by Honeywell

IP65 BattenFit Sensor with Regulating Photocell
MSB1001DT for use with DSI ballasts
MSB1001DALIT for use with DALI ballasts

Installation and Commissioning
Instructions

Note: QuickSet Pro or HP18* required for commissioning
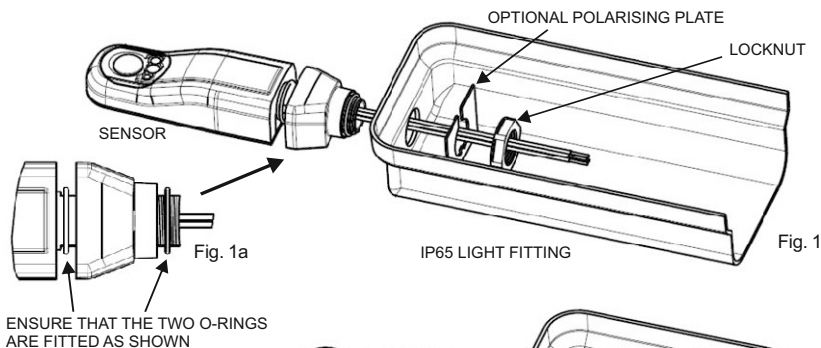* Please note that the HP18 offers different/limited programming options

IP65 BattenFit Sensor with Regulating Photocell: MSB1001DT - for use with DSI ballasts
MSB1001DALIT - for use with DALI ballasts

Only suitably qualified personnel should install this equipment.

This passive infrared presence detector is designed to be fitted to a batten-style luminaire.

Installation

1. Remove the M20 knockout from the end cap of the luminaire.
2. Pass the sensor wires through from the outside and insert the threaded end of the sensor into the hole.
3. A polarising plate can be made in order to prevent rotation of the sensor - an example design is given on page 3 (Fig. 5).
4. If a polarising plate is to be used, pass the wires through the slot and position the polarising plate against the inside face of the end cap. Ensure that the tab is positioned correctly i.e. at the ceiling side, away from the lamp.
5. Fit and tighten the locknut.
6. Connect the wires in accordance with the wiring instructions.

OPTIONAL POLARISING PLATE

LOCKNUT

SENSOR

Fig. 1a

IP65 LIGHT FITTING

Fig. 1

ENSURE THAT THE TWO O-RINGS
ARE FITTED AS SHOWN

If there is insufficient space for the locknut,
the adaptor shown below (Fig. 3) can be used.

20mm Female Adaptor
MK part number EFA/2

Fig. 3

Fig. 2
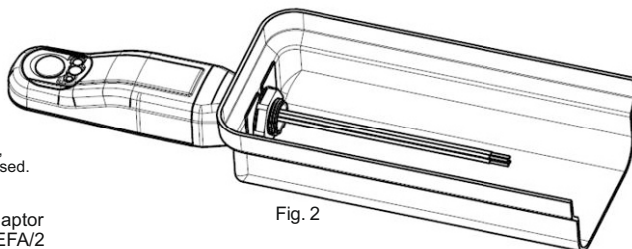
Angled Washer Kit (supplied)

If the light fitting has an angled (drafted) end face then use the kit provided as shown (Fig. 4).

IP65 SENSOR   20mm O-RING   LUMINAIRE WITH ANGLED END FACE

Fig. 4   ANGLED SPACER   ANGLED WASHER
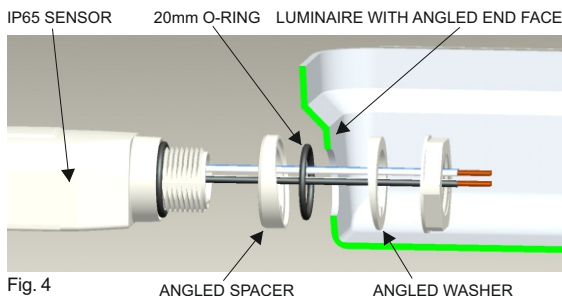
Polarising Plate (not supplied)

The purpose of the polarising plate is to ensure that the sensor does not rotate from the correct position, i.e. pointing vertically downwards, during transport or installation.

The two overall dimensions marked 'SEE TEXT' need to be made such that when the plate is positioned against the inner face of the luminaire end cap, it cannot rotate.

