Presence Detectors

Description
EE810, EE811 and EE812
High performance presence detector that will be used in premises or in passage areas, where they increase comfort and reduce drastically the energy costs.

Combination of a presence area and a motion area.
The presence area is especially interesting in offices, where the motion area may be used in long corridors.
Head rotation for detection area adjustment.
Settings via potentiometers.

Applications
EE810 - 1 channel detector
Direct control of a light load or used as a slave for detection area enlargement.
Lux level and ON delay setting via potentiometers.
Test mode in order to set lux level and the detection pattern.
EE811 - 2 channels detector
Light relay output for direct control of a light load.
Presence output potential free relay.
Lux level, on delay setting for light channel and presence channel via potentiometers.
Input for slave (EE810) and/or override push button.
EE812 - Light regulator 1/10V
Light regulator with 1/10V output in order to control electronic ballasts and/or Hager dimmers EV100/EV102. Detector especially dedicated for energy saving and comfort purpose.
Input for slave (EE810) and/or override pushbutton in order to modify the setpoints.
Lux level, ON delay for light channel and min level via potentiometers.
3 functional modes:
- no dimming, dimming with local setpoint, dimming with remote setpoint.
EE813 : accessory to surface mounting.
Complies with IEC 60 609-1 and 60 669-2-1.

Description
Presence detector 1 channel
- relay output light channel
- lux level and on delay (duration or pulse) defined via potentiometers
- Slave output for association with EE811/EE812 - Lux OFF

Characteristics
230V – 50Hz
μ16A AC1
triac output 0.8A

Pack
1

Cat. ref.
EE810

Presence detector 2 channels
- Relay output light channel
- lux level and On delay define via potentiometers
- input slave / override
- 230V input used with push button to toggle the light channel state or with slave in order to enlarge the detection area
- Relay output presence channel
- on delay presence defined via potentiometer
- μ2 A AC1

230V input 50Hz

Pack
1

Cat. ref.
EE811

Presence detector 1/10V
- Relay output used to switch ON/OFF the electronic ballast
- 1/10V output used to control an electronic ballast or Hager dimmers EV100/EV102
- 230V input used with push button to toggle the channel or change the setpoint or with slave in order to enlarge the detection area
- 3 functional modes defined via potentiometers
  mode 1 : no dimming
  mode 2 : dimming with local setpoint via potentiometer
  mode 3 : dimming with setpoint defined via a remote push button

230V input 50Hz

Pack
1

Cat. ref.
EE812

Accessory
mounting accessory for surface mounting
can be used with EE810, EE811, EE812

Pack
1

Cat. ref.
EE813
## Presence Detectors

**EE815 - presence detector**

ON/OFF  
Direct control of a light load  
Lux level and ON delay settings  

**EE816 - presence detector for light regulation**

3 functional modes  
DALi/DSI bus output

**Description**  
High performance presence detector that will be used in premises or in passage areas, where they increase comfort and reduce drastically the energy costs.  
Settings via potentiometers or via remote control EE807

<table>
<thead>
<tr>
<th>Description</th>
<th>Characteristics</th>
<th>Pack qty.</th>
<th>Cat. ref.</th>
</tr>
</thead>
</table>
| Presence detector monobloc on/off | switched phase  
16A AC1 230V  
power supply: 230V AC  
detection angle 360° | 1 | EE815 |
| Presence detector monobloc DALi/DSI for lighting regulation | DALi/DSI bus  
power supply: 230V AC  
detection angle 360° | 1 | EE816 |
| Remote control for the settings | infra red remote control | 1 | EE807 |
| Remote control for the customer | infra red remote control | 1 | EE808 |
Presence Detectors

Detection areas

<table>
<thead>
<tr>
<th>X</th>
<th>13</th>
<th>15.5</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

Description

- Lighting time delay
- Adjustment potentiometers
- Residual lighting
- Time delay with the interlocking

Adjustment potentiometers

1. **on delay** light regulation
2. **residual lighting** + time delay with the interlocking
   - **mode 1**: potentiometer > 10 s = time delay with the interlocking 15 min (use: correction of the setpoint, heating, etc.)
   - **mode 2**: potentiometer ≤ 10 s = time delay with the interlocking 15 s (use: ventilation/ventilation, synoptic lighting, ...)

