

Batten Mount PIR occupancy switches

BMINTPIRSP

DANLERS Batten mount passive infra-red occupancy switch (PIR) with 'Intelligent' Photocell can be mounted onto the end of lighting battens via the 20mm knock out. The switch includes the connection 20mm thread and 1m of wire tails to connect to the lighting ballast.

The PIR incorporates a passive infra-red quad sensor to detect movement of a warm body within the detection zone and include a photocell to monitor the ambient light level.

On detecting movement, if the ambient light is dark enough, the PIR will switch the load on. The ambient threshold can be set by the user to between approximately 100 and 3000 lux (on the working plane) via the LUX adjuster.

BMINTPIRSP operates with "ACTIVE" Lux control (GB patent No: 2 502 847). They constantly sample the ambient LUX level and will, even if the area is occupied, switch off the controlled lamps (if the lux rises above the user set threshold and remains there for the overlux timeout period). (See Note 19).

BMINTPIRSP has up to 5m detection range when mounted at 5m height (see diagram B).

A 'real time' photocell status indicator: Green LED illuminated indicates sufficient ambient light - load turns off after threshold delay.

If no more movement is detected within a certain time, then the PIR will switch off the load. The time can be set via the internal TIME adjuster to between 10seconds and 40 minutes (diagram D).

Loading

The BMINTPIRSP should only be connected to a 230V 50Hz ac supply. It can switch the following type of loads:

- 10 amps (2500W) resistive loads and tungsten
- 6 amps (1500W) fluorescent (switch start) / mains halogen lamps (recommended with integral safety fuse)
- 3 amps (750W) Electronic or wire wound transformers.
- 2 amps (500W) CFL, 2D lamps, LED Drivers and LED lamps and fittings.

Normally OPEN contacts.

Calibration

Calibration is recommended to take place when ambient light levels are low (preferably at night or with daylight excluded as far as possible, from the calibration measurement). Set up of the switching level on the LUX switch should take place when the lux on the working plane is "as required by the end user" from natural daylight.

The calibration process removes the site specific addition of artificial light from any decision to switch the lights on/off."

Installation procedure

1. Please read these notes carefully before commencing work. In case of doubt please consult a qualified electrician. Make sure the power is isolated from the circuit.
 2. Remove the 20mm knockout from the end of the lighting batten.
 3. Making reference to diagram A: Remove the M20 nut thread from the PIR and insert it through the 20mm knockout hole with the thread facing inwards
 4. Feed the trailing wires through the thread and with the PIR facing downwards tighten the M20 nut.
 5. The trailing wires should be connected to the ballast as:
Brown - Live supply. Blue - Neutral supply. White - Switched Line to ballast.
 6. Once the wiring has been completed and verified, switch on the supply and test the operation.
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Test mode

7. To check the load and switch are working correctly the BMINTPIR5SP should be put into 'Test Mode'.
 - i. Press 'Calibrate and Test Mode' button for LESS than 2 seconds (see diagram E).
 - ii. The load should go OFF or stay OFF (LED turns RED).
 - iii. After 4 seconds the load comes ON (LED turns GREEN).
 - iv. After 4 more seconds the load goes OFF (LED turns OFF).
 - v. After 4 more seconds the control goes back into standard operation.

