MicroDim Microwave Dimmable Occupancy Detector Instructions

The **MicroDim** is a Movement Controlled Dimmable Detection System, utilising Microwave technology, to provide rapid response detection, with high sensitivity, where PIR technology would be restricted. It is designed to operate with 0v to 10v Analogue Regulating LED Drivers or Fluorescent Ballasts, providing full output during occupancy and then dimming to minimum output, when the set time-out period is reached after last detected movement. It is available in its standard form of **MicroDim** for control of individual luminaires or as **MicroDim-Multi** for control of a zone of multiples of luminaires.
The **MicroDim** also incorporates the facility to set light levels for daylight control and reach/sensitivity in increments from 2m to 10m radii.
The **MicroDim** provides continuous background health and safety comfort light, during periods of non-occupancy.
* Factory set to approximately 10% output to provide maximum energy savings.
* Variable control setting to enable site adjustment up to 60% stand-by/hibernation, if higher output levels are required.
MicroDim will detect the slightest movement within its detection zone, even when concealed within luminaires.
The Microwave System functions by emitting high frequency electro-magnetic waves (5.8Ghz) and receiving the return echo, producing <10Mw that is 100th of the transmission power of a mobile phone.
Applications for the **MicroDim** cover areas such as corridors, stairwells, offices, store rooms, car parks, etc; however due to the sensitivity of the detection system it should not be used in areas where there is equipment under continual operation such as fans or moving equipment as this could cause nuisance switching.
MicroDim "IM" is primarily designed for location into luminaires and can be concealed behind the diffuser or the louvre of the fitting.
It can be retro-fitted into existing luminaires or fitted at the time of manufacture and will function with fluorescent luminaires.
MicroDim-Multi "SM" is designed for the control of zones of lighting, to operate multiples of luminaires, on the same principles as noted above, for both ceiling or wall mounting.
Mains supply is required to power the Control Unit and it can operate multiples of luminaires by linking the 0v to 10v inputs of the related Dimmable LED Drivers or Fluorescent Ballasts.

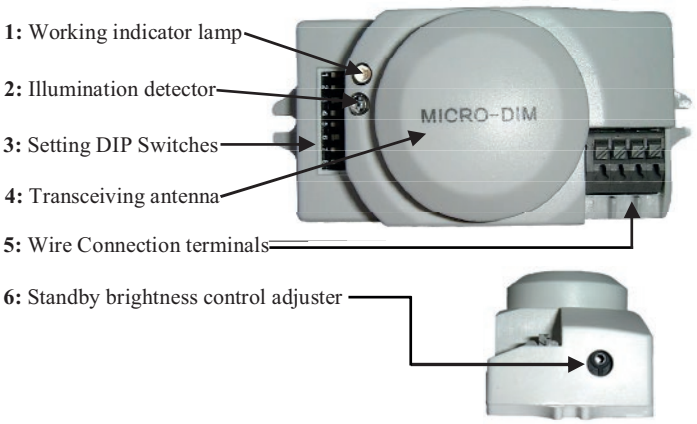
Dip Switch settings

Time set: 12sec to 30mins
Detection distance: diameter 2—10m adjustable
Light control: 150 LUX ~ 2000 LUX adjustable
Detection movement speed range: 0.6 ~ 1.5m/s
Standby brightness control range: 10 ~ 60%
Detection angle: 360°

Technical specifications

Installation height: 0.5-3.5m
Power supply: 220V/AC ~ 240V/AC
Frequency: 50/60HZ
Working temperature: -20° to +60°
Standby power loss: ≤ 95%RH
HF system: 5.8Ghz CW radar, ISM band transmitted power ≤ 2.5mW

Views showing Component parts



End view

Ref number	Component part name	Function
1	Working indicator lamp (LED)	The LED is illuminated when the unit is detecting movement and extinguished when no movement is detected.
2	Daylight detector	Will illuminate depending on the user settings.
3	DIP Switches	To adjust detection settings.
4	Transceiving antenna	Sensor/detector and should be mounted in excess of 5cm from light tubes, power cables and other items likely to cause interference.
5	Wire connection terminal	"**L**" is for the **LIVE** wire. "**N**" is for the **NEUTRAL** wire. "**+**" Analogue Dimmable LED Driver or Fluorescent Ballast connection "**+**" connection. "**–**" Analogue Dimmable LED Driver or Fluorescent Ballast connection "**–**" connection.
6	Control adjuster	Standby brightness control adjuster.

