ms electronics
energy saving controls

WMPD3
WMPAD3
WMPAD3-L

Product Guide

Wall Mounted Presence/Absence Detectors

3-wire versions

WMPD3 Presence Detector
WMPAD3 Presence/Absence Detector
WMPAD3-L with LED indicator

today, tomorrow and in the future

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Issue 1.0

Product Overview

The Wall Mounted Presence/Absence Detector range provides flexible occupancy-based switching for lighting, heating, air conditioning and ventilation equipment. The built-in PIR (passive infra-red) sensor detects motion of body heat, providing convenient activation of the connected load whilst saving energy by switching it off automatically when the space becomes unoccupied (after an adjustable period). An adjustable ambient light threshold optionally inhibits initial activation when the area is adequately lit, reducing wasteful use of lighting..

- The **WMPD3 Presence Detector** offers fully-automatic operation, switching on the load upon detection of motion, and switching off when the area has been unoccupied for the set period.
- The **WMPAD3 Presence/Absence Detector** includes a touch-sensitive override button and offers the flexibility of two operating modes to suit either manual or automatic initial activation.
- The **WMPAD3-L** provides an illuminated button to aid location of the unit in the dark (when used in *Absence Mode*). The LED also acts to facilitate accurate setup of the light sensor function.

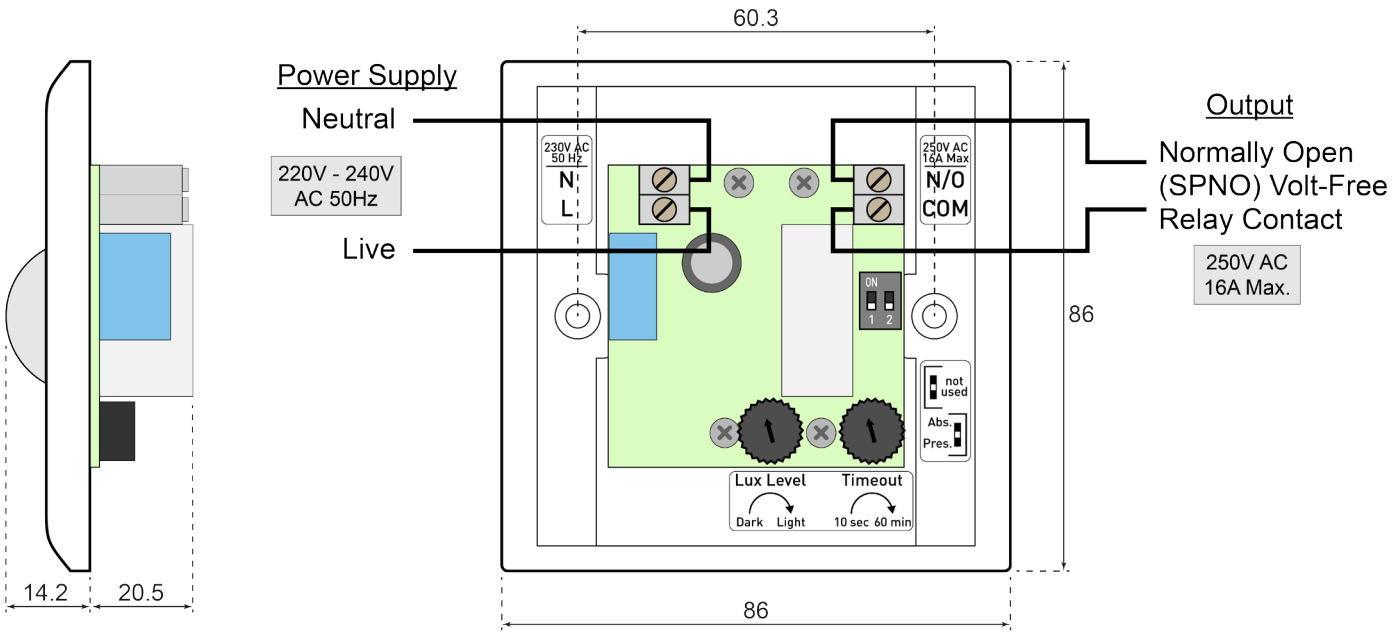
The units are simple to install and fit a standard single-gang UK pattress or back box (22mm min. depth). Ideal applications include small booths or rooms, workshops, entrance halls, staircases, toilets, store cupboards, hired sports courts and rooms plus many more.

