MLS Digital - Networked Managed Lighting System

MLS Digital Mid-Bay Detector

Mid-Bay detectors offer energy-saving PIR presence detection at heights of up to 12m making them ideal for warehouses and industrial units. Coverage is on a 1:175 ratio, i.e. at 8m height, the detector's footprint is a 14m diameter circle. Mid-Bay features a range of programmable parameters so that operation can be tailored to your own particular requirements. Programming is carried out with an infrared programmer from ground level. A lens mask is available for end-of-aisle applications. Versions for DSI, DALI and 1-10V Analogue ballasts are available.

These Mid-Bay MLS Detectors can, if desired, operate within an overall MLS Digital Managed Lighting System.

Presence detection is by passive infrared, effectively enhanced to improve sensitivity to small movements.

Regulating photocell ensures a minimum maintained light level, taking account of the contribution from adjacent luminaires and daylight (dimmable control gear only).

Passive photocell holds lights off in bright conditions. Active photocell has the capability to switch lights off in occupied areas. (Options with Analogue version only.)

Off delay: Period following the last observed movement after which the lights switch off, adjustable via HP2000. (Also 5, 10 or 20 mins via HP18).

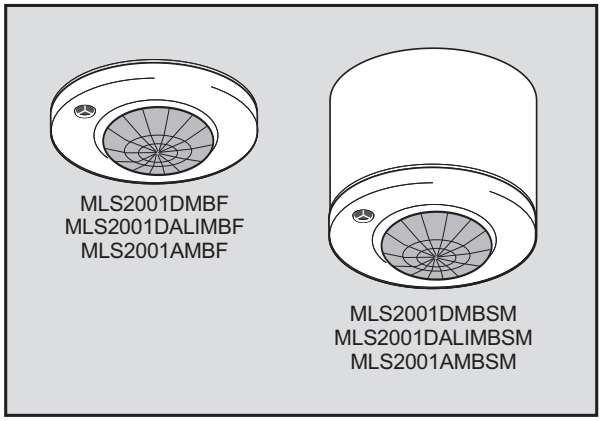
Detection pattern and range in metres at floor level (detection pattern is cone shaped). Range to mounting height ratio is 1:1.75, i.e. at 8m height, the cone's diameter is 14m at the floor.

Incorporates simple scene-setting - up to six scenes can be set or recalled via user remote.

Remote programming via HP2000 (or HP18 with limited choice of parameters) ensures changes can be easily accommodated.

OneSwitch Dimming. Manual input to adjust light level or turn luminaires on or off.

100-hour Burn-in. Inhibits dimming functions to allow new lamps to burn in. (Available on DSI and DALI version detectors and via HP2000 only.)



Commissioning the Programmable Parameters

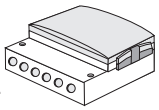
Operation of the system is determined by its commissioning. This is carried out using a menu-driven infrared remote programmer (HP2000) with virtually no disturbance to the building's occupants. Settings can be changed whenever required in the same way. The programmable parameters are shown overleaf in the order they are presented on the programmer. Options are selected from alternatives.

Ancillary Items

HP2000 MLS Digital Programmer
Menu-driven LCD Programmer with automatic equipment recognition and parameter download facilities.

MBPIRLM
Lens mask to prevent end-of-aisle movement from being detected.

RB2000 Bus Power Supply



A single Bus Power Supply synchronises and powers the bus for up to 200 MLS Controllers. It also provides a test facility. Units may be linked for larger installations and to provide a building-wide common zone. (RB2000LT Bus Power Supply Lite may also be used.)

