

GESM - LINE VOLTAGE SENSOR

Detection sensibility

Optimised for detection of pedestrians with a speed of 0.5 – 1.5 m/s corresponds to 1.8 – 5.4 km/h.

Depending on the application and environmental conditions, the maximum detectable speed of object may vary.

GESM - SURFACE MOUNTED PIR MOVEMENT SENSOR

Overview

The GESM movement sensor is designed to provide automatic control of lighting, heating or ventilation loads. It detects movement using a PIR sensor and turns the load on. When an area is no longer occupied, the load will switch off after an adjustable time out period.

An adjustable internal light sensor provides additional energy saving in lighting applications. When an area is occupied, lighting is only switched on when the level of natural light falls below a preset level.

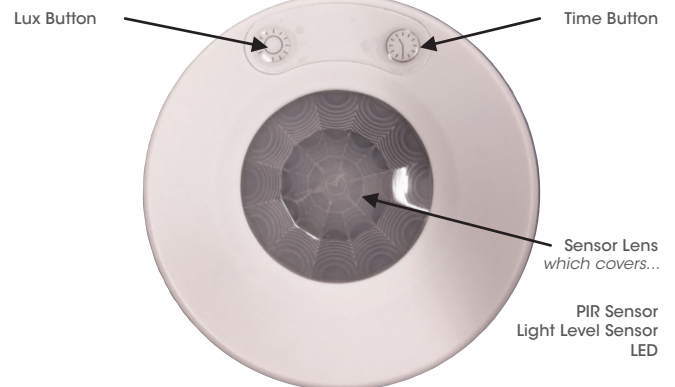
When the sensor is first powered up, the PIR sensor will always detect immediately regardless of whether the room is occupied.



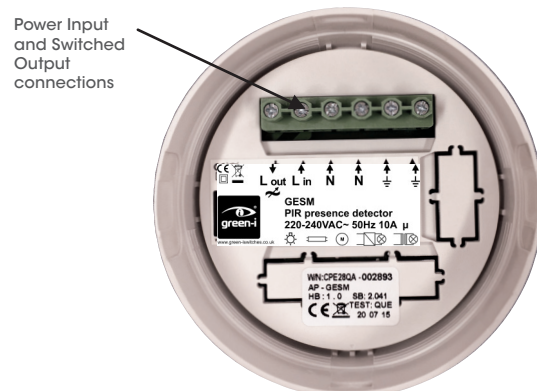
Features

- **PIR Sensor**
Detects movement within the sensor's detection range allowing load control in response to changes in occupancy.
- **Light Level Sensor**
Measures the overall light level in the detection area.
- **LED**
The red LED is used for feedback information during **Setup**. See **Setup** section on page 159.
- **Power Input and Switched Output Connector**
Used to connect mains power to the sensor and to connect a switched load.
- **Lux Button**
Use to set the Lux level for Lux switching. See **Setup** section on page 159.
- **Time Button**
Use to set the time delay after which the load switches off when an area is vacated. See **Setup** section on page 159.

Front features



Back features



GESM - LINE VOLTAGE SENSOR

Sensor functionality

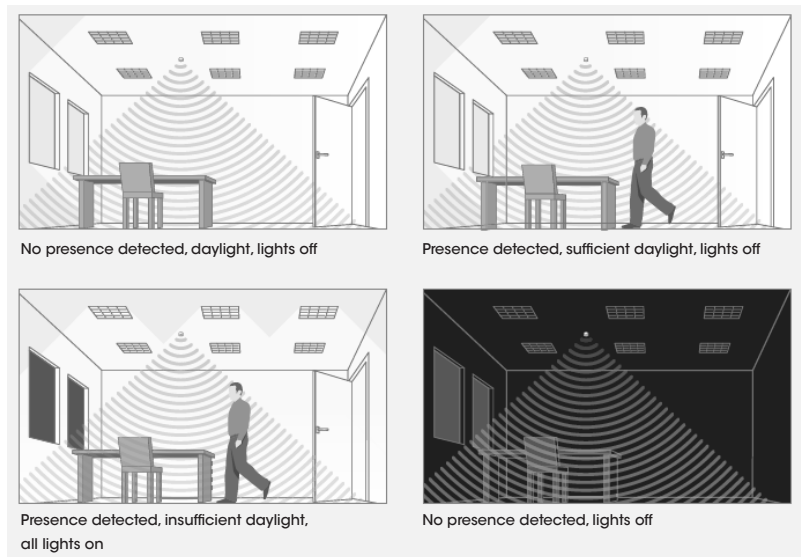
Movement detection

When movement is detected, the load will automatically turn on.