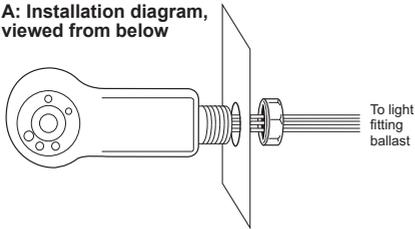
Calibration procedure

8. Rotate the LUX pot fully clockwise.
9. Rotate the TIME delay pot fully anticlockwise.
10. Press and hold the 'Calibrate and Test Mode' button for 4 seconds. The LED flashes RED. Calibration mode is initiated, where it measures the addition of LUX from the controlled artificial light source.
11. Ensure the area is not occupied when calibration is taking place. Make sure the product is sited such that the lux cell can see only the reflected light of the source it is controlling!
 - i.e. NOT any other switched / varying artificial light source.
12. If the product is moved from its original calibration site, it will need to be re-calibrated.
13. After approximately 16 minutes has elapsed, the LED will stop flashing RED and should go fixed GREEN OR fixed RED. (If not refer overleaf to Troubleshooting point E).
14. After Calibration - If the LED is fixed GREEN, the LUX measurements are "in range" of the product (1000 LUX maximum on the cell / 3000 Lux on the working plane assuming a 1/3 reflectance) and can be controlled without lamp cycling.
15. After Calibration - If the LED is fixed RED, the current LUX control point (pot setting) in addition to the artificial LUX (measured in calibration) is nearing the range limit / is OUT of range of the product, and MAY NOT / NOT be controlled and the lights MAY / WILL cycle (see 'Troubleshooting' for remedy).

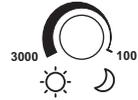
Set-up (assuming the unit has been calibrated)

16. When powered up, (after 1 minute stabilisation time) turn LUX pot fully clockwise and TIME pot fully anticlockwise (10s time out), wait for the PIR to time out and the load to turn off. (If not refer overleaf to Troubleshooting point E).
 17. When the LUX on the working plane is "as required" from NATURAL DAYLIGHT ONLY (assuming the LED is fixed green (pot fully clockwise), move the pot anti-clockwise until the LED goes off (this needs to be done in small increments by adjusting the pot and moving well out the way of the LUX cell).
NOTE: Ensure the LED is still off when full natural daylight is seen by the cell after the 10 seconds timeout, i.e. not shaded by the commissioning "body". (Also see Troubleshooting point C).
 18. The unit is now set up. i.e. The product will inhibit the load from switching on if the lux increases. What the calibration process has provided is : **"IT REMOVES THE SITE SPECIFIC ADDITION OF ARTIFICIAL LIGHT FROM ANY DECISION TO SWITCH THE LIGHTS ON/OFF."**
 19. Turn the PIR Time Lag / Overlux Threshold Timer (see diagram D) to the desired timeout.
NOTE: PIR Time Lag (time from the last movement detected before automatic switch off) will be the same value as the Over-lux timeout. Eg: If you set the PIR timeout to 20 minutes, then should the lux level go above the 'user set' off threshold and remain above, then 20 minutes later the controlled load will be turned off. If at any point the lux goes below the user set OFF threshold, the PIR is able to instantaneously detect occupancy and the "Off timer" is reloaded with the "user set timeout value"
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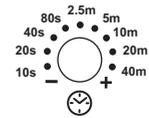
A: Installation diagram, viewed from below



C: Lux adjustment

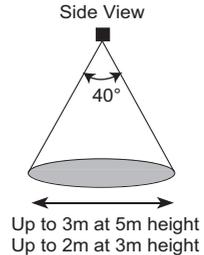


D: Time / overlux threshold timer adjustment

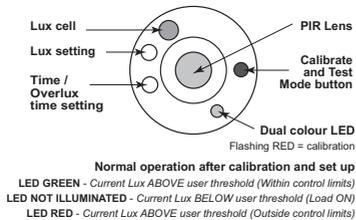


B: Detection range

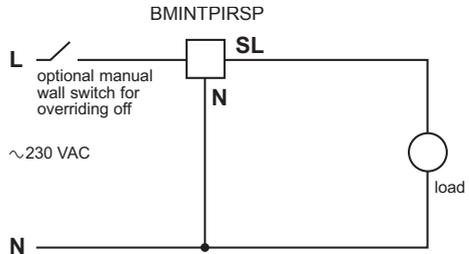
For optimum coverage recommended mounting height: 5m



