

### Variants

#### Presence detection variants:

Each of these High bay PIR occupancy switches with 1-10VDC dimming are also available with presence detection (momentary switch not required).

### Troubleshooting

#### The load will not switch on:

- The moving body is not emitting more IR 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).

### Precautions and Warranty

This product conforms to BS EN 60669-2-1. Product complies to Class 2 insulation.

Please ensure the most recent edition of the appropriate local wiring regulations are observed and suitable protection is provided e.g. 6 amps over current, 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
- Dimmers • Heating, ventilation and air-conditioning controls • Bespoke / O.E.M. products

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### High bay PIR occupancy switches with 1-10VDC dimming

**HBA PIR ND 10VDC**    **HBA PIR SP 10VDC**    **HBA PIR WD 10VDC**

DANLERS High bay passive infra-red occupancy (absence detection) switches with closed loop control can be used to control high frequency 10VDC dimmable ballasts. They each incorporate a passive infra-red quad sensor to detect movement of a warm body within their detection zone (diagram A) and a photocell to monitor the ambient light level.

Each of the controls can be mounted directly onto solid ceilings or onto a range of different mounting boxes.

The high bay controls are available in three types - each with a particular detection pattern which is optimised for particular applications.

**HBA PIR ND 10VDC:** Narrow Detection version is ideal for covering storage aisles.

**HBA PIR SP 10VDC:** Spot Detection version is ideal for smaller areas, such as the entrances to storage aisles.

**HBA PIR WD 10VDC:** Wide Detection version is ideal for large open areas, such as factories, sports halls and entrance halls.

### Functions

When entering a zone of detection a momentary wall switch must be pressed to send a signal to the PIR to switch the lights ON at maximum and start the closed loop control to maintain the preset lux level value (LUX) between 30 and 1000 lux (default value 1000 lux). See diagram C.

**NO BACKGROUND ILLUMINANCE RUN ON TIME SET:** If no further movement is detected the lights will switch OFF after the set PIR hold timer (TIME) has expired. This time lag can be set via the TIME adjuster to 10 seconds, 20s, 40s, 80s, 2m30s, 5m, 10m, 20m or 40 minutes (default value 10 seconds). See diagram B. Alternatively, the momentary switch can be pressed for more than 2 seconds to switch the lights OFF.

**BACKGROUND ILLUMINANCE RUN ON TIME SET:** If no further movement is detected the lights will FADE to minimum after the set PIR hold timer (TIME) has expired OR if the momentary wall switch is pressed for more than 2 seconds. The lights will then stay at minimum until the background hold timer (RUN ON) has expired. The RUN ON time can be set via the RUN ON adjuster to 0, 1, 2, 5, 10, 15, 20, 30 minutes or infinite (default value is 0). See diagram C.

If the momentary wall switch is pressed for less than 2 seconds while the background hold timer is counting down, the lights will switch ON at maximum and start the closed loop control to maintain the set lux level value.

### Loading

They can dim up to 20 x 1-10V dimmable ballasts, assuming each ballast has a constant current output of 1mA.

These PIR switches can also switch up to:

6 amps (1500W) of dimmable fluorescent lamps.

2 amps (500W) of CFL, LED Drivers and LED lamps and fittings.

Minimum load 2W.

## Installation procedure

- Please read these notes carefully before commencing work.  
In case of doubt please consult a qualified electrician.
- POSITIONING:** These high bay controls should be installed to achieve correct coverage of the area, see diagram A for the appropriate detection pattern. Avoid locating this product where it is exposed to drafty conditions (exposed lobbies, open ceiling voids or near fans) or near heat sources.
- Make sure the power is isolated from the circuit.  
The PIR should be connected as shown in diagram D:  
 SL Switched Line out  
 L Live in  
 N Neutral in  
 DA - - control line (Polarity dependant)  
 DA + + control line (Polarity dependant)  
 SW1 Switch input
- Knockout or drill the appropriate holes on the mounting plate for attaching the plate to the ceiling or back box (if applicable). Feed cables through the appropriate (side or rear) entry hole (see diagram E). Screw the back mounting plate to the ceiling or back box via the mounting holes. Wire the cables into the sensor head block terminal. Push the sensor head onto the mounting plate and align the side clips with the slots on the sensor heads.