Figure 1a WMPD3

Figure 1b WMPAD3

Figure 1c WMPAD3-L

Figure 2 Typical wiring example and dimensions (in millimetres)



Electrical Requirements

Before attempting to install the unit, ensure that the intended load and wiring arrangement comply with the following requirements. Figure 2 shows a typical wiring example.

- **3-wire (live/neutral + volt-free switch) connection:** The unit requires a permanent live/neutral connection, and as such is *not* suitable for replacing an existing light switch with no neutral conductor at the switch location. A volt-free relay output is provided, which can be used to switch a load on the same mains supply (by connecting across from **L** to **COM**, making **N/O** a switched 'Live Out'), or to provide a contact closure to a separate load or control signal. There is no minimum load requirement.

  Also available: **WMPD2** / **WMPAD2** / **WMPAD2-L** (2-wire versions) – Suitable for 'inline' connection with the load to be switched (no neutral required), such as to replace a standard light switch. A minimum load of **20W (per detector)** applies; a load capacitor is required for smaller loads.
- **Maximum load:** The maximum load rating is **16A (4000W)**, however for high inrush loads (such as most types of lighting) a lower limit applies: see *Technical Specification*.

Positioning

Figure 3 illustrates the typical detection pattern of the PIR sensor when the unit is wall-mounted. Ensure that the proposed mounting position will offer the required area of detection.

High Sensitivity Zone:
Detects e.g. arm movement.

Low Sensitivity Zone:
Detects e.g. whole body movement.

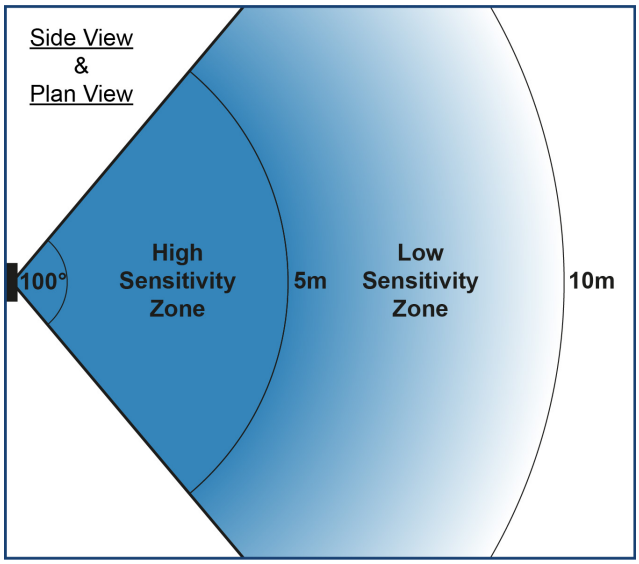


Figure 3 PIR sensor detection pattern

Tips

- The sensor is most sensitive to motion across its field of view, rather than directly towards or away from the sensor.
- Avoid mounting the unit close to a light or heat source (the one being switched, or otherwise) since this may interfere with the detection.
- Multiple units may be wired in parallel to extend the detection field – see *Using Multiple Detectors*.

Installation

⚠ 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. Select a suitable location for the unit (following the guidelines under *Positioning*) and prepare a single-gang pattress or back box as necessary.
2. Adjust the controls according to the operational requirements.
   WMPD3 only There there are no switches present on this model.
   - Rotate the **Timeout** and **Lux Level** thumbwheels to the desired settings. For non-lighting loads, ensure the latter is set correctly. See *Controls* below.
     WMPAD3-L only The button illumination LED may be used to assist setup of the **Lux Level** control: see *LED Indicator* below.
   - **WMPAD3(-L)** Using e.g. a small screwdriver, move **Switch 2** to select the desired operating mode according to the accompanying label: see *Controls* below.
3. Connect the wiring as shown in Figure 2 (or in any suitably appropriate form).
   - **Supply connections (L, N):** Use appropriate mains cable to power the unit. If the load is also powered via this wiring, ensure the current rating is adequate. Otherwise (i.e. if the output is independently powered), low-current cable may be used.
   - **Load connections (COM, N/O):** Use cable rated for the load current and voltage.
4. Fix the unit into position with the two screws and caps supplied.

