ES701 Passive Infrared (PIR) IP65 Motion Sensor User Manual

General

The ES701 PIR IP 65 motion sensor is ideal for outdoor or high humidity applications, such as outdoor lights and bathrooms loads. The sensor has an extruding screw that can easily be installed directly onto a light fixture.

If, after reviewing this guide, you require additional information or assistance please contact Eco Heat Equipment at info@ecosensor.co.za, +27 (0)861 999 887, or www.ecosensor.co.za.

Technical Specifications

- Voltage: 220 – 240V/AC
- Frequency: 50/60Hz
- Load: Incandescent max: 450W
  Fluorescent max: 275W LED max: 150W *DIMMING FUNCTION NOT COMPATIBLE WITH LED*
- Detection Angle: 360 °
- Detection Range: 1.4 m- 8m radius (dependent on mounting height) Light level: 10 – 50 LUX and 24H
- Time setting: 10 seconds – 60 minutes
- Dimming Level: 0%, 10%, 20% and 30%, Dimming Function Off
- Installation height: 2.5 - 7m max
- Working temperature: -10°C to 35°C IP Rating: IP65
  Dimensions: Length: 129.6mm (149mm with connector) Width: 36.4mm
  Height: 28mm
  Connector inside diameter: 17.1mm Connector

Safety

Any incorrect use or installation procedure not recommended by the manufacturer may cause fire, electrical shock or injury to persons.

Box Contents

Your box should contain the following items:

- Sensor
- Silicone Washer
- M20 Nut
- 2 x spacers

WARNING:

Controlling a load in excess of the specified ratings will damage the unit and lights and could pose risk of fire and electric shock.

Do not install this unit to control a power socket.

Installation Instructions

WARNING: ALL WIRING MUST BE DONE IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES AND STANDARDS.

Note: motion sensors respond to rapid changes in temperature so care should be taken not to mount the device near a climate control source (i.e. heaters or air conditioners). Hot or cold draughts will seem like body motion to the sensor and will trigger the device. Recommended distance from climate control devices is 2m.

1. Turn power off at circuit breaker or fuse
2. Connect wires as per diagram
3. Sensor can be secured onto light fitting
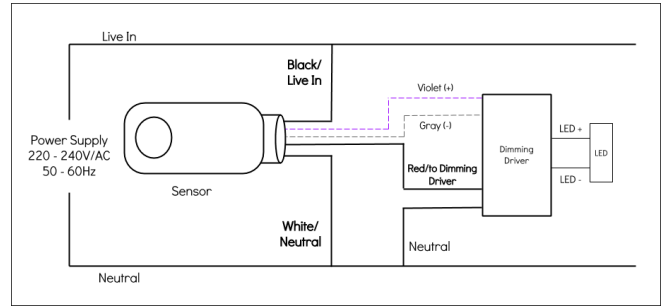4. Restore power at circuit breaker or fuse

Sensor calibration:

Note: Allow up to 1 minute for the motion sensor to recalibrate after it has been connected for the very first time. This is only necessary during installation or when the mains supply is disconnected.

### Installation wire diagram – NO DIMMING DRIVER
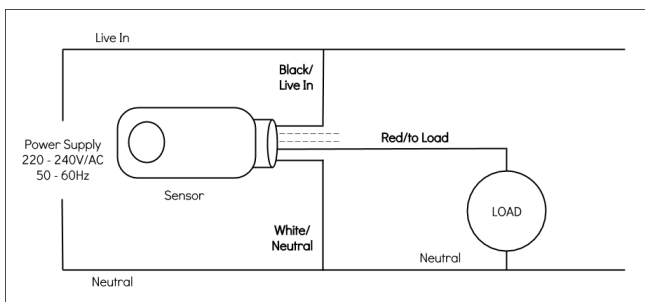
Installation wire diagram – DIMMING DRIVER

