

Product Guide

3-Wire Wall Mounted PIR Occupancy Switch

today, tomorrow and in the future

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Product Overview

The 3-wire wall or ceiling mounted passive infra-red occupancy switch (WAPIR) should be wall mounted at a location where a neutral connection is available. The WAPIR incorporates a passive infra-red quad sensor to detect movement of a warm body within the detection zone (diagram B or C) and a photocell to monitor the ambient light level.

Upon detecting movement, if the ambient light is dark enough, the WAPIR switch will turn the load on. The ambient threshold can be set by the user to between approx. 30 lux and 1000 lux and maximum (photocell inactive) at the PIR via the LUX adjuster (diagram A). If no more movement is detected within a pre-selected time, then the WAPIR switch will turn the load off. This time lag can be set via the TIME adjuster to 10, 20, 40 seconds, 1 min 15 secs, 2 min 30 sec, 5m, 10m, 20m or 40 mins (diagram A).

The WAPIR also incorporates a sensitivity adjuster. Turn fully clockwise for maximum range and sensitivity of the occupancy detection.

Several WAPIR units can be wired in parallel, using re-wired 2-way lighting wiring to allow multiple PIR detectors (diagram E).



Figure 1.

Loading Limits:

The WAPIR should only be connected to a 230V 50Hz AC supply.


The PIR switches can switch up to:


- 6 amps (1500W) of electronics or wire wound transformers
- 6 amps (1500W) of compact fluorescent loads
- 3 amps (750W) of electronic and wire wound transformer loads
- 2 amps (500W) of CFL, 2D Lamps, LED Drivers and LED lamps and fittings
- 1 amp (250W) of fans

Minimum Load

Minimum load 2W resistive, suitable for most energy saving lamps, LEDs and emergency fittings.

Installation Procedure

 All electrical installation and maintenance must be carried out by a competent person. If in doubt, consult a qualified electrician. Any new wiring must be carried out by qualified personnel in accordance with the current edition of the IET Wiring Regulations (BS7671).

 Ensure the electrical supply is isolated before making any connections or adjustments.

1. The switch should be placed facing the area where activity is expected, if wall mounted at between 1 and 1.8 m high (diagram C). If the photocell override facility is required, the switch must be sited in a position where daylight can give greater illumination than the artificial light
2. Connect the WAPIR as:
 - a. L – Live in
 - b. N – Neutral in
 - c. SL – Switched line out.
3. A few WAPIR's products can be wired in parallel to control the same load (see diagram E).
4. There are three adjustments on the underside of the switch: TIME, LUX and SENS (sensitivity) (Diagram A).
5. When the wiring has been completed and verified, switch on the supply and test operation.

When the PIR is powered up, it will switch on the load for 1 minute, the load will then switch off and the PIR will enter its Operating Mode. If a manual override-off switch is positioned before the PIR in the circuit (Diagrams D&E, note 1).

It will do this each time the wall switch is switched on. Alternatively, if the wall switch is placed after the PIR (Diagrams D&E, note 2) it will not enter the start-up mode each time.

LUX and Time Set-up

For convenience, ensure that the TIME is set to the minimum and the WAPIR is set to automatic mode when setting up the LUX level.

Afterwards set the TIME and SENS to values suitable for the application. The LUX is best set up when the local ambient light is close to the minimum desired light level. With the LUX set fully clockwise, wait for the WAPIR to switch OFF. Rotate the LUX adjuster slowly anticlockwise (- to +) whilst waving your hand approximately 1m in front of the WAPIR, until the load switches ON.

Adjustment – Typical Settings

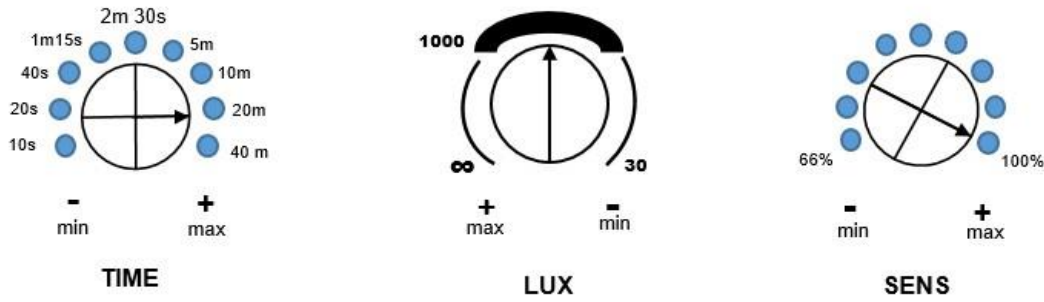
For indication see typical setting:

TIME: 10-20mins

LUX: Set fully clockwise (See above) SENS: 100%

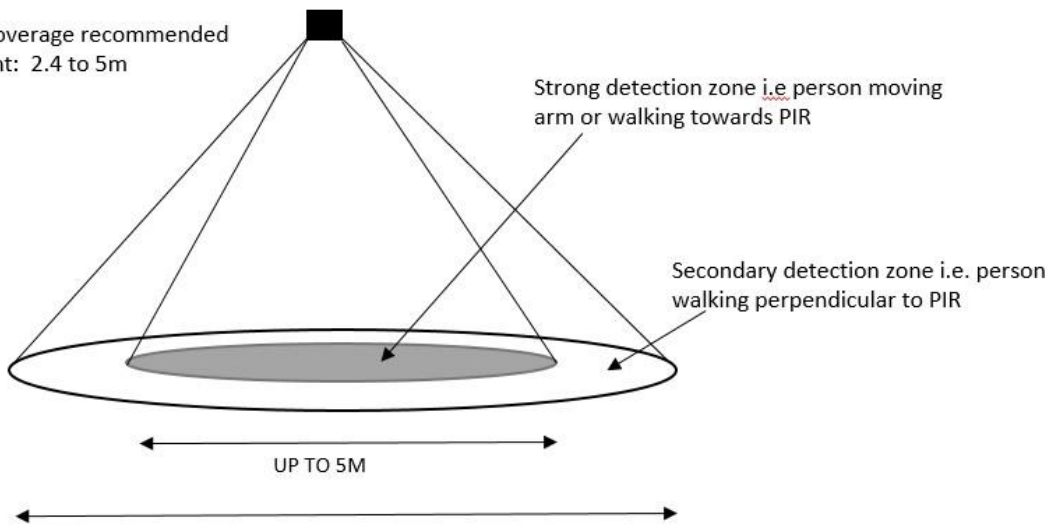
A. Adjustment Diagram

Typical Settings



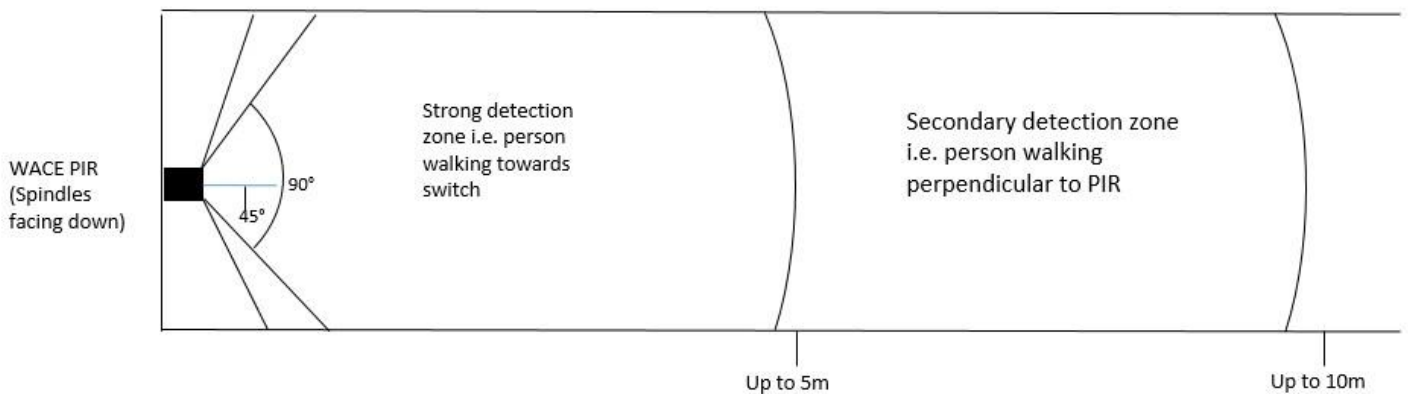
B. Detection Diagram – Ceiling Mounted

For optimum coverage recommended mounting height: 2.4 to 5m

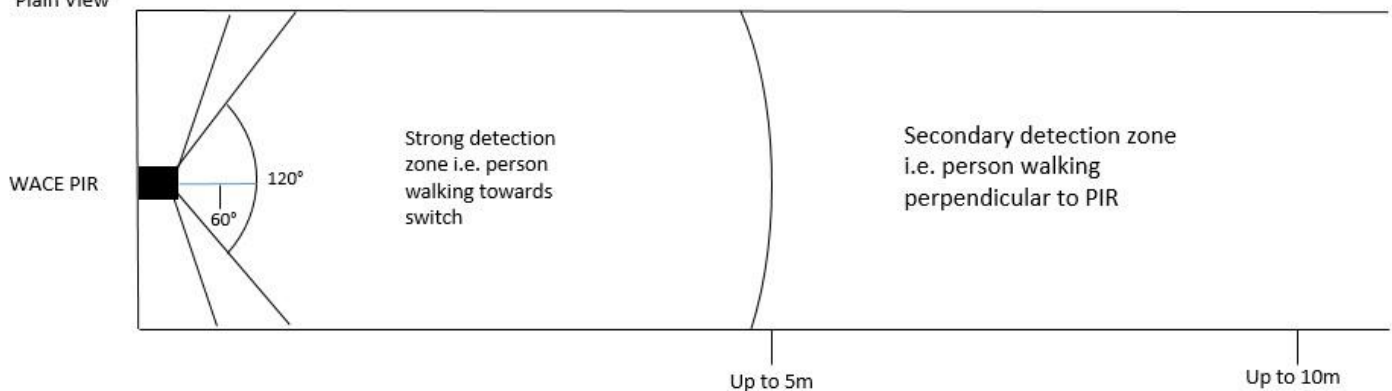