Controls

- **Timeout** (10 seconds to 60 minutes): Sets the period of time over which no motion must be detected, after which the load is switched off.
- **Lux Level:** Sets the ambient light level threshold, below which the unit will permit activation upon detecting motion. For non-lighting loads, and in other cases where operation should be permitted at any light level, turn the control fully towards 'Light'.
- **Operating Mode WMPAD3(-L):** Select either *Presence Mode ('Pres.')* or *Absence Mode ('Abs.')*. See *Operation* for details.

Additional Guidelines

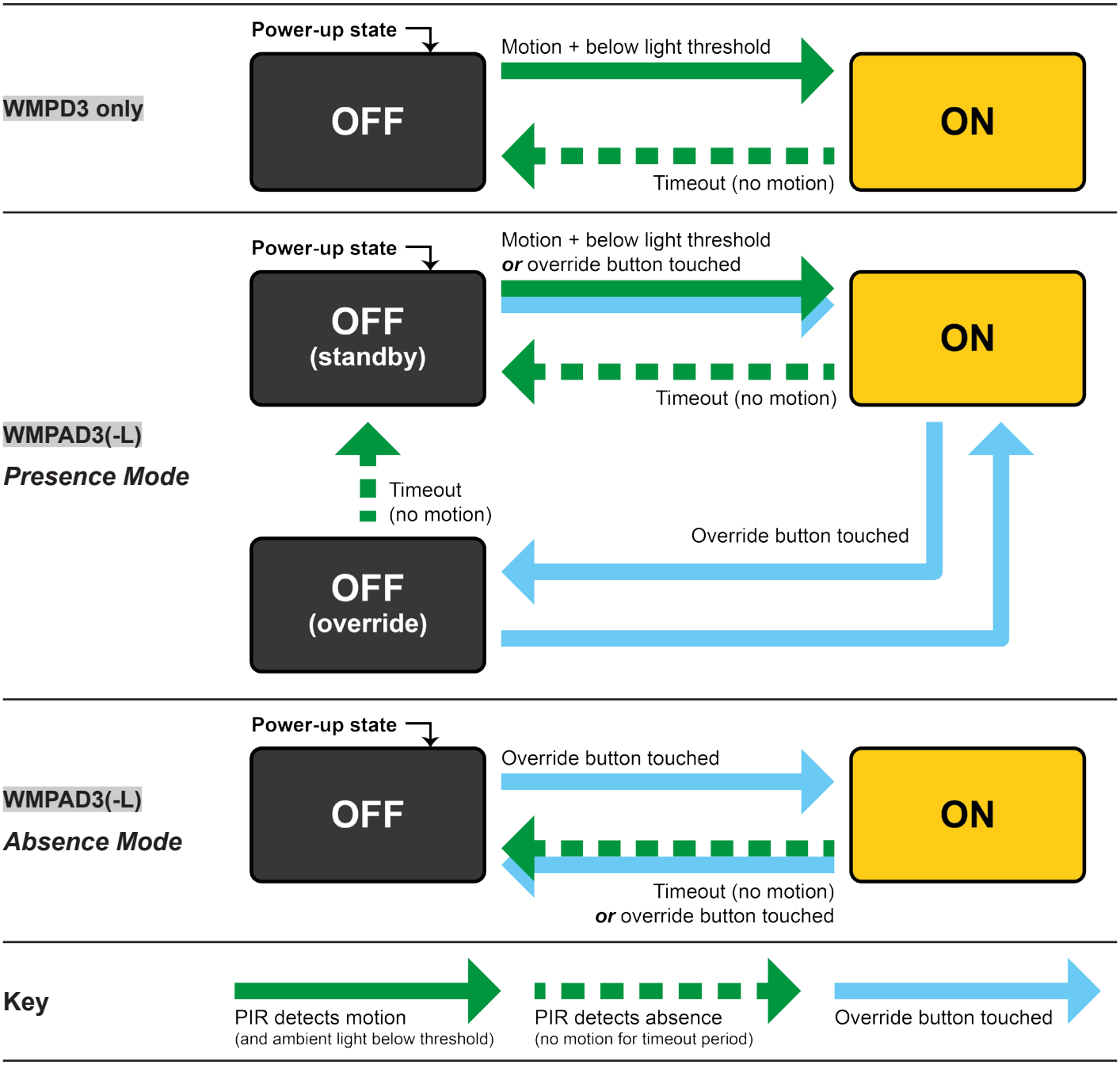
- **WMPAD3(-L)** **Switch 1** is not used on these models and should not be adjusted.
- The screw caps may be removed at a later date with the aid of an adhesive putty such as Blu-Tack.