E: PIR head - key components



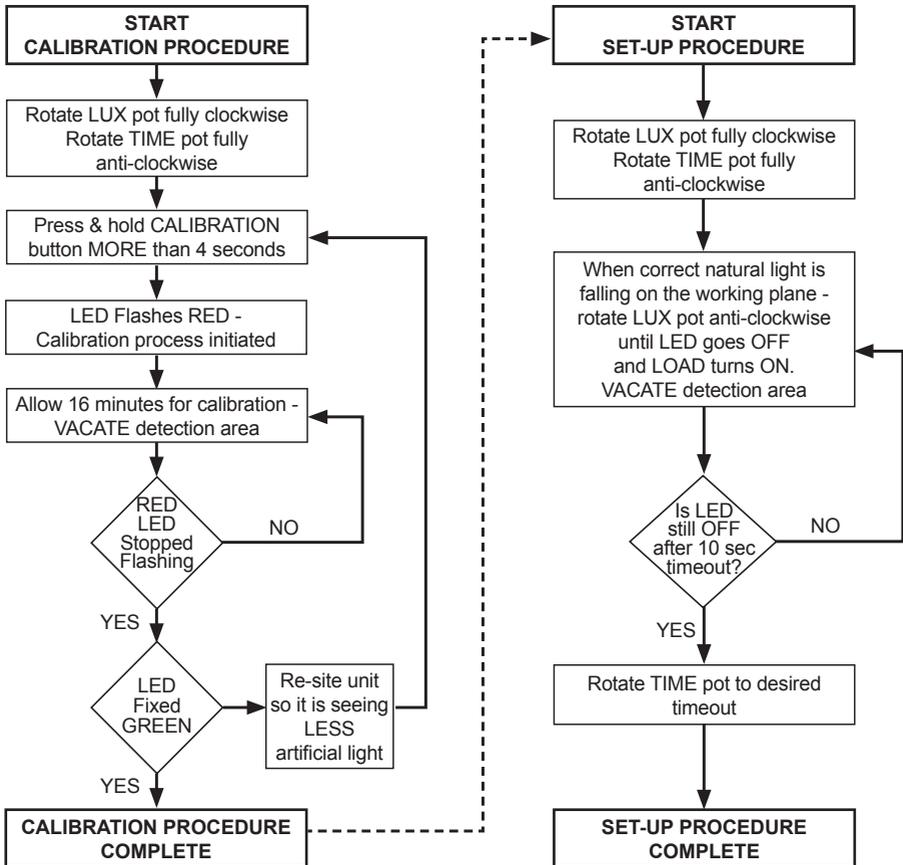
Wiring diagram



Trouble shooting

- A. The PIR does not detect**
 - Person is too far from the PIR switch, see detection diagram.
 - Person is moving unusually slowly (perhaps when testing).
- B. The PIR false triggers**
 - Detector is placed too close to heat or moving air sources.
- C. During set-up when moving the pot anticlockwise, if the LED goes RED before it goes out:**
 - The LUX switch needs to be repositioned so that it is NOT seeing as much artificial light and recalibrated.
- D. After calibration, if the LED is fixed RED:**
 - The LUX switch needs to be repositioned so that it is NOT seeing as much artificial light and recalibrated.
- E. If the LED fails to illuminate RED or GREEN (after calibration) and the load switches ON (PIR detection):**
 - The current LUX is lower than the minimum 100 LUX (at the working plane) and the switch cannot be inhibited off. Solution: Site the LUX switch in a position that sees more natural light.

Quick guide to Calibration and Set-up procedure



Precautions and Warranty

This product conforms to BS EN 60669-2-1.

Please ensure the most recent edition of the appropriate local wiring regulations are observed and suitable protection is provided e.g. over current protection, 1kV over voltage. Please ensure that this device is disconnected from the supply if an insulation test is made.

This product is covered by a warranty which extends to 5 years from the date of manufacture.

Products available from DANLERS

- PIR occupancy switches • Daylight linked dimmers • Manual high frequency dimmers
- Photocells • Radio remote controls • Time lag switches • Outdoor security switches
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Please call for more information or a free catalogue.

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