C. Detection Diagram, Wall Mounted

Side Elevation



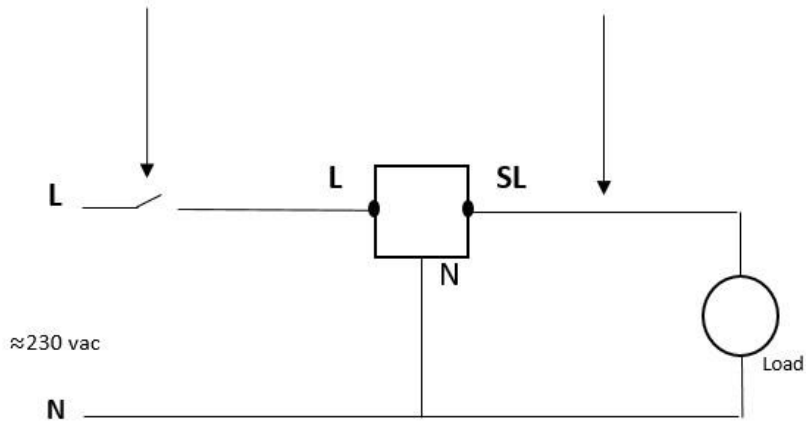
Plain View



D. Wiring Diagram, single PIR

Note 1: Optional manual wall switch for overriding off

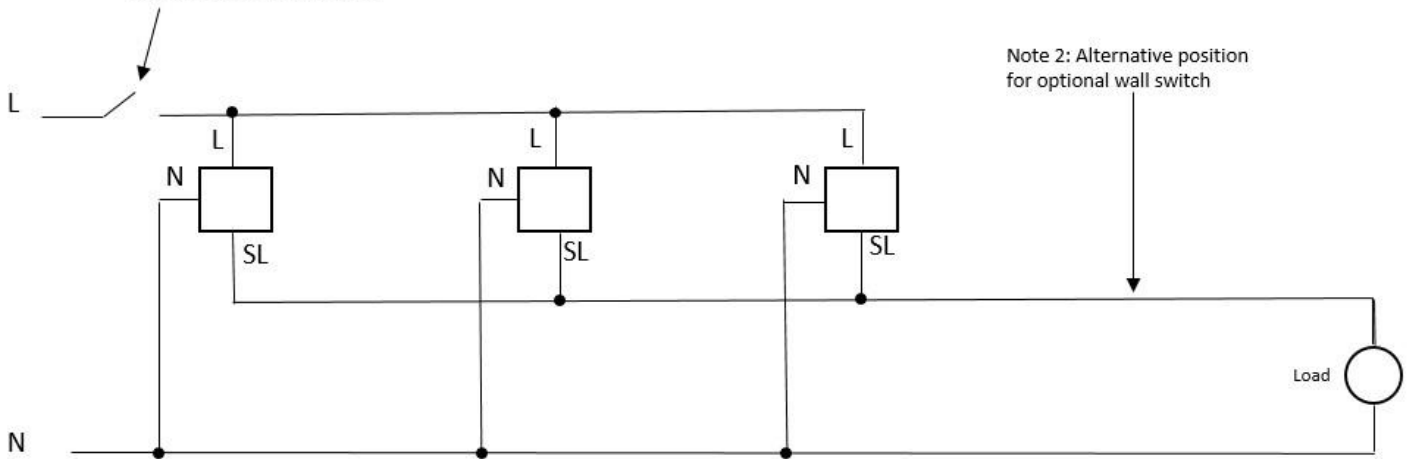
Note 2: Alternative position for optional wall switch