Operation and Field of View

The motion sensor detects motion within its coverage area and controls the associated lighting connected to the sensor. The passive infra red (PIR) sensor is sensitive to the heat emitted by the human body. In order to trigger the sensor the source of heat must move from one zone of detection to another. The device is most effective in sensing motion across its field of view and less effective sensing motion towards or away from its field of view**.
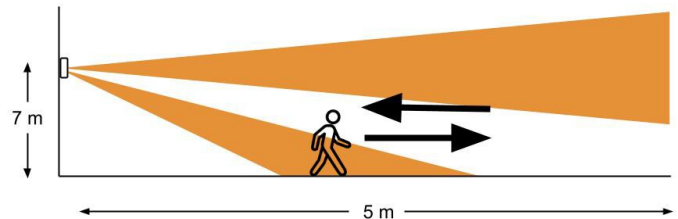
Sensor detection range from side: large motion* across detection zone
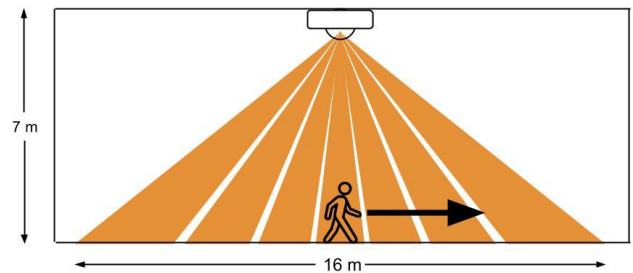
*Detection range for large motion at 2.8m height: 14m (diameter).
**Detection Range will decrease with approximately 35% with movement towards or away from the sensor

Sensor detection range: large motion* towards/away sensor

Motion Sensor Settings and Adjustments

The motion sensor is a Passive Infra Red (PIR) type electronic occupancy detector, which in turn switches the lights when connected to the motion sensor. There are five adjustments (three if the dimming function is not used) that can be made to influence the operation of the motion sensor:

1. RANGE/SENSITIVITY: motion detection range
2. STAND-BY TIME: time delay after motion until shut off/dimming
3. LUX/LIGHT: level of ambient light sensitivity
4. DIMMING LEVEL: level of dimming required*
5. DIMMING TIME: time delay after motion until shut off *
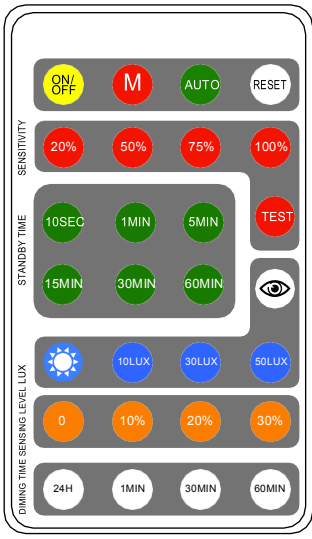
Only applicable if grey and violet wires are connected to dimming driver

The five adjustments settings are as follows:

Detection/Sensitivity range:	20%, 50%, 75%, 100%
Stand-by time setting range:	10 sec, 1 min, 5min, 15min, 30min, 60 min
Lux (light) sensitivity:	24H,10 LUX, 30LUX
Dimming level: *	0%, 10%, 20%, 30%
Dimming time: *	24H, 1 min, 30min, 60min, 24H

Only applicable if grey and violet wires are connected to dimming driver

Mandatory Remote Control

	ON/OFF	ON/OFF: Light on/off permanent (sensor is disabled)
	M	Memory: Save set parameters
	AUTO	Automatic ON/OFF
	RESET	Reset: Resets unit for settings setup and to default settings.
	TEST	Test mode: Light level will not influence the operation in this mode. Use to test and setup detection range.
	👁	Automatic reading and saving of the actual light level
	20% / 100%	Range/Sensitivity settings: (10% to 100%)
	10SEC / 60MIN	Stand –by time settings: (10 secs to 60 mins)	30LUX / 50LUX	Lux/Light settings (10 to 50 Lux and 24H). Recommendation: rooms without daylight 24H.
	10% / 30%	Dimming Level: (0% to 30%)	1MIN / 60MIN	Dimming Time: (1min to 60Min)

NOTE : Sensor's LED/LOAD will flash to confirm each setting applied

Steps to setting the motion sensor:

Step 1 – Ensure sensor is active
Press the "ON" button.

Step 2 – Set sensor in AUTO mode
Press the "AUTO" button.

Step 3 – Reset the sensor
Press the "RESET" button.
Resets the sensor for settings setup and to default settings:
Detection/Sensitivity range: 100%
Stand-by time setting range: 5min
Lux (light) sensitivity: ☼ (24H)
Dimming level: *   20%
Dimming time: *   60min
* Only applicable if grey and violet wires are connected to dimming driver

Step 4 – Set the Sensitivity/range
Press desired Sensitivity button to set the range.
100% = 7m radius at 2.8m height
50% = 3.5m radius at 2.8m height

Step 5 – Set the Stand-by time delay
Press desired Stand-by time button to set the delay.
Note: If sensor is connected **directly to a load** setting sets delay after movement until shut off.
Note: If sensor is connected to a **dimming driver** setting sets the delay after movement until dimming.