The 3.5mm 'tab' should be located closest to the ceiling (away from the lamp). The 6.0mm slot is optional and is to allow the wires to pass through for ease of assembly.

Material can be plastic sheet, minimum thicknesss 1.0mm, recommended thickness 1.5-2.0mm, or mild/stainless steel sheet, minimum thickness 0.6mm, recommended thickness 1.0-1.6mm.
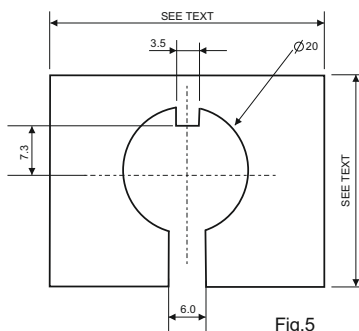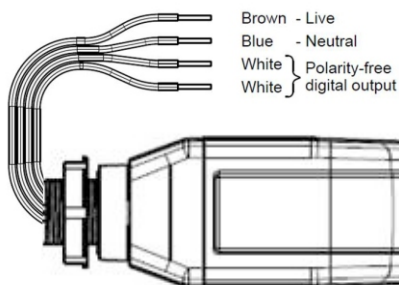
Fig.5

Electrical Connections

Brown - Live
Blue   - Neutral
White ⎤ Polarity-free
White ⎦ digital output

Fig.6

Always check product label before connecting.

SUPPLY
L   N   E

Do not connect the Dimming Signal Pair of one detector to that of another detector.

Blue
Brown
White
White

Note: White/White Dimming Signal Pair is Polarity Free.

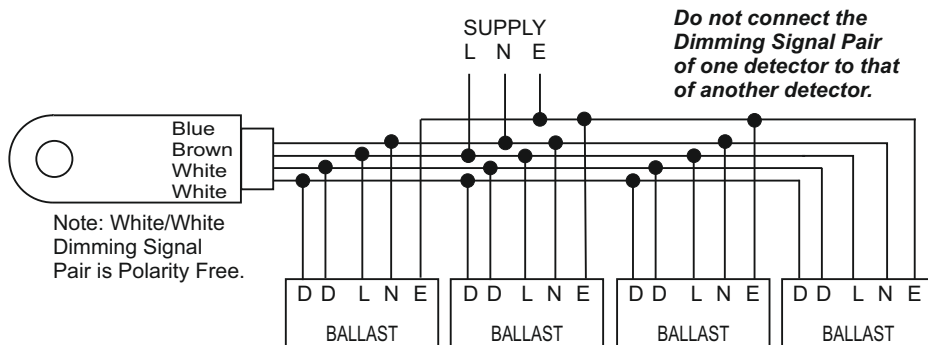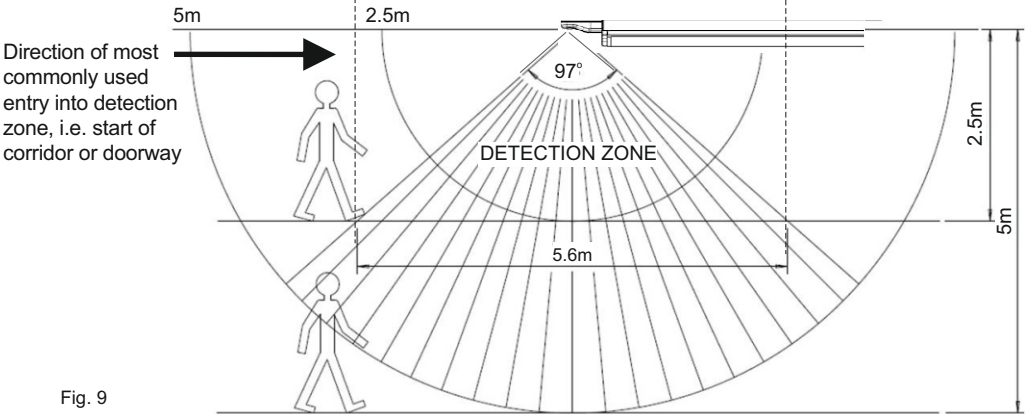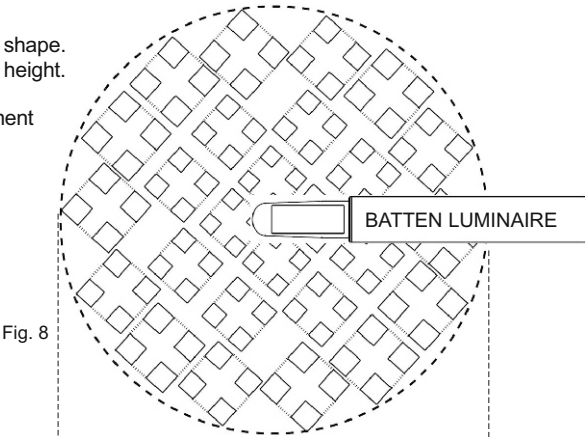| D D | L N E | | D D | L N E | | D D | L N E | | D D | L N E |
| BALLAST | | | BALLAST | | | BALLAST | | | BALLAST | | |

