Passive infrared ceiling sensor

Description
Control and command device, powered by the SCS BUS, with two different sensors, the combination of which enables managing the light level inside the room, taking into account both the presence of people, and the level of natural light, therefore ensuring efficient energy savings and better user comfort.
The device has an IP 20 protection index, and is intended for ceiling mounted installation.

The sensor is fitted with:
- BUS wiring connector;
- PIR movement sensor;
- light sensor;
- internal microcontroller;
- two-colour LED;
- multifunction key;
- configurator socket.

PIR movement sensor:
it detects the presence of people inside the room. It’s used inside rooms with free view, without obstacles, for the detection of people.

Light sensor:
it detects the light level inside the room, switching the load ON or OFF based on whether the light threshold set on the sensor (adjustable by the user) is lower/higher than the value detected. The light sensor has priority on the movement sensor: if the PIR sensor detects a presence, but natural light is sufficient, no load management signal is sent by the device. In order to avoid continuous switching ON and OFF, a tolerance on the threshold values must be set.

The sensor may be installed in a MY HOME system and can be configured both physically and virtually, or as a component of the Lighting Management system using specific configuration procedures (Plug&Go, Push&Learn, Project&Download).

Technical data
Power supply: 27 Vdc
Absorption: 10 mA
Operation: ON/OFF, dimmer
Operating temperature: (-5) – (+45) °C
Sensor type: PIR
Protection index: IP20
Sensitivity: 1 – 2000 lux
Time delay: 30 s – 255 h
Coverage of the PIR sensor at 2.5 m: Ø 6m (28m²)
Covering angle: 90/360°
Maximum installation height: 4 m
Type of connection: screw clamps

Standards, Certifications, Marks
EN 50428

Legend
1. LED indicator:
   - fixed green = BUS detected
   - orange flashing once = movement detected.
   - orange-green flashing quickly = no configuration or wrong configuration.
   - orange-green flashing for 1 second = configuration being performed
   - red flashing quickly = acquiring the Set Point
   - red-green flashing quickly = sensor calibration being performed

2. Light sensor
3. Infrared PIR movement sensor
4. Multifunction key:
   - Short pressure to select the device when using the virtual configuration.
   - Pressure for 2 seconds, for the acquisition of the Set Point when working in Stand Alone Mode.
   - Two short pressures to enter the Push&Learn procedure during operation with the Lighting Management system.
   - A short pressure, followed by an extended pressure of 10 sec. to reset the sensor.

5. BUS connection screw clamps
6. Configurator socket
(attention, it must only be used in MY HOME systems with physical configuration)
MY HOME configuration

When installed in a MY HOME system, the device may be configured in two ways:

- PHYSICAL CONFIGURATION, by connecting the physical configurators to their sockets.
- VIRTUAL CONFIGURATION, by connecting the system to the PC or the web server. The Virtual configurator software must be installed on the PC.

Physical configuration

The features of the device are defined by 6 configurator sockets, and their functions depend on the operating mode:

Room: \( A = 1 \text{ – } 9 \)
Light point: \( PL = 1 \text{ – } 9 \)
Mode: \( M = 0 \text{ – } 8 \)

PIR movement sensor sensitivity: \( S = 0 \text{ – } 3 \)
Load ON time: \( T = 0 \text{ – } 9 \)

