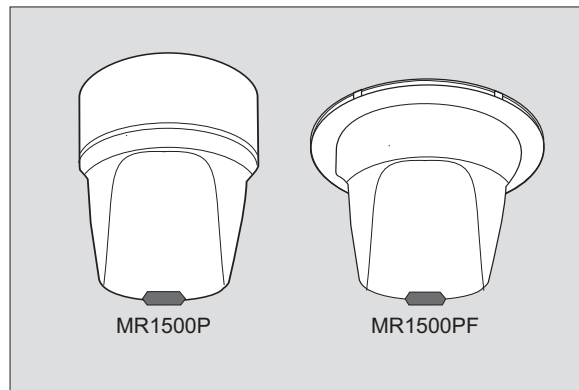




**MR1500P / MR1500PF
Mid Range LightSpot**



**Installation and Commissioning
Instructions**

Note: HP2000 or QUICKSET PRO required for commissioning

Mid Range LightSpot (Switching)

Fixing

Only suitably qualified personnel should install this equipment.

1. The Mid Range LightSpot is an extremely sensitive movement detector; it is essential therefore that it be installed on a rigid surface that will not itself be subject to any movement or vibration.
2. Before isolating the circuits to be switched, check that all lighting is fully operational and that there is no moving equipment or machinery within the monitored area which may cause nuisance switching.
3. Position the detector where it has a good forward "view" of the area to be controlled. Ideal mounting location is normally in a corner by the entrance or at one end of a corridor at a height of 2.5 to 3.5m. Do not mount within 25cm of a fluorescent fitting.

Please note that this product uses microwave technology to detect occupancy and is not recommended for applications where there are large areas of metal, e.g. metal ceiling or panelling, as unpredictable sensitivity may result.

Also, microwave presence detection is not completely attenuated by materials such as plasterboard, wood and glass, so the possibility of unwanted presence detection through office partitions should be considered when determining detector positioning and sensitivity settings within the intended application.

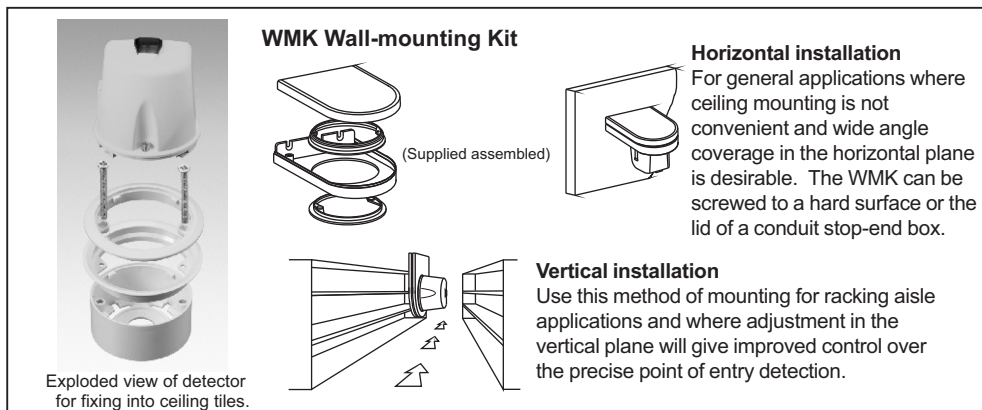
4a. MR1500P - Surface version

Separate the detector from its back-box by loosening the locking screw so that approximately 3mm of thread is visible and then twisting the detector off the back-box. Note the arrow symbol moulded into the bottom of the back-box. The fixing holes allow for mounting on a BESA box or direct to a rigid surface. Secure the back-box firmly to a rigid surface so that the arrow points into the controlled area.

4b. MR1500PF - Semi-flush version

Use a hole saw to drill a 76mm hole into the ceiling tile. The flush ring is designed to clamp the tile between its two halves. Loosen the locking screw so that approximately 3mm of thread is visible and remove the bottom half of the flush ring. With the detector in the ceiling, pointing towards the area to be controlled, fit the bottom half of the flush ring to the assembly. Depending on the thickness of the ceiling tile, screws longer than those supplied may be required to hold the two halves of the flush ring together.