## Start-up mode

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.

## Time / Run-on / lux set up

The LUX adjuster spindle on the side of the PIR is used to regulate the automatic daylight linked dimming function lux level (see diagram C opposite). This should be adjusted in situ by rotating the LUX adjuster slowly anticlockwise (+ to -) so that the desired level of brightness is achieved under the luminarie(s) being controlled.

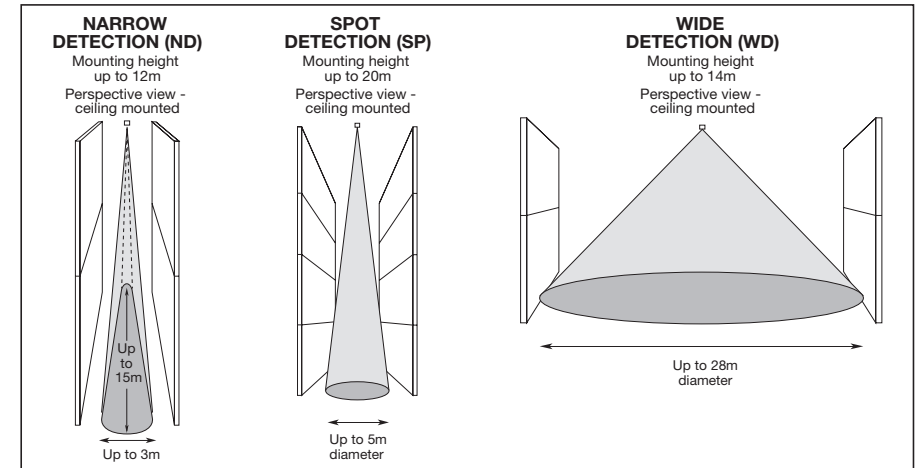
Once the correct level is achieved and there has been no further adjustment to the LUX spindle, the control will go through a 30 second delay before the automatic closed loop control will start.

These controls incorporate a fixed 90 second fade rate from maximum to the set back level.

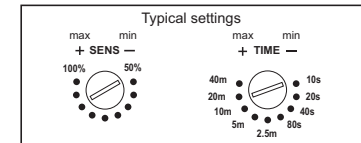
## Sensitivity

These controls incorporate a sensitivity adjuster, labelled 'SENS', to reduce the range of detection from 100% to 50% in 9 steps (see diagram B opposite).

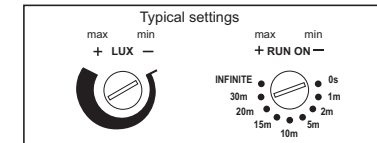
## A: Detection diagrams



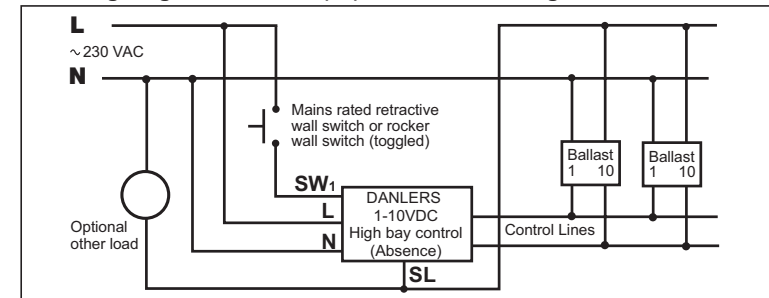
## B: Adjusting SENSITIVITY & TIME



## C: Adjusting LUX & RUN-ON



## D: Wiring diagram, HBA PIR (xx) 10VDC controlling several 10VDC dimmable ballasts



## E: Mounting plate fixing