When the area is no longer occupied, the load will automatically switch off after an adjustable time period.

Lux level switching

The GESM has a built-in adjustable lux sensor which will keep the lighting switched off if there is sufficient natural light. The Lux level is set using the Lux Button on the front of the sensor.

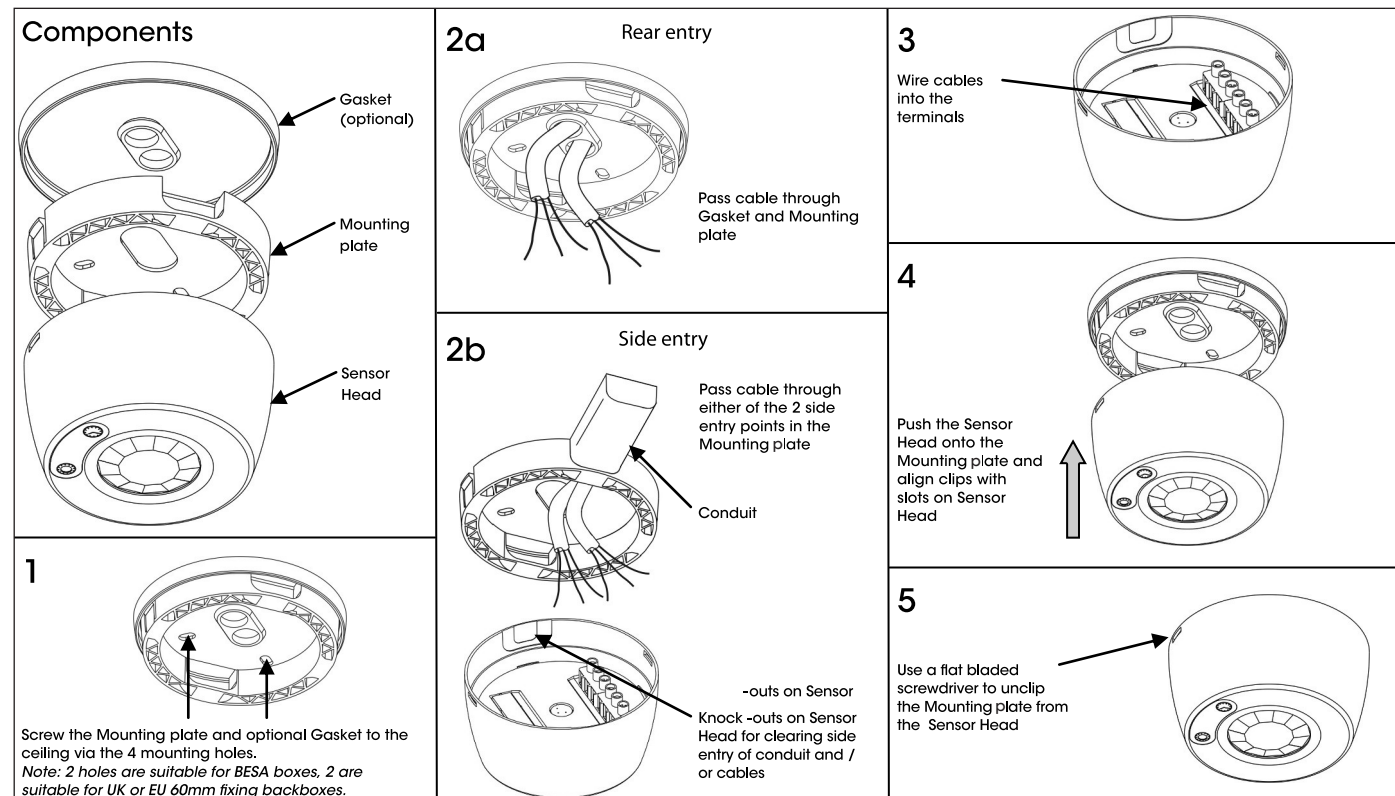


Installation

Choosing a suitable location

The GESM is designed to be ceiling mounted and must satisfy the following criteria:

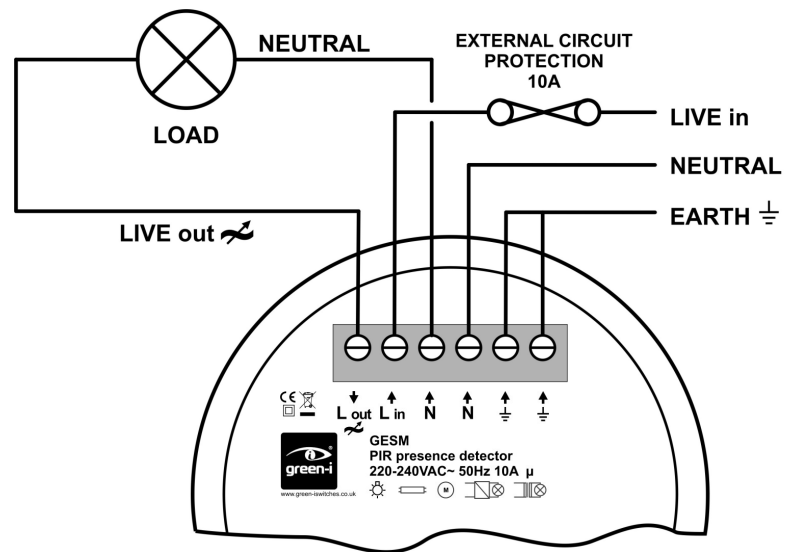
- The sensor should be sited so that the occupants of the room fall inside the detection pattern (see above) at a recommended height of 2.8m on the ceiling. Note that the lower the sensor is installed, the smaller the detection range will be subject to the parameters shown on the diagram.
- Avoid positioning the sensor where direct sunlight may enter the sensor element.
- Do not site the sensor within 1m of any lighting, forced air heating or ventilation.
- Do not fix the sensor to an unstable or vibrating surface.



GESM - LINE VOLTAGE SENSOR

Wiring diagram

Note: To switch from more than one position simply wire two or more sensors in parallel.



Power-up test procedure

- Power the sensor up – the load should come on immediately.
- Set the Lux level to maximum and the time to minimum.
- Vacate the room or remain very still and wait for the load to switch off (should take no more than 2 minutes).
- Check that the load switches on when movement is detected.
- To set the final Lux level, wait until the level of natural daylight is such that lighting is required. Starting with the Lux control at minimum, slowly increase the Lux until the lights come on. Note that when the Lux control is at maximum, the lights will always come on with occupancy.
- Set the time required.

Setup

To program a Time or Lux setting

- Press and release either the Time or Lux Button quickly (presses within 1 second of each other) to access 1 of 5 settings. 1 second after the switch has been released the LEDs will flash to signal which setting has been loaded.

To find out what the Lux or Time has been set to

- Press either switch for more than 3 seconds then release. The LED will flash to signify the setting.

To lock the programmed settings

- Use to stop accidental re-programming of the sensor.
- Press either switch for more than 10 seconds and do not release. It will toggle between lock and unlock. If the sensor was unlocked, whilst the button is pressed the LED will be lit, after 10 seconds it will extinguish. If the sensor is locked, the LED will flash once after 10 seconds.

Button presses	LED flashes	Time	Lux
1		10 seconds	1 (minimum)
2		5 minutes	3
3		10minutes	5
4		20 minutes (default)	7
5		30 minutes	9 (default) Always on / lux disabled

Fault finding

What if the load does not turn ON?