LED Indicator WMPAD3-L only

The LED indicator lights when the load is off, *and the ambient light is below the threshold* set by the **Lux Level** thumbwheel. As well as aiding location of the unit in darkness (when used in *Absence Mode*), it can be used to check that the **Lux Level** setting is appropriate. **The electrical supply to the unit MUST be isolated before making adjustments.**

Operation

The diagrams below illustrate the sequence of operation, according to the model and operating mode of the unit.



Operation Notes

- After establishing the mains supply to the unit, the PIR sensor requires approx. 1 minute to stabilise before motion detection is possible.
- If the unit does not respond to motion during testing, remember that the ambient light level must be low enough (with respect to the **Lux Level** setting) to permit activation.
- The **Lux Level** setting only affects whether motion will switch the load *on*. Once on, any motion detected will prevent the timeout from expiring, regardless of the light level. **WMPAD3(-L)** In *Absence Mode*, the light sensor is not used since the load is switched on manually.

Using Multiple Detectors

If the detection pattern of the unit does not fully cover the desired area, multiple units may be connected in parallel to extend the detection coverage.

> ⚠ The following wiring example is intended only as a recommendation. Proper wiring practice must be observed with relevance to the particular installation.

Figure 4 illustrates a typical wiring arrangement using two WMP(A)D3 units; Figure 5 represents the same configuration as applied to a typical ceiling rose lighting circuit. This method can typically reuse pre-existing wiring from a 2-way switching installation, where 3-core cable has been used between the switch locations.

Each unit detects motion independently and operates its own timing cycle, but the load is shared. When either or both units detect motion (or are overridden to 'ON' using their respective touch-sensitive button), the load will switch on. Once *both* units have detected no motion for their respective timeouts, the load will switch off.

WMPAD3(-L) When using the override button to switch the load off, the load will remain powered if the other unit is still in the 'ON' state.