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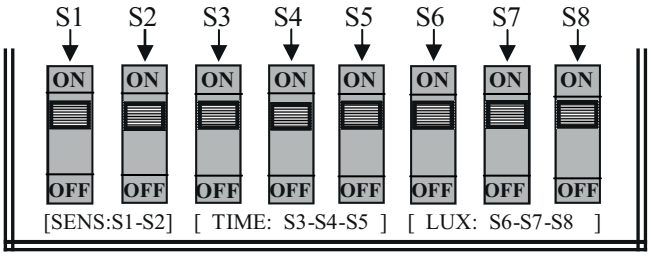
Parameter Settings

The DIP switches S1—S2 sets the detection range.
The DIP switches S3—S4—S5 sets the delay times.
The DIP switches S6—S7—S8 set the light control.

DIP Switch position detail

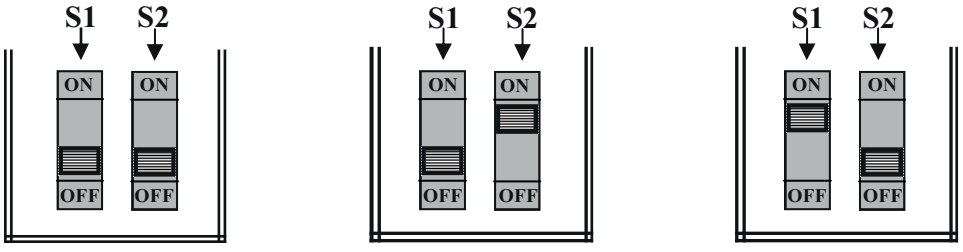


Reach Settings (Sensitivity)

Reach is the term used to describe the radii of the more or less circular detection zone produced on the ground after mounting the sensor light at a height of 2.5m,
set the DIP switch to the ON position "1" set the DIP switch to the "0",
Switch location and detection range corresponding to the table below.

DIP Switch position details

S1	S2	Detection range
0	**0**	2 metres
0	**1**	5 metres
1	**0**	10 metres



Note: **The above detection distances are taken in the case of a person who is between 1.6m to 1.7m tall with an average stature and moving at a speed of 1 to 1.5 metres a second.**
This is given as a guide and subject to variation depending on the speed and size of the object.

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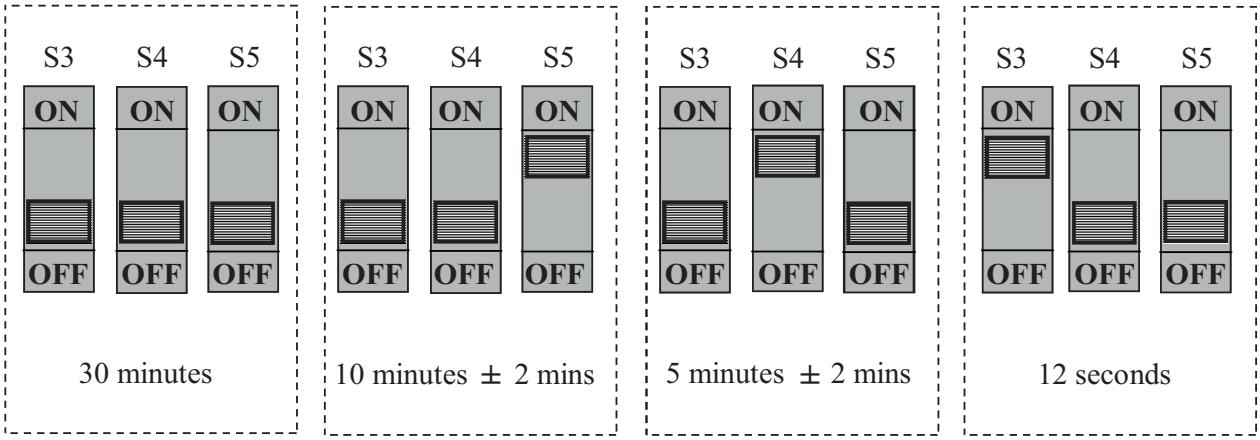
Time delay settings

The Micro Dim can be set to stay "ON" for any pre-set period of time as detailed below.
Any movement detected before this time has elapsed and the timer will restart.
It is recommended to select the shortest time for adjusting the detection zone and for performing the walk test.
DIP switch position to "ON" is position "1"
DIP switch position to "OFF" is position "0"