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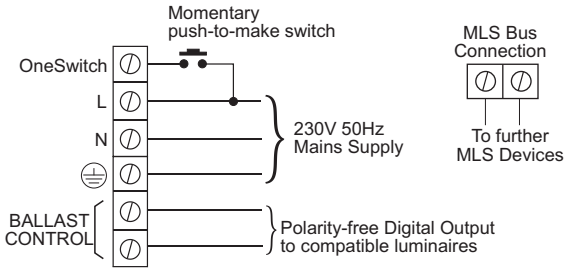
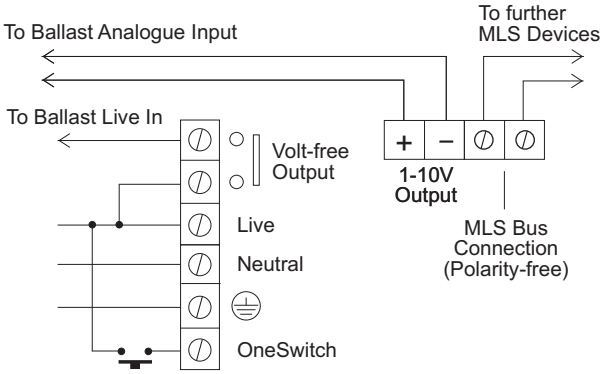
Electrical Connections

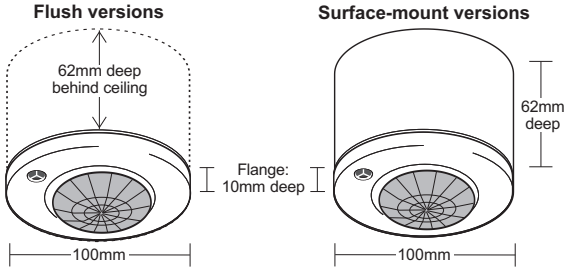
DSI/DALI Versions



Analogue Versions



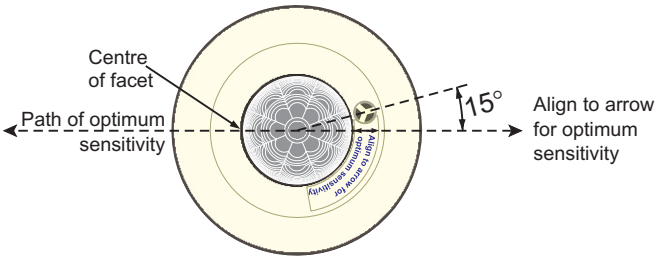
Dimensions and Installation Notes



Flush versions: Depth required behind ceiling: 62mm from front flange plus allowance for the minimum bend radius of the cable. Sinking box fits into 89mm diameter hole in ceiling tile or plasterboard ceiling. Note: If the sinking box is being fitted to a hard substrate such as metal, increase the hole size to 91mm. No access above the ceiling is necessary. The detector fits into sinking box with a simple bayonet action thus concealing the fixing screws.

Surface versions: The housing may be secured to a hard surface or a BESA box. The detector fits into the housing with a simple bayonet action.

Note: Minimum mounting pitch in regulating mode = 0.5 x mounting height.
For aisle or corridor applications, there is an optimum orientation for approach, clearly indicated on the front of the product.



Programmable Parameters

POWER UP — **Options: On/Off**
Sets status of luminaires when power is applied. On = lights power-up on irrespective of occupancy; Off = lights respond to occupancy after 30 secs.

RESPONSE — **Options: Auto/Semi-auto**
Auto = lights switch on and off automatically; Semi-auto = lights are switched on by wall switch or hand-held controller and switch off automatically.

OFF DELAY — **Options: 1 min-96 hrs/Walk-test/Disabled**
Sets the period after the last observed movement when the lights switch off. (In walk-test mode, the Off Delay is 10 seconds.)

ON SENSITIVITY (DSI/DALI Versions) — **Options: 0-100**
Sensitivity to movement when area is occupied (100 = max).

BUS CONNECT — **Options: Yes/No**
Determines whether detector sends/receives signals on MLS Bus.

1ST - 4TH ZONE — **Options: 1-100 (Zone #)**
Allows the creation of operational lighting zones via the MLS Bus.

CORRIDOR 1 & 2 — **Options: 1-100, 1-100 (Zone Span)**
For determining span of corridor operation via MLS Bus.

GLOBAL 1 & 2 Rx — **Options: Yes/No**
Sets up global commands to allow load shedding for example.

MANUAL INPUT — **Options: Shared/Local**
Determines whether OneSwitch operates locally or across MLS Bus.

