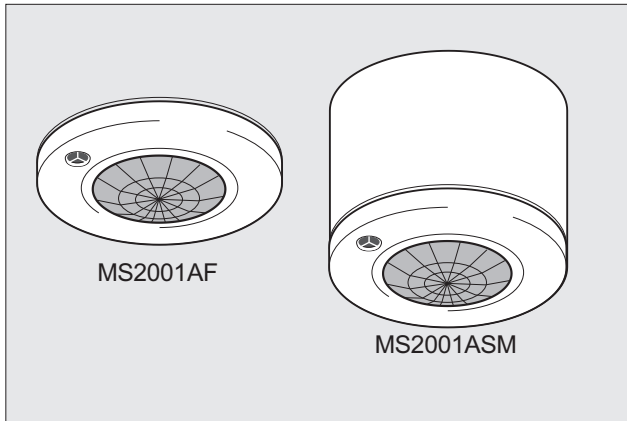




**Silver Series LightSpot
for use with 1-10V analogue ballasts
MS2001AF / MS2001ASM**



**Installation and Commissioning
Instructions**

Note: HP2000 (or HP10*/HP18*) required for commissioning

* Please note that the HP10 and HP18 offer different/limited programming options

MS2001AF / MS2001ASM - Silver Series LightSpot for use with analogue ballasts

Only suitably qualified personnel should install this equipment.

This is a high performance presence detector with regulating photocell. The photocell is designed to regulate the lights as daylight contribution varies. Please note that the photocell will not switch lights off in areas that are occupied unless 'Bright-out' is set to 'Yes'.

Fixing

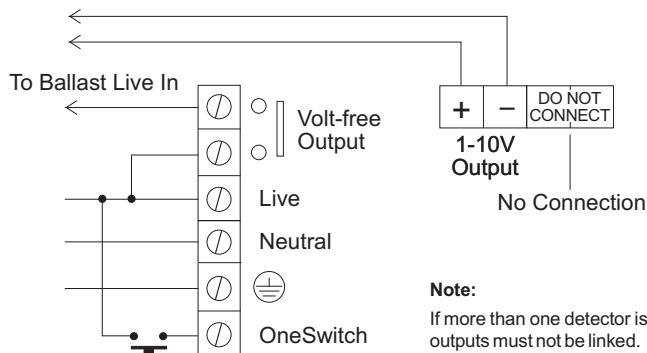
MS2001ASM - The housing may be secured to a hard surface or a BESA box. The unit fits into the housing with a simple bayonet action.

MS2001AF - Depth required behind ceiling: 62mm from front flange plus an allowance for the minimum bend radius of the cable. Sinking box fits into a 89mm diameter hole in ceiling tile or plasterboard ceiling. To avoid damage to ceiling tile, do not overtighten. No access above the ceiling is necessary.

Note: Do not mount within 25cm of a luminaire.

Connection

To Ballast Analogue Input



Note:

If more than one detector is used in an area, the detectors' 1-10V outputs must not be linked.

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. A means for disconnection must be incorporated in the fixed wiring in accordance with the current wiring regulations.
3. Although nominally 12V, the dimming output is not SELV and therefore should be treated with the same respect as mains with regard to wiring practice. The 0V line of the dimming output is almost at Neutral potential.
4. The dimming control output should be connected only to the control input of the ballasts - never to other detectors.
5. Due to the fact that the photocell is on the ceiling looking down, it is not possible for measurements made with a lux meter on the working plane to remain constant when daylight illuminates the ceiling and the working plane to a differing extent. Therefore, products of this type should be regarded as capable of maintaining an APPROXIMATE light level only.
6. 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.

Commissioning

The units are supplied with factory default settings appropriate for most applications (see below). These can be re-programmed using an infrared programming tool. Please note that the full range of parameters is accessible via the HP2000; the HP10 and HP18 offer different/limited programming options.

