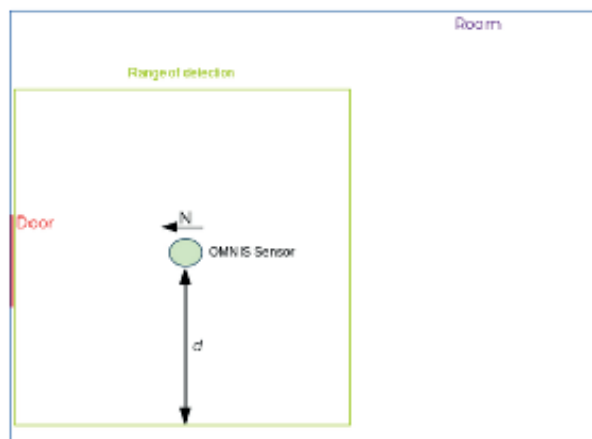
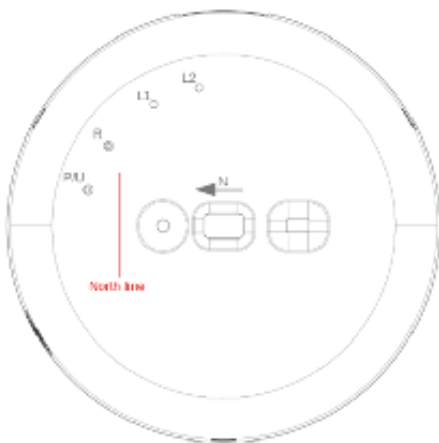
$$L = d * 2$$

$$S = L * L$$

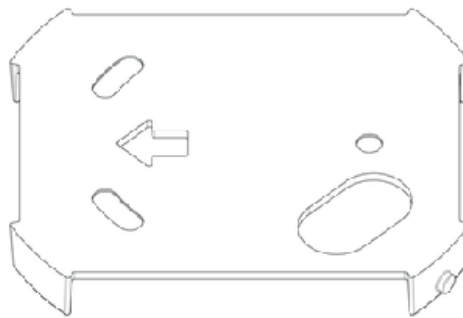
Step 2

In order to have a proper monitoring of the occupancy of your room, the direction of your sensor is also important.

Your sensor has to be orientated so that the "North" arrow is pointing at the entrance you want to monitor (the red line indicates the counting line that should be aligned with the door)



To make the manipulation easier, the back plate of your sensor, that is going to be fixed on the ceiling, has an arrow on it. Remove this back plate from your sensor (left 1/4 turn). Place it on the ceiling and mark the position of the 3 screw holes. Drill the holes and screw the plate to the ceiling. You can also use double-sided.



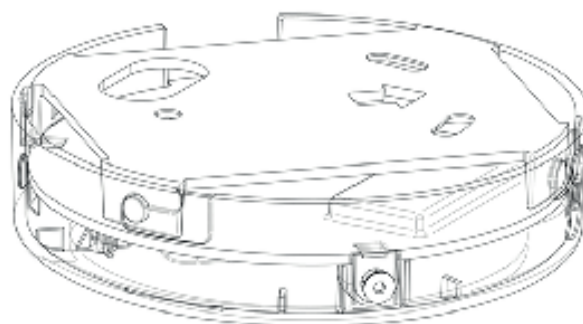
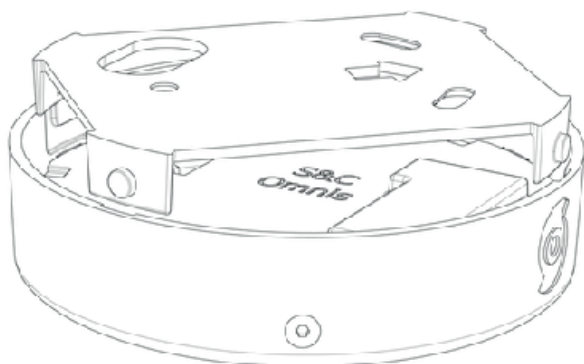
Step 3

To install your sensor, start by plugging the micro USB power cable on it (the cable can go either by the top hole, or the side one, depending on your installation), then put the sensor back with a right 1/4 turn.

After your sensor is correctly positioned, we recommend to reset the counter, as the sensor is already powered it could have counted the persons that set it in the room.

To do this, all you have to do is insert a pin and **click 1 times** into the **hole R**.

The red led will flash for **2s** allowing you to leave the room. When the led goes out, the counters are reset to 0.



5. Smart & Connective portal user guide

It is with the Smart & Connective Portal that we can configure and control all aspects of people counting sensor behavior. We will also be able to create automatic rules both to control our building and be able to save energy.

Here are all the settings:



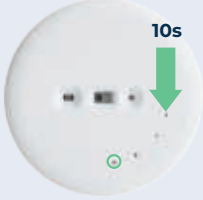

Name	Function	Controllable / Status feedback
Average Temperature in FoV	Displays the average temperature at the matrix level projected by Omnis	Status feedback
Local people counter	Number of people currently in the matrix	Status feedback
Global people counter	Current number of people counted in the room/area	Status feedback
Reset counter	Allows to rest the counters: -Number of people in the FoV -Number of total people in the room	Status feedback

1/2

Name	Function	Controllable / Status feedback
Activate detection line	Enables or disables the virtual detection line that allows you to count the number of total people in the room.	Controllable and Status feedback
People too close	Used especially during covid, allows to detect if people are too close	Status feedback
Global people counter	Allows you to know if people are detected in the Fov (matrix projected by Omnis)	Status feedback

2/2

6. Summary

Function	Action / Description	Indication
Inclusion	-Set your CEOS in inclusion mode via CEOS MANAGER - Double click with a pin into the "P/U" hole => The green led blinks 2 times	
Exclusion	-Set your CEOS in exclusion mode via CEOS MANAGER - Double click with a pin into the "P/U" hole => The green led blinks 2 times	
Reset Factory	-Insert a pin for 10s into the "P/U" hole => the green led blinks 2 times	
Reset counter	- Click one time with a pin into the "R" hole => The red led blinks 2 times	
S&C portal	https://my.smartandconnective.net/#/login/form	Allows you to configure everything
CEOS Manager	http://10.0.0.1:5000/#/manager/devices	Allows you to include/exclude devices
Pocket assistant	https://play.google.com/store/apps/details?id=com.pocketassistant&hl=en&gl=US	App for users
Site S&C	https://smartandconnective.com/se-connector/	Integrator access on the main site of S&C