E. Wiring Diagram, multiple PIRs

Note 1: Optional manual wall switch for overriding off

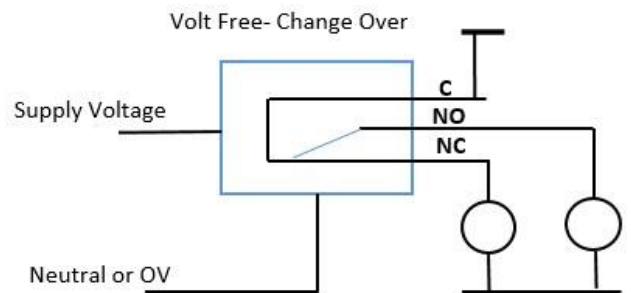
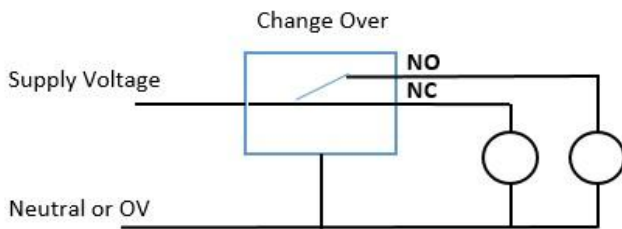
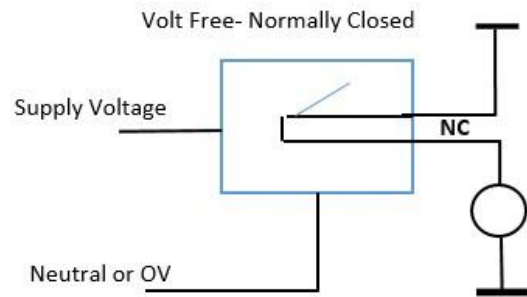
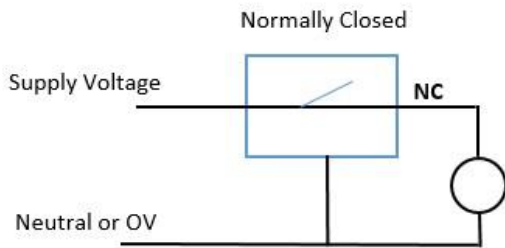
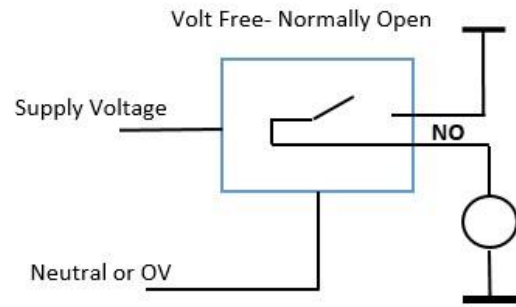
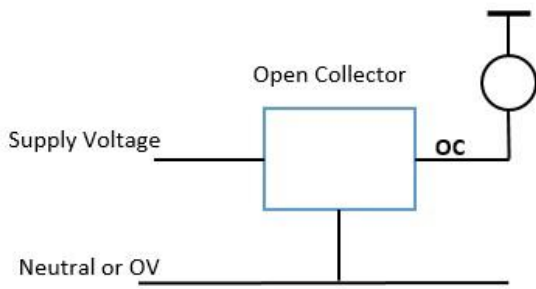
Note 2: Alternative position for optional wall switch



Volt Free Variant

VF Switches a secondary signal rather than the supply voltage.

Relay Logic Diagrams



Fault Finding:

The load will not switch on:

- ❖ The LUX adjuster is set too low and is inhibiting the switch.
- ❖ The moving body is not emitting more than the background (person wearing insulating clothing in a warm environment).
- ❖ Person is too far from the PIR switch (see detection diagram)
- ❖ Person is moving unusually slowly (perhaps when testing)

The load switches on when nobody is present:

- ❖ Heater causing infra-red variations in a small cold room.
 - Reduce the sensitivity adjuster or re-site the WAPIR.

TECHNICAL SPECIFICATION	
Power Supply	220V-240V AC 50Hz (in the line)
Output switch rating	16A, 250V (resistive)
Minimum load	2W resistive
Maximum lighting load	Incandescent: 6A (1500W)
	Fluorescent: 10A (2300W)
	Compact Fluorescent: 6A (1500W)
	Fans: 1A (250W)
Timeout	10 seconds to 40 mins
Detection Angle	120°
Detection range	High sensitivity: up to 5m Low sensitivity: up to 10m
Mounting hardware	22-32mm single-gang UK pattress box
Operating temperature	-30°C to +40 °C
Guarantee	2 years
Weight	180gm
Dimensions	86mm x 86mm x 22mm

Technical Support

For further help or information on this and the other products in the MS Electronics range

visit www.mselectronics.co.uk or call 0333 666 1176.

Alternatively, email techsupport@mselectronics.co.uk

Additional copies of this product guide can be downloaded from our website.

Product Warranty

MS Electronics guarantees all their products against manufacturing defects for 5 years from the purchase date. If your product is found to be faulty, MS Electronics will, at their discretion, repair or replace the product free of charge.

Note

Any modification or damage to the outer casing of the product, as well as any damage to the product due to abuse or incorrect wiring may invalidate the guarantee.



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