Parameter	Options	Pre-set	Notes (Detailed descriptions can be found in HP2000 help menus)
Power up	on/off	on	Sets the luminaire state at power up irrespective of occupancy. Useful in reducing start-up load following power cut. Power-Up off - responds to occupancy after 30 seconds.
Response	auto/semi-auto	auto	If set to auto, the presence detector switches the luminaire on and off automatically. If set to semi-auto, the luminaire will not turn on automatically when a person enters the area. It can be turned on using an HC5 / HC6 / HP18 or by toggling the power switch. When the area is vacated, the light will turn off automatically.
Off delay	1 min-96 hrs / Disabled (HP2000) 5-35 mins (HP10) 5,10,20 mins (HP18)	20 mins	The time for which the luminaire will stay on following the last detected movement. Also 10 second setting for walk-testing.
24 hour cycle	on/off	off	Output turns off for duration of 'Off delay' if area is unoccupied for 24 hours.
Start lamps	max/min	max	Sets the level at which the lamps strike when turning on.
Entry scene	scenes 1 - 6	scene 1	Sets which scene is recalled when an unoccupied area is entered.
Bright out	no/yes	no	If set to yes, movement fails to refresh the off delay if the ambient light level is 100% higher than its desired level, and the luminaire will switch off when the off delay has elapsed.
Fade to off	no/yes	no	When no presence is detected, and after the off delay period, the lamps can fade out instead of switching off (approx 80 seconds to fade from 100% to 0%).
When vacant	off/min /reg <25%/ scene 6	off	These are the options for a vacant area after it has timed out. Luminaires can turn off, remain at minimum output, or regulate with a 25% output limit, until the next period of occupancy. If programmed to remain at minimum, to regulate below 25% or go to scene 6, there is an option to switch off after 3 hours.
Photocell	Reg 100 - 50% / Passive / Active / Disabled	reg 100%	Sets the regulating range of the ballast in daylight conditions, i.e. at 100% the ballast can regulate over its full range, at 70% the ballast will not dim below 30% output. Manual override is not affected.
Lamp max	10 - 100%	100%	Control output upper limit (10-50% in 5% increments; 50%+ in 10% increments) Manual override is not affected.
Lower threshold	0-254	254	Point at which photocell allows lights to switch on.
Upper threshold	0-254	254	Point where photocell turns lights off if Photocell is in Active mode.

Walk-test Mode

Walk-test mode is activated by temporarily changing the off delay to 10 seconds and is used to check that the range of the presence detector is appropriate for the application. The short off-delay enables the installer to check that lights are switching on when movements are made at the edge of the detection zone. It is easier to carry out a walk-test when the photocell is not holding the lights off.

Setting the Regulating Photocell

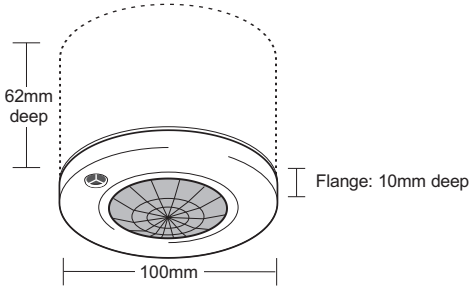
This product is intended for use with high frequency regulating ballasts with analogue 1-10V control inputs. An infrared programming tool is required for programming the regulating light level set point. The setting is preserved in the event of a power failure and can be re-programmed any number of times.

Using the HP2000 MLS Programmer: Enter the Utilities menu and select 'Set Light Level'. Use the 'up' and 'down' buttons to manually adjust the light output from the luminaire(s) and when at the required level press and hold 'OK' to store.

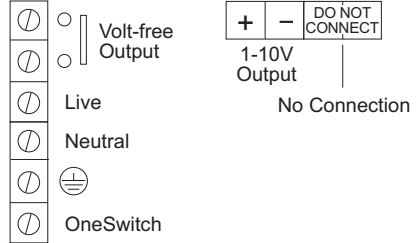
On the HP10 Programmer, use the 'UP' and 'DOWN' buttons to manually adjust the light output from the luminaire(s) and when at the required level press 'STORE' to store. The luminaire(s) will blink to acknowledge a successful store operation.

On the HP18 Programmer, use the '+' and '-' buttons to manually adjust the light output from the luminaire(s) and when at the required level press '✓' to store. The luminaire(s) will blink to acknowledge a successful store operation.

Dimensions



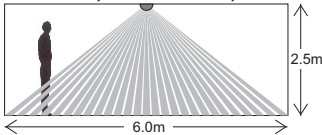
Electrical Connections



Technical Data

MAXIMUM RECOMMENDED MOUNTING HEIGHT: 3.0m

RANGE: Cone-shaped detection pattern, diameter (at floor level) = 2.4 x mounting height



PRODUCT RATING & RECOMMENDED CIRCUIT PROTECTION: 10 Amps

PHOTOCELL: Regulating

OFF DELAY: Adjustable via Programmer - factory pre-set to 20 mins

Programmer options: 1 min - 96 hours / Disabled (via HP2000); 5-35 mins (via HP10); 5, 10 or 20 mins (via HP18) - plus 10-second Walk-test Mode

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

TERMINAL CAPACITY: 2 x 2.5mm²

SWITCHING CAPACITY: 6 Amps

REGULATING CAPACITY: 25 ballasts max

OUTPUT: 1-10V Analogue

MATERIAL: Flame retardant PC/ABS

COLOUR: White

WEIGHT: 200g approx

IP RATING: 3X

Ex-Or

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At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with normal household waste. Do not burn.



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