START LAMPS — **Options: Max/Min**
Sets the level at which lamps strike when turning on.

ENTRY SCENE — **Options: Scenes 1-6**
Sets which scene is recalled when an unoccupied area is entered.

BRIGHT OUT — **Options: Yes/No**
Movement will not refresh off delay if ambient light exceeds 125% of set level.

DIMMING (DSI/DALI Versions) — **Options: 50-100%**
Can be set to operate between 50% and 100% ballast output from max to a bottom end limit when working on photocell control.

PHOTOCELL (Analogue Versions) — **Options: 50-100%, Passive, Active, Disabled**
Sets the regulating range of the ballast in daylight conditions. Manual override is not affected.

LAMP MAX — **Options: 10-100%**
Can be set to limit the absolute maximum ballast output.

FADE TO OFF — **Options: Yes/No**
Can set lamps to fade to off instead of switching off.

WHEN VACANT — **Options: Off/Min/Reg<25%/Scene 6**
Determines the behaviour of luminaires once the Off Delay has expired. Luminaires can switch off or go to a pre-determined level for a chosen duration: There are 3 light output options and 3 time choices.

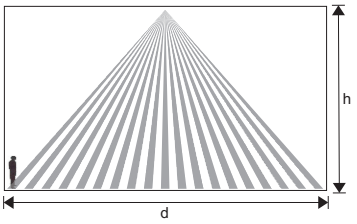
LOWER/UPPER THRESHOLD (Analogue Versions) — **Options: 0-254**
Point at which photocell switches luminaires on/off.

SET-POINT LOW/HIGH (DSI/DALI Versions) — **Options: 0-1023**
Low - aiming point as photocell adjusts ballast output. High - level above which photocell switches output off (only if Bright-out = Yes).

100-HR BURN-IN (DSI/DALI Versions) Options: Burn-in/Cancel/Resume
Inhibits dimming functions during burning-in of new lamps.

Technical Data

MAXIMUM RECOMMENDED MOUNTING HEIGHT: 12.0m
RANGE: 360° cone-shaped detection pattern, diameter at floor level (d) = 1.75 x mounting height (h)



MLS CABLE: 1.5mm² unscreened twisted-pair : see Application Note AN4001
MINIMUM MOUNTING PITCH (SPACING): 0.5 x mounting height (regulating mode only)
OPERATING VOLTAGE: 230V 50Hz (UK & Europe)
PRODUCT RATING & RECOMMENDED CIRCUIT PROTECTION: 10 Amps
OFF DELAY: Adjustable via Programmer - factory pre-set to 20 minutes
DEPTH REQUIRED BEHIND CEILING (FLUSH VERSION): 62mm from front flange plus an allowance for the minimum bend radius of the cables.
WEIGHT: 200g approx
COLOUR: White
MATERIAL: Flame retardant PC/ABS
OPERATING TEMPERATURE: 0°C to 40°C

Analogue Versions:
CAPACITY: 6 Amps (25 ballasts maximum)
OUTPUT: 1-10V Analogue
IP RATING: 3X
PHOTOCELL: Regulating (HP2000/HP18 programmable) / Active / Passive

DSI/DALI Versions:
CAPACITY: 25 ballasts
OUTPUT: 2-wire digital polarity free
IP RATING: 4X
PHOTOCELL: Regulating (HP2000/HP18 programmable)

Part Numbers

MLS2001DMBF	MLS Mid-Bay Detector for DSI ballasts - flush
MLS2001DMBSM	MLS Mid-Bay Detector for DSI ballasts - surface
MLS2001DALIMBF	MLS Mid-Bay Detector for DALI ballasts - flush
MLS2001DALIMBSM	MLS Mid-Bay Detector for DALI ballasts - surface
MLS2001AMBF	MLS Mid-Bay Detector for 1-10V Analogue ballasts - flush
MLS2001AMBSM	MLS Mid-Bay Detector for 1-10V Analogue ballasts - surface
HP2000	MLS Digital Programmer
MBPIRLM	Lens Mask
RB2000	MLS Digital Bus Power Supply
RB2000LT	MLS Digital Bus Power Supply 'Lite'

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