Test mode:

This mode makes it possible to validate the detection area:

- Potentiometer 1 in position "test"
- Indicator V1 - 4 will indicate any detection by lighting for one second if the level of illumination is lower than the preset threshold. This lighting output S1 is not controlled in this mode, the time settings will remain ignored.

**Instances of lighting levels**

<table>
<thead>
<tr>
<th>Position of Potentiometer</th>
<th>Lux Value</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>corridor</td>
</tr>
<tr>
<td>3</td>
<td>200</td>
<td>corridor, WC</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>VDU work</td>
</tr>
<tr>
<td>5</td>
<td>500</td>
<td>offices</td>
</tr>
<tr>
<td>6</td>
<td>800-1200</td>
<td>classrooms laboratory</td>
</tr>
</tbody>
</table>

**Regulation set painted is set at 400 Lux**

Technical specifications:

<table>
<thead>
<tr>
<th>References</th>
<th>EE810</th>
<th>EE811</th>
<th>EE812</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>presence detector</td>
<td>presence detector</td>
<td>presence detector</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>230V~ +10%/-15% / 50Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>output brightness 1/3</td>
<td>potentiometer: auto (400 Lux) 5 to 1200 Lux, OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>output temporisation 1</td>
<td>potentiometer: 1 - 30 min, test, impulsions (EE810)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>output temporisation 2/3</td>
<td>potentiometer: 30 s - 1 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>residual brightness</td>
<td>-</td>
<td>-</td>
<td>Potentiometer 0-50%</td>
</tr>
</tbody>
</table>

**Breaking capacity**

- **output 1 (lighting)**: 16 A AC+, incandescent lamps, halogen: 1500W fluo with electronic ballast: 580W fluo paralleled compensated: 290W/32µF
- **output 2 (presence)**: -
- **output 3 (brightness setting)**: -
- **input command 50 m max.**: - 230V commutation
- **LED**: OFF, auto, ON: movement/test
- **Power consumption**: 1.2 W
- **Ingress protection**: IP41
- **Connection**: 1 - 4mm²
- **Temperature**: storage: -10°C to +60°C working: 0°C to +45°C
Lighting measurement
In addition to one density of higher detection, the difference between one presence detector and a conventional detector of movements reside at the level of their principle of detection.
The detector of movements will be activated in the event of detection of movements in the darkness. If the latter is transformed into lighting during the capture, the detector of movements will not extinguish however the light. One presence detector must be able to fill of such tasks and to make the difference between the natural and artificial light.
The measurement of lighting carried out since the ceiling can be different from the measured lighting, because it will be influenced by the provision of the windows, the form and the reflective properties of the walls and the pieces of furniture, etc measurement moreover will be delayed in order to avoid inopportune commutations.

Presence detection
based on a solution patented by Hager, the optical part presence detection rests on a double lens making it possible to obtain a zone of rectangular capture of form. The head of the detector can also swivel to adjust the detection zone. The latter is subdivided in two sections equipped with a density higher than the center and a density to reduce in the direction length. In the offices, these detectors should thus be assembled directly above the places of work, resp. in the direction length for an installation in corridors (zones of circulation).

Detection zone
Covering a rectangular detection zone of 13 x 7m, the Hager presence detectors represent an ideal solution for the offices, classrooms, toilets, corridors, markets and garages. In the event of assembly of two detectors in order to increase the range of detection, it is then recommended to respect a zone of covering of approximately a meter. Only two detectors will be thus necessary to cover a 25m length market. A possibility of circuit Master/Slave exists for the commutation of only one group of luminaries. The presence detector principal one (Master : EE812 or EE811) measurement the lighting and the presence, then commutates and controls the electric consumers. Auxiliary presence detectors (Slave : EE810) detect only the presence and will presence detector announce this one to principal, which will carry out commutation then by taking account of the lighting. The diagrams of wiring are illustrated in the respective instructions.