Fig.7

See 'Technical Data' on back page for maximum number of ballasts

Detection Profile

Plan View
Detection pattern is a 360° cone shape.
Diameter is 2.25 x the mounting height.

The squares show the arrangement
of the detection pattern.

Fig. 8

BATTEN LUMINAIRE

5m   2.5m

Direction of most
commonly used
entry into detection
zone, i.e. start of
corridor or doorway

97°

DETECTION ZONE

2.5m

5m

5.6m

Fig. 9

If the distance between the
bottom of the sensor and the
bottom of the end cap exceeds
59mm (in the case of square
covers) or 82mm (for rounded
covers), there may be a blind
spot in the detection zone.

59 MAX. (FOR SQUARE COVERS)

82 MAX. (FOR ROUNDED COVERS)

Fig. 10

DETECTION ZONE
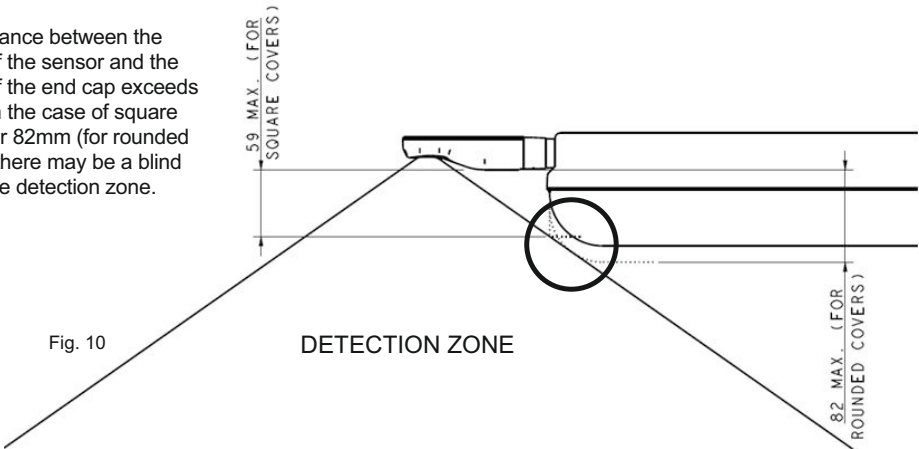
Setting the Regulating Photocell

This product is intended for use with high frequency regulating ballasts with digital control inputs. An infrared programming tool QuickSet Pro or HP18 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 QuickSet Pro: Enter the Utilities menu then choose 'LightSpot/MLS/LCM' 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 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.