*** Use these Tables to set DIP switch positions and detection ranges >**

S3	S4	S5	Delay Time
0	0	0	30 minutes
0	0	1	10 minutes

S3	S4	S5	Delay Time
0	1	0	5 minutes ± 1 min
1	0	0	12 seconds ± 3 seconds



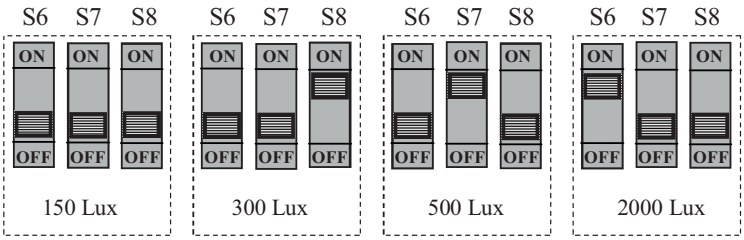
Light control settings

The chosen light response threshold can be pre-set at 150 Lux—300Lux—500Lux—2000Lux.

Set DIP switch position to **"1"** for **ON.**

Set DIP switch position to **"0"** for **OFF.**

DIP Switch position detail



Use these Tables to set DIP switch Luminance settings

S6	S7	S8	Luminance
0	**0**	**0**	150 Lux
0	**0**	**1**	300 Lux

S6	S7	S8	Luminance
0	**1**	**0**	500 Lux
1	**0**	**0**	2000 Lux

Note: The sensitivity of the photocell is such that it will react to the artificial light bounce back from the diffusers when mounted integrally to a luminaire and as such to avoid nuisance switching it is necessary to set the light control sensing at 2000 Lux. However, the light control sensing will operate when the MicroDim is used as Surface Mount external to the luminaire.

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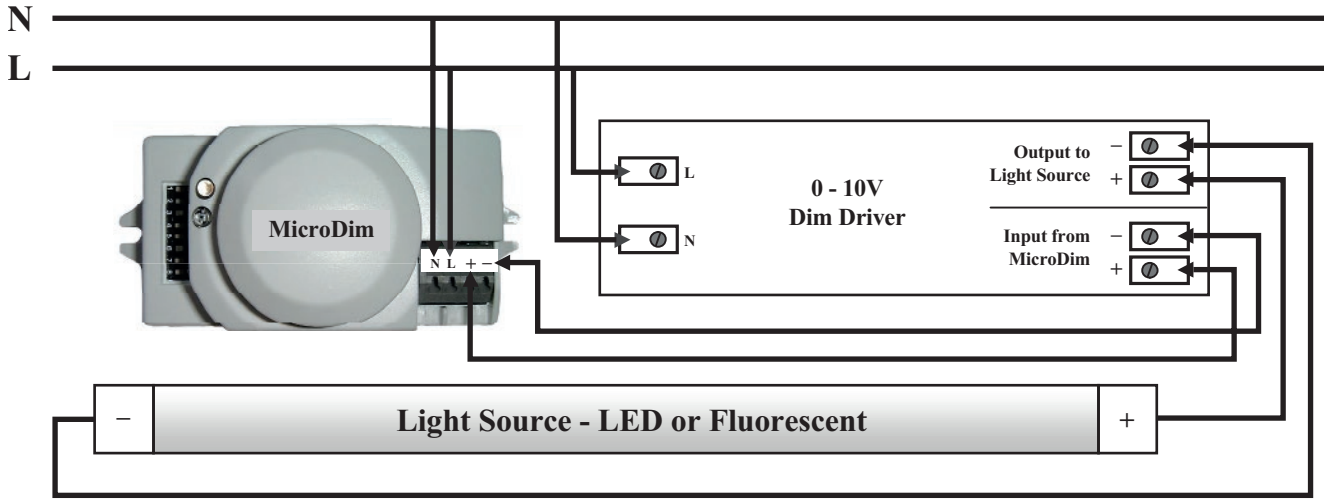
Wiring Diagram



Malfunction	Cause	Remedy
Non operation	• Wrong light control setting selected. • Load Faulty. • Mains switched OFF.	• Adjust settings. • Change load. • Switch ON.
Continual operation	Continuous movement in the detection zone.	Check zone settings.
Nuisance switching	• Sensor not mounted for detecting movement correctly. • Movement occurred, but not identified by the Sensor (movement behind a wall or the movement of a small objects such as plant, fans etc).	Check zone settings.
Non operation with movement	Rapid movements are being suppressed to minimise malfunctioning or the reach detection setting is too low.	Check zone settings.

Dimming Adjustment

The Micro-Dim will be set at minimum output at approximately 10% when in hibernation/standby mode. This can be amended by adjusting the standby switch (fig 6 page 1). Fully anti-clockwise is minimum output and fully clockwise is maximum of approximately 60%.

Note: Take care when adjusting the Standby control as too much pressure make break the control.

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