Assembly
The behavior of commutation will be determined by the passage of people in the zone of capture of the detector. In exceptional cases, an inopportune commutation can be caused by various influences. The sources of potential parasites should already be evaluated during the study of the project, resp. eliminated before the assembly.

Obstacles decreasing the range of the detector :
• the partition walls, plants or racks, etc can limit the range of detection.
Simulated movements :
• the presence detectors capture fast modifications of temperature in the environment of the detector as being movements, for example at the time of or the stop starting of lowers with hot air, ventilators etc when the flow of air is directed directly on the lenses or of the objects near the zone of capture of the detector.
• objects being heated slowly do not have a negative influence and do not cause inopportune commutation.
A side distance > 0,5m should however be respected.
Proximity of the conduits of heating and the bodies of radiators.
• luminaries switching on themselves and dying out near the zone of detection can simulate a displacement (p.e.g of the lamps incandescence or halogen located at a distance < 1m).
• objects moving such as mobile machines, robots, posters can also cause an inopportune detection.
**Technical characteristics**

<table>
<thead>
<tr>
<th>Setting</th>
<th>EE815</th>
<th>EE816</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection range</td>
<td>motion area: diameter 7m (product installed at 2.5m height)</td>
<td>presence area: diameter 5m (product installed at 2.5m height)</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>230 V AC +10% -15%</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Local lux threshold setting</td>
<td>5 to 1000 lux</td>
<td>3 modes available</td>
</tr>
<tr>
<td>Local time setting</td>
<td>1 min to 1 hr</td>
<td></td>
</tr>
<tr>
<td>Commissioning via installer remote control</td>
<td>EE807 for power up, absence / presence mode, timer, active / passive cell</td>
<td>EE807 for power up, absence / presence mode, timer, active / passive cell</td>
</tr>
<tr>
<td>Control with IR user remote control</td>
<td>EE808 for ON/OFF override</td>
<td>EE808 for ON/OFF override and dimming up / down</td>
</tr>
<tr>
<td>Output</td>
<td>16A AC1 relay output (cut live):</td>
<td>14V / 50mA (for a DALI bus with 24 ballasts)</td>
</tr>
<tr>
<td></td>
<td>- 2300W incandescent or 230V halogen: &gt; 26000 cycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1500W V/LV halogen lamps with ferromagnetic or electronic transformer: &gt; 35000 cycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1000W / 130 µF parallel compensated fluo tubes: &gt; 50000 cycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 23 x 23W fluo-compact with electronic ballast: &gt; 20000 cycles</td>
<td></td>
</tr>
<tr>
<td>Push button input</td>
<td>phase input for absence / presence detection (semi-automatic / automatic mode) same phase as power supply</td>
<td>to dim up / down and absence / presence detection(semi-automatic / automatic mode) same phase as power supply</td>
</tr>
<tr>
<td>Terminals</td>
<td>for 1,5mm² rigid / flexible wires</td>
<td></td>
</tr>
<tr>
<td>Power dissipation</td>
<td>300mW</td>
<td>60mW</td>
</tr>
<tr>
<td>Isolation class</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>IP41 / IK03</td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10°C to +45°C</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20°C to +60°C</td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td>IEC 60669-1, IEC 60669-2-1</td>
<td></td>
</tr>
</tbody>
</table>

**Detection areas**

![Detection areas diagram](image)

**Mounting**

![Mounting diagram](image)

**Settings EE815 / EE816**

![Settings diagram](image)

**Wiring diagram EE815**

![Wiring diagram EE815](image)

**Wiring diagram EE816**

![Wiring diagram EE816](image)