

## Variants

DANLERS also design and manufacture OTHER Ceiling Flush Mounted PIR Occupancy Switch variants some of which are listed below.

CEFL PIR For switching mains output  
CEFL PIR 3M 3 Metre (or other) length flex

Please contact us for full details or more information.

### 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 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).

### The load switches on when nobody is present:

- Heater causing infra-red variations in a small cold room.  
Re-site the PIR.
- Please contact DANLERS for further technical support.

## Precautions and Warranty

This product conforms to BS EN 60669-2-1 and BS EN 55015.

Please ensure the most recent edition of the appropriate local wiring regulations are observed and suitable protection is provided e.g. a 10 amp circuit breaker and voltage surge protection. 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

Please call for more information or a free catalogue, or visit our website.

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# DANLERS

## Installation notes

### Ceiling flush PIR occupancy switches - low voltage

**CEFLPIR12VAC, CEFLPIR12VDC, CEFLPIR24VAC,  
CEFLPIR24VDC, CEFLPIR12VACVF, CEFLPIR12VDCVF  
CEFLPIR24VACVF, CEFLPIR24VDCVF**

DANLERS ceiling flush passive infra-red occupancy switches (PIR) can be flush mounted into suspended and plasterboard ceilings (diagram A). They include a 2 metre connecting flex to make installation quicker and easier.

These PIR switches incorporate a passive infra-red quad sensor to detect movement of a warm body within their detection zone (diagram B) and a photocell to monitor the ambient light level.

Upon detecting movement, if the ambient light is dark enough, the PIR switch will turn the load on. The ambient threshold can be set by the user to between approximately 30 lux and 1000 lux and maximum (photocell inactive) at the PIR via the LUX adjuster (diagram D).

If no more movement is detected within a pre-selected time, then the PIR switch will turn the load off. This time lag can be set via the TIME adjuster to 10 seconds, 20 seconds, 40 seconds, 80 seconds, 2 minutes 30 seconds, 5 minutes, 10 minutes, 20 minutes or 40 minutes (diagram D).

### Variants

The operating voltage range of the switch is as follows (+/- 0.5V):

<b>CEFLPIR12VAC</b>	12 volt a.c
<b>CEFLPIR12VDC</b>	12 volt d.c.
<b>CEFLPIR24VAC</b>	24 volt a.c
<b>CEFLPIR24VDC</b>	24 volt d.c.

Volt free variants switch a secondary signal, rather than the supply voltage:

<b>CEFLPIR12VACVF</b>	12 volt a.c with volt free contacts
<b>CEFLPIR12VDCVF</b>	12 volt d.c with volt free contacts
<b>CEFLPIR24VACVF</b>	24 volt a.c with volt free contacts
<b>CEFLPIR24VDCVF</b>	24 volt d.c with volt free contacts

These PIR switches can switch up to: 6 amps of resistive loads. 6 amps of fluorescent loads. 3 amps of electronic and wire wound transformer loads. 2 amps of CFL, 2D lamps, LED Drivers and LED lamps and fittings. 1 amp of fans. Minimum load 2W resistive, suitable for most energy saving lamps, LEDs and emergency fittings.

**IMPORTANT:** CEFLPIR12VACVF, CEFLPIR12VDCVF, CEFLPIR24VACVF and CEFLPIR24VDCVF comply to Class 2 insulation. The voltage across the VF contacts should not exceed 50VAC /120VDC and must be on the same phase as the supply to the product.

## Installation procedure

- Please read these notes carefully before commencing work.  
In case of doubt please consult a qualified electrician.
- POSITIONING:** The PIR occupancy switch (PIR) should be installed to achieve correct coverage of the area, see diagram B. If the photocell override facility is required, the switch must be located above an area where daylight can give greater illumination than the artificial light. Avoid locating this product where it is exposed to drafty conditions (exposed lobbies, open ceiling voids or near fans) or near heat sources. To cover large areas PIRs should be spaced in a 5 metre grid formation.
- The greatest energy savings will be achieved if each PIR controls an independent set of lamps. They can be wired in parallel but this should ideally be limited to three.
- Make sure the power is isolated from the circuit.  
The PIR should be connected as shown in diagrams C or D:

- A 3 core / 4 core flex is supplied, coded as:

	Normal - 3 core cable		Volt Free - 4 core cable	
	DC	AC	DC	AC
Brown	+V DC Supply Voltage	AC Supply Voltage	+V DC Supply Voltage	AC Supply Voltage
Blue	0V DC Supply Voltage	AC Supply Voltage	0V DC Supply Voltage	AC Supply Voltage
Black	SWITCH OUTPUT	SWITCH OUTPUT	VOLT FREE 1	VOLT FREE 1
White	N/A	N/A	VOLT FREE 2	VOLT FREE 2

Terminate the mains cable with the supplied terminal block (terminal blocks must comply with EN 60998-1 or EN 60998-2-1 and be suitable for 0.75-1.5mm<sup>2</sup> conductors). In order to comply with wiring regulations, the terminal block must be enclosed in a suitable wiring box (This should comply with EN 60670-1 or EN 60670-22).

## Start-up mode

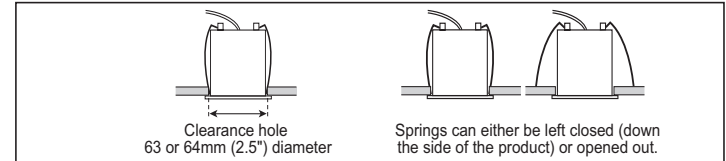
When the PIR is powered up, the PIR will switch on the lighting load for 1 minute then switch it off. After 2 seconds it will switch on again if it detects movement. With Time set to minimum the load will stay on for 10 seconds so the detection range can be easily assessed. If a manual override-off switch is positioned before the PIR in the circuit it will do this each time the wall switch is switched on. Alternatively, if the wall switch is placed after the PIR it will not enter the start-up mode each time.

## Time and Lux set-up

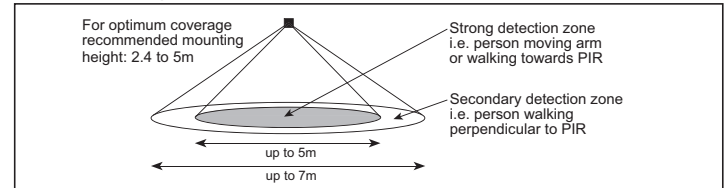
For convenience, ensure that the TIME is set to the minimum when setting up the LUX level. Afterwards set the TIME to a value suitable for the application, making reference to diagram E.

The LUX is best set up when the local ambient light is at approximately the minimum desired working light level, a lux meter placed on the surface under the PIR may help. With the LUX set fully clockwise wait for the PIR to switch off. Rotate the LUX adjuster slowly anticlockwise (- to +), whilst waving your hand approximately 1m below the PIR, until the load switches on.

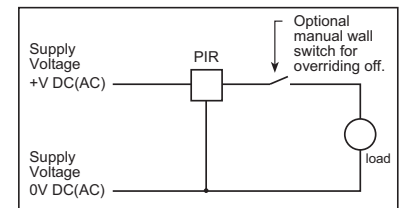
## A: Mounting diagram



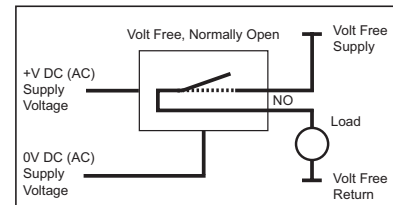
## B: Detection diagram



## C: Wiring diagram, single PIR



## D: Wiring diagram, single PIR (volt free supply)



## E: Adjusting time and lux