WARNING: Addresses \( A = 0 \) and \( PL = 0 \) do not exist.
<table>
<thead>
<tr>
<th>Possible function</th>
<th>Configurator in M</th>
</tr>
</thead>
<tbody>
<tr>
<td>The device controls the load with the address indicated in A and PL. When a movement is detected, if the light level is lower than the set level, the device switches the assigned load on, and keeps it on until the time set with the configurator connected to T expires (Auto Mode). The PIR movement sensor sensitivity is set with the configurator connected to S. For correct operation, the sensor lighting set point must be set (see procedure). If the user switches the light OFF manually with a control device, the movement sensor is disabled until a movement is detected, for a time set in T.</td>
<td>0</td>
</tr>
<tr>
<td>In this mode the sensor operates as a pure twilight switch, the movement sensor is disabled. When the light level falls below the set threshold, the device switches the load on, and switches it OFF when the light level exceeds the threshold again (Auto Mode). Configure A = 1-9 and PL = 1-9. GEN, ROOM and GR configurators cannot be connected. In this mode configurators S and T are not connected.</td>
<td>1</td>
</tr>
<tr>
<td>In this mode the device does not directly manage a load, but sends to the scenario programmer the notification of a movement and the lighting value. In this case the device address will be connected to A and PL, which must be unique within the system. Therefore, the GEN, ROOM and GR configurators cannot be connected. In this mode the S and T configurators are not connected, as these parameters are managed directly by the scenario programmer.</td>
<td>2</td>
</tr>
<tr>
<td>In this mode the device directly manages the load, maintaining a constant light level inside the room (this mode is only valid if the sensor manages a dimmer); when a movement is detected the device switches the light on and keeps it on based on the presence of people and the desired light level (Auto Mode). When a movement is detected, if the light level is lower than the set level, the device switches the assigned load on, and keeps it on until the time set with the configurator connected to T expires. During its operation the sensor maintains a constant light level based on the configurator connected to D; for example, when the outside light level increases, the device decreases the brightness of the load driven. For correct operation, the sensor lighting set point must be set (see procedure). It is possible to change the threshold set using a control that changes the brightness: this new value is set as a new sensor set-point until the next switching ON.</td>
<td>3</td>
</tr>
<tr>
<td>In this mode the device operate as a pure twilight switch and manages the load directly, maintaining a constant light level inside the room, disabling the presence sensor (this mode is only valid if the sensor manages a dimmer). The switching ON of the load is manual, while the switching OFF is managed automatically by the sensor based on the desired light level (Eco Mode). When the light is OFF the sensor therefore does not switch the load on, but waits for the user to do so using a manual control. During its operation the sensor maintains a constant light level based on the configurator connected to D; for example, when the natural light level increases, the device decreases the brightness of the load driven. Once the load has been switched OFF, if the natural light level decreases the sensor will no longer switch the load on, but will wait for the user to do so manually. For correct operation, the sensor lighting set point must be set (see procedure). It is possible to change the threshold set using a control that changes the brightness: this new value is set as a new sensor set-point until the next switching ON.</td>
<td>4</td>
</tr>
<tr>
<td>The device controls the load with the address indicated in A and PL (SEE FUNCTION WITH M=0). The switching ON of the load is manual and the device keeps the load on based on the presence of people and the desired light level (Eco Mode).</td>
<td>5</td>
</tr>
<tr>
<td>In this mode the device maintains a constant light level inside the room (SEE FUNCTION WITH M=3). The switching ON of the load is manual and the device keeps the load on based on the presence of people and the desired light level (Eco Mode).</td>
<td>6</td>
</tr>
<tr>
<td>In this mode the sensor operates as a pure twilight switch, the movement sensor is disabled (SEE FUNCTION WITH M=1). The switching ON of the load is manual and the device keeps the load on based on desired light level (Eco Mode).</td>
<td>7</td>
</tr>
<tr>
<td>In this mode the device operates as a pure twilight switch and directly manages a load, maintaining a constant light level inside the room, disabling the movement sensor (SEE FUNCTION WITH M=4). When the light level falls below the set threshold, the device switches the load on, and switches it OFF when the light level exceeds the threshold again (Auto Mode).</td>
<td>8</td>
</tr>
</tbody>
</table>

**WARNING:** when managing scenarios using the information from the sensor, using the scenario programmer, the sensor must be configured exclusively in M=2 mode.
1) Table of the active load times based on the configurator connected to T:

<table>
<thead>
<tr>
<th>Configurator in T</th>
<th>Active load time in min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No configurator</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>30 sec.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>9</td>
<td>40</td>
</tr>
</tbody>
</table>

2) Sensitivity table for the PIR movement sensor based on the configurator connected to S:

<table>
<thead>
<tr>
<th>Configurator in S</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>No configurator</td>
<td>Low</td>
</tr>
<tr>
<td>1</td>
<td>Medium</td>
</tr>
<tr>
<td>2</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Very high</td>
</tr>
</tbody>
</table>

Procedure for the acquisition of the sensor lighting set-point:

- Press the pushbutton for two seconds.
- The LED will start flashing red quickly.
- Move away from under the sensor, so that it can perform a correct measurement.
- After about 20 sec. the LED stops flashing and the sensor finishes the acquisition.

NOTE: It is important that the set-point is reacquired every time the sensor position is changed, and every time that what is under the sensor changes.

Virtual configuration

Using the Virtual configurator software it is possible to perform all the functions listed below:
- local lighting/movement detector
- local lighting sensor
- local movement sensor
- central lighting detector
- central lighting sensor
- central movement sensor

Lighting Management configuration

When installed in a Lighting Management system, the device can be configured in the following ways:
- Plug&Go (see the dedicated technical guide)
- Push&Learn
- Project&Download,

Using the Virtual configurator software it is possible to perform all the functions listed below:
- local lighting/movement detector
- local lighting sensor
- local movement sensor
- central lighting detector
- central lighting sensor
- central movement sensor

For more information on the functions see the glossary before the Technical sheets chapter.

Installation mode

The sensor must never be installed near heat sources or near the splitter of the cooling system.