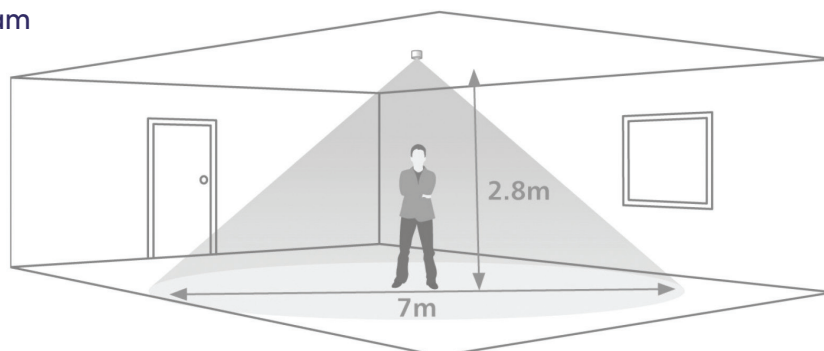
- Check to see if the live supply to the circuit is good. Strap across the L and LIVE OUT terminal to turn the load on.
- If the supply and wiring are good, check the Lux level setting. Increase the Lux level setting to allow the controller to turn on at higher ambient natural light level.
- If the detection range is smaller than expected, check the Detection Diagram on the opposite page. Rotating the sensor slightly may improve the range.

What if the load does not turn OFF?

- Ensure that the area is left unoccupied for longer than the Time Out Period.
- Ensure that the sensor is not adjacent to circulating air, heaters or lamps.

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Detection diagram



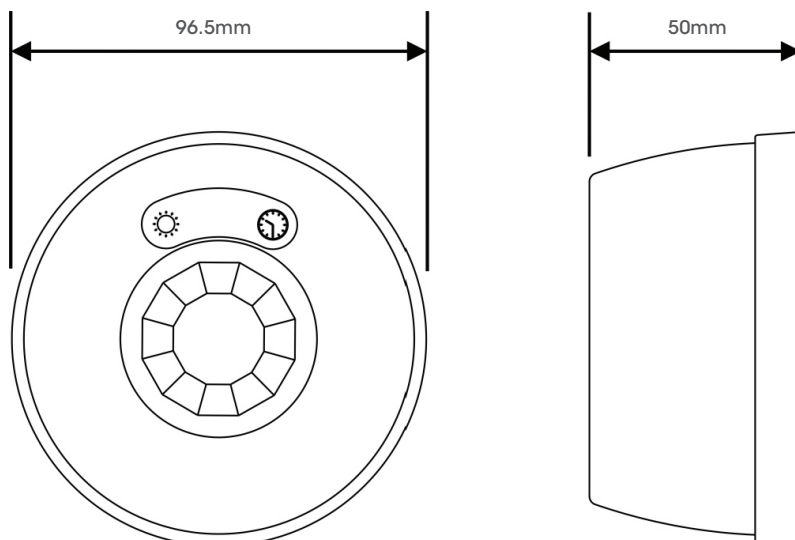
Area of high sensitivity

Area of lower sensitivity

Technical data

Dimensions	See diagrams opposite
Weight	0.15kg
Supply voltage	230VAC +/- 10%
Frequency	50Hz
Circuit protection	10A
Maximum load	10 Amp resistive and incandescent lighting 6 Amp fluorescent lighting and resistive 3 Amp compact fluorescent lighting 3 Amp low energy lighting 3 Amp low voltage lighting (switch primary of transformer) Fluorescent lighting (max 6 fittings recommended) For fluorescent lighting, total power factor correction capacitance must not exceed 40µF. 3 Amp fans and ventilation equipment Switch ON lighting loads via a contactor minimum load 100mA
Power consumption	On 572mW, Off 670mW
Terminal capacity	2.5mm ²
Temperature	-10°C to 35°C
Humidity	5 to 95% non-condensing
Material (casing)	Flame retardant ABS and PC/ABS
Type	Class 2
IP rating	40 without gasket. 54 with gasket
Compliance	EMC-2004/108/EC LVD-2006/95/EC

GESM (with gasket fitted)



IMPORTANT NOTICE!

This device should be installed by a qualified electrician in accordance with the latest edition of the IEE Wiring Regulations and any applicable Building Regulations.