It is recommended that Mid Range detectors be ceiling mounted. Where this is not possible, the wall-mounting kit (WMK - see below) must be used.



Electrical Connections

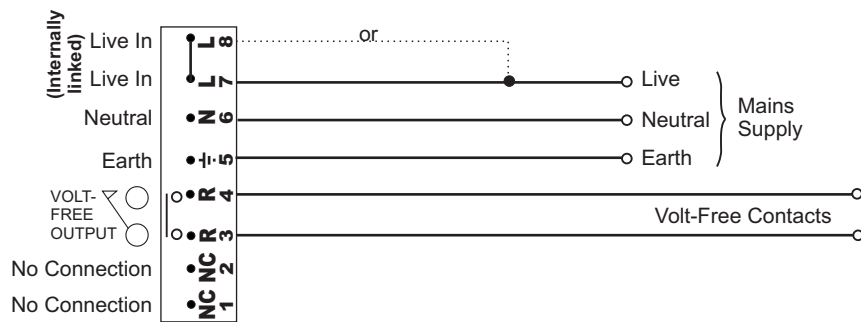
Mid Range LightSpot should be connected in accordance with the diagram below.

Mid Range LightSpot is designed to control a switched load of up to 10 Amps.

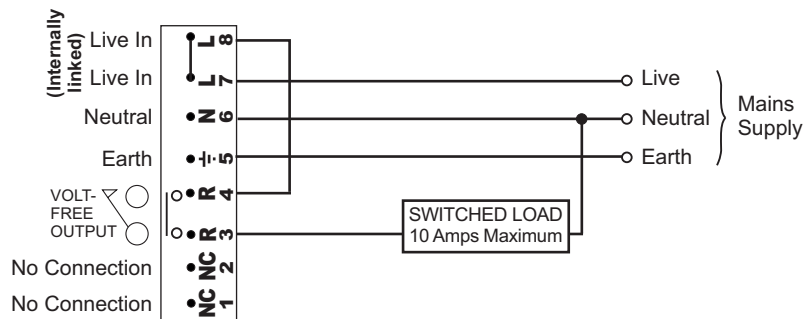
When switching via the relay output, multiple MR1500Ps' relay outputs may be connected in parallel provided the controlled load does not exceed 10 Amps.

Volt-Free Operation

Always check product label before wiring



Live-Out Operation



Note: A means of disconnection must be incorporated into the fixed wiring in accordance with the current wiring regulations.

Commissioning

The units are supplied with the factory default settings shown below which render commissioning unnecessary in many applications. To make use of the programmable settings, an infrared commissioning tool is required (HP2000 or QUICKSET PRO). A ten-second time delay is selectable to aid commissioning.

Sensitivity to Movement

While the factory settings will be correct for many applications, the sensitivity can be adjusted if required.

ON Sensitivity: This sets the detector's range when the lights are ON. Choose setting from 1-100 where 1 is lowest and 100 is maximum. (Note: Choose the lowest level possible to give adequate detection.)

OFF Sensitivity: This sets the detector's range when the lights are OFF. Choose % setting from 10% to 100% where 10% = 10% of ON Sensitivity and 100% = same as ON Sensitivity. This is an approximation and should be tested on site during commissioning.

Like all programmable parameters, the sensitivity settings will be retained in the event of a power failure and can be re-programmed any number of times.

Factory Default Settings

These are the settings to which the units have been programmed before they leave the factory.

Parameter	Options	Default Setting	Options
Power Up Response	On/Off Auto, Semi Auto	ON AUTO	Each of these settings can be re-programmed, if desired, by use of the infrared programming tool HP2000 or QUICKSET PRO.
Off Delay	1min-96hrs, 10 secs (walk test), Disabled	20 mins	
On Sensitivity	0-100	20	
Off Sensitivity	100-10% in 10% increments	100%	
Pcell Rly	Disabled/Passive/Active	Disabled	
Set-Point Low	0-1023	409	
Set-Point High	0-1023	512	

Photocell Control

i) Switching Photocell (PHOTOCELL: ACTIVE or PASSIVE)

Both ACTIVE or PASSIVE modes hold off the controlled lighting on entry when natural light is sufficient, i.e. SET-POINT LOW is exceeded, but only ACTIVE mode will extinguish the lighting if natural light increases sufficiently during occupancy, i.e. SET-POINT HIGH is exceeded continuously for a period equal to OFF DELAY. The lighting is restored immediately if the illumination level subsequently drops below SET-POINT LOW.

ii) Photocell DISABLED

If the photocell is configured as DISABLED it will have no effect on the control of that load, which will be ON continuously during periods of occupancy unless commanded OFF via manual switch or infrared control.