NOTE: All the time intervals are within approximately 10 seconds of the stated time out interval.

Step 6 – Set the LUX/light level
Press desired LUX button to set the light level.
Note: Dusk or dawn is approximately 50LUX

Step 7 – Set the Dimming level
Press desired Dimming Level button to set the dimming level.
Note: If sensor is connected **directly to a load** press the "0" button.

Step 8 – Set the Dimming time
Press desired Dimming Time button to set the shut off delay

Memory

Reset memory:

Hold the M button for 3 sec until LED/LOAD flashes then release.
Push the M button again if the LED/LOAD does not flash the memory has been reset.

Save parameters to memory:

Set preferred parameters, then hold the M button for 3 sec until LED/LOAD flashes, then push the M button again if the LED/LOAD does flash the memory is set.

Motion Sensor Adjustments
The motion sensor's settings is adjusted using the ES-REMD remote control.
Note: If sensor is connected **directly to load** press the "24H" button.
Note: If sensor is connected to a **dimming driver** setting sets the delay after movement until shut off.

NOTE: After pressing a settings button the load will switch off and back on after a few seconds if ambient LUX levels is below current LUX level setting on the sensor.

The sensor's red LED will flash 3 times to confirm each setting applied and stored.

OTHER CAUTIONS:
Disconnect power when working on electrical outlets or components.
Do not push on the surface of the lens.
Cleaning
Carefully wipe sensor with a soft damp cloth. Do not apply pressure to the lens.
Recycling
Please recycle all packaging material that came with the motion sensor.

Warranty
The sensor has a three (3) year warranty after the date of the original purchase. Please keep your original receipt, as this will be required for any claims under this warranty. The warranty is a strictly carry in policy. (The sensor/s has to be returned to Eco Heat offices for a claim to be processed).

The warranty does not cover:
- damage from misuse,
- neglect or abuse,
- products that have been modified in any way,
- shipping and handling cost associated with the product,
- damage resulting from accidents, lightning, fire, water, power surges, natural disasters and/or incorrect installation

For more information, view the Return/Refund Policy at www.ecosensor.co.za.

Trouble Shooting

Malfunction	Possible Cause	Remedy
The unit will not switch "on"	a. No mains power b. No movement is detected (in detection zone) c. Wrong LUX/LIGHT level setting d. Electrical circuitry faulty e. Electrical Installation not done correctly f. Unit may be faulty	a. Check mains power is on b. Move towards the unit (in detection zone) or increase the detection range settings c. Adjust setting on the LUX/LIGHT settings d. Refer to the 'Electrical Installation' section to ensure correct installation e. Have a certified electrician disconnect and test the unit f. Contact Eco Heat Equipment
Unit stays "on" permanently	g. Continuous movement in detection zone h. The sensor is not mounted correctly for reliable operation i. Wrong LUX/LIGHT level setting j. Time setting control is set too far k. Unit may be faulty l. Unit is mounted on a vibrating or moving structure.	g. Check detection range setting and reduce detection range sensitivity h. Check detection range setting and mounting procedure i. Adjust setting on the LUX/LIGHT settings j. Adjust the time setting control k. Contact Eco Heat Equipment i. Move unit to a fixed mounting structure, check mounting procedure

Due to minor improvements in design or otherwise, the product you purchase may differ from the one shown in this leaflet. For more information or advice on this or any other Eco Heat Equipment products, visit www.ecosensor.co.za or phone +27 (0)861 999 887.

Indemnity: The Author, and supplier, shall not be held liable for any loss, injury or damage, of whatsoever nature, whether consequential or not, either contractual sustained to, or caused by, or which may arise through the use of any comments, suggestions, circuitry, services or equipment offered for purchase. The User, indemnifies the author and supplier, and agrees not to hold him/her responsible for any damages, losses and/or liabilities (including legal costs on a scale as between attorney and user) arising from, or through the use of circuit diagrams, equipment and services, whether such circuit diagrams, equipment and services were used with the consent of the User or not. All risks attached to the use of circuit diagrams, equipment and the connection thereof to the User's equipment shall be deemed to have passed onto the User, once having purchased such equipment from the author or supplier.

ecosensor