Figure 4 Typical wiring schematic for two units

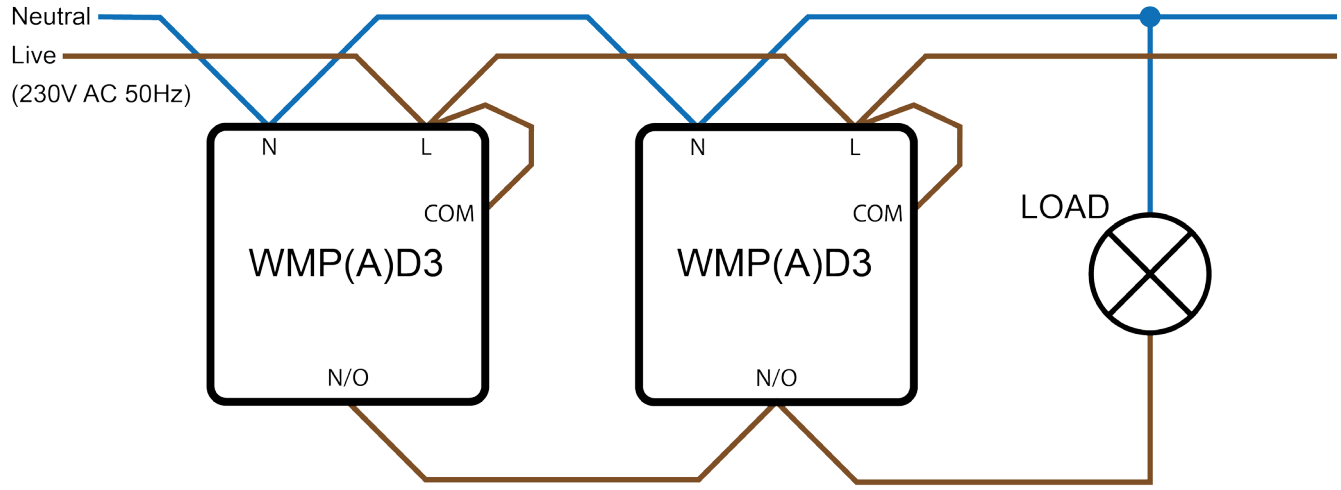
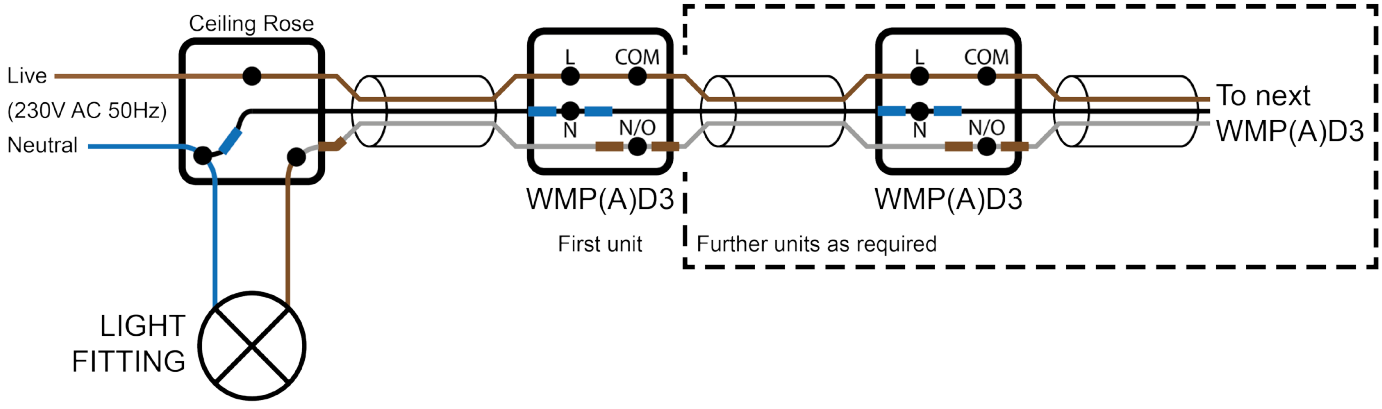


Figure 5 Typical ceiling rose plan



Fault Finding

⚠ Ensure the electrical supply to the unit is isolated before making any adjustments.

Load will not switch on

a) Unit is not powered

- Ensure the unit is correctly connected to an active mains supply.

b) Load is not connected correctly

- Ensure the load is connected appropriately. The relay output is volt-free so must be connected suitably to a supply in order to power a load.
- Check that the load works on its own by bypassing the detector.

c) Unit is not set up correctly

- **WMPAD3(-L)** Ensure the operating mode has been selected appropriately. In *Absence Mode*, the override button must be used to switch on the load.
- Wait 1 minute after connecting the mains supply for the PIR sensor to stabilise.
- Ensure the **Lux Level** setting is appropriate (including for non-lighting loads).
- Ensure the unit is sited away from strong light and heat sources.

Load does not switch off, or switches on unexpectedly

- Ensure the set period is allowed to elapse with no motion in the detection zone.
- Ensure the unit is sited away from strong light and heat sources, including the load.
- Ensure there are no other inadvertent sources of triggering. To test this, tape thick paper or card over the sensor lens (and wait for the set timeout period to elapse).

Technical Specification	
Power supply	220V - 240V AC 50Hz (live/neutral)
Output switch type	Volt-free SPST (normally open) relay
Output switch rating	16A, 250V AC (resistive)
Maximum lighting load	Incandescent: 12A (3000W) Fluorescent: 10A (2500W) Compact Fluorescent: 10A (2500W)
Timeout selection	10 seconds to 60 minutes
Detection angle	100°
Detection range	High sensitivity: up to 5m Low sensitivity: up to 10m
Mounting hardware	22mm (min.) single-gang UK pattress box
Operating temperature	-10°C to +40°C
Guarantee	5 Years
Weight	87g
Dimensions	86mm x 86mm x 35mm

Technical Support

For further help or information on this and 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 product including damage due to abuse or incorrect wiring may invalidate the guarantee.

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