Programming the Photocell Set-points

Method 1: Manual

The parameters SET-POINT LOW and SET-POINT HIGH programme the detector's photocell response. The SET-POINTS can be manually programmed as numbers between 1 (darkest) and 1023 (brightest). This number is not scaled to correlate with 'lux' measurements made using a light meter, but nevertheless is a true representation of the light level perceived by the detector. To assist with finding the appropriate SET-POINT settings, the light level currently perceived by the photocell can be viewed on the HP2000 or QUICKSET PRO screen briefly, following a download operation. The number represents the light level read immediately before the download took place.

Tip: Turn the lights off (using HP2000: UTILITIES/USER-REMOTE or with QUICKSET PRO: UTILITIES/LightSpot_MLS-LCM/USER-REMOTE) to measure the perceived light level with no contribution from the controlled lighting.

Method 2: 'Teaching the Levels'

With the photocell configured as ACTIVE or PASSIVE:

- 1) If the lights are not already on, switch them on manually by pressing 'UTILITIES/USER-REMOTE/Luminaire+/OK' (HP2000) or "+" (HC5A) or 'UTILITIES/LightSpot_MLS-LCM/USER-REMOTE/HC5/Luminaire+/OK' (QUICKSET PRO). Fluorescent lights do not reach full output until up to 15 minutes after being switched on, so ensure that the lights are fully warmed up before continuing.
- 2) If the chosen photocell mode is Passive, wait until the time of day when the natural light level is at the point below which you **would** want the lights to be on. For Active photocell mode, wait until the light level is above which you **would not** want the lights to be on.
- 3) Start the internal self-programming mechanism by pressing 'UTILITIES/SET LIGHT LEVEL/OK' (HP2000) or press and hold Scene 1 (HC5A) or 'UTILITIES/LightSpot_MLS-LCM/USER-REMOTE/SET LIGHT LEVEL/OK' (QUICKSET PRO). The detector takes a photocell reading, adds a small amount and stores the value in SET-POINT HIGH. Then it turns the lights off, makes another measurement and stores the value in SET-POINT LOW. The lights now switch on again to acknowledge a successful programming operation.

The two switching thresholds have now been set, and the difference between them is equal to slightly more than the contribution made by the electric lighting. This is the perfect amount of hysteresis to ensure that the lights will not oscillate.

Important Additional Notes

1. All terminals on this product are provided for final connections. It is not intended that the product be used as a junction box for looping cables.
2. Take care when choosing a location for this equipment since this type of device is capable of detecting large moving metal objects well beyond the normal range at which it is sensitive to human targets.
3. This equipment switches lights no more frequently than would a responsible human occupant. However, manufacturers of some lighting types (e.g. '2D' luminaires) may specify a maximum number of switching cycles in order to achieve a predicted lamp life. Please check with the manufacturer of the luminaires to ensure that they are compatible with automatic controls in this respect.

Technical Data

OPERATING VOLTAGE: 230V ~ 50Hz (UK & Europe)

SWITCH CAPACITY: 10 Amps max any lighting load except incandescent lamps: 1500W max (at 230V~)

MAXIMUM RECOMMENDED MOUNTING HEIGHT: 3.5m

RANGE: Adjustable up to 20m

OFF DELAY: 1 min - 96 hours plus 10-second walk-test mode

PHOTOCELL: Passive/Active/Disabled adjustable 50-5000 lux

MATERIAL: Flame retardant PC/ABS

COLOUR: White

WEIGHT: 160g

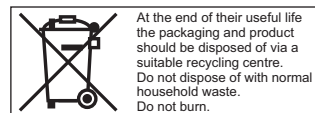
IP RATING: 4X

OPERATING TEMPERATURE: 0°C to 40°C

Contact Ex-Or Technical Helpline on 01942 719229 for guidance on installation and commissioning.

Ex-Or

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