Sensor Positioning Notes

The majority of light seen by the photocell must be from the batten under its control - not that contributed by another device (see Fig. 11).
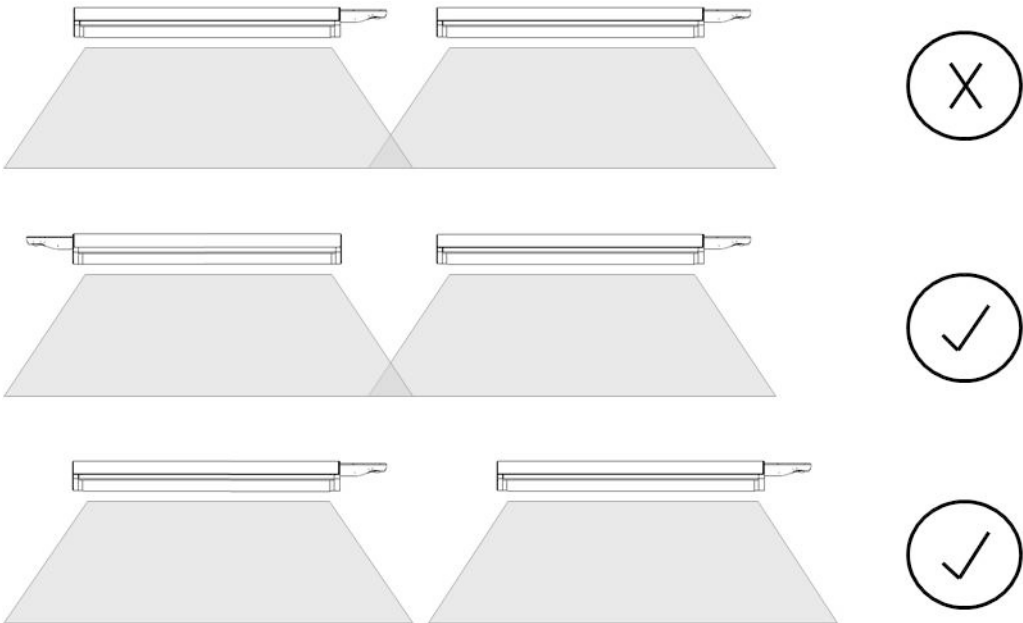

Fig. 11

Walk Testing

In order to verify the installation, there is an inbuilt facility (Walk Test Mode) to temporarily reduce the time delay to 10 seconds. A QuickSet Pro or HP18 Programmer is required to access this facility.

Using the HP18:

Press the 'TEST' button to enable walk test mode.

Move around the area that is being controlled, stopping for 10 seconds to allow the lights to switch off, before moving and triggering the lights back on.

Re-programme the desired Off Delay once testing is complete.

Using the QuickSet Pro:

Go to the Utilities menu, choose 'LightSpot/MLS/LCM', then 'User Test', then place the cursor over 'Walk Test, point the programmer at the detector and press OK.

Move around the area that is being controlled, stopping for 10 seconds to allow the lights to switch off, before moving and triggering the lights back on.

After 5 minutes, the time-out will be restored to what it was before walk test was enabled.

Notes on Walk Testing:

● During walk test, after the lights have turned off, wait 5 seconds before moving again because the sensitivity is deliberately reduced for a few seconds following switch off.

● Sensitivity is greater when approaching the circular footprint at a tangent rather than heading towards the centre (see Fig. 8).

● Most luminaires take approximately 1 second to strike after presence has been detected.

● The detection pattern is cone-shaped which means that when standing at the very edge of the detection footprint only a person's feet will be visible (see Fig. 9).

LED Operation

There is a blue LED on the detector which will flash when power is first applied or during a download from the QuickSet Pro. If the LED is required to flash whenever movement is detected, please contact Technical Support.

Commissioning

The factory default settings will be appropriate for most applications. However, the installer does have the facility to re-programme a wide range of parameters and to set the regulating light level using the infrared programming tools. Please note that the full range of parameters is accessible via the QuickSet Pro; the HP18 offers different/limited programming options.

Please read carefully the operating instructions that accompany the programmer prior to performing a programming operation.

The following table shows the pre-set factory settings and a brief explanation of each parameter. These parameters may be re-programmed any number of times and all settings will be retained in the event of a power loss.

Parameter	Options	Pre-Set	Notes
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 the hand-held controller or by toggling the power switch. When the area is vacated, the light will turn off automatically.
Off Delay	1 min-96 hrs (QuickSet Pro) 5, 10 or 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.
Start Lamps	Max / Min	Max	Sets the level at which the lamps strike when turning on.
Entry Scene*	1-6	Scene 1	Sets which scene is recalled when unoccupied area is entered.
Bright Out	Yes / No	No	If set to yes, movement fails to refresh the off delay if ambient light level exceeds 125% of set level and the luminaire will switch off when the off delay has elapsed. NB: Dimming must be set to 100%.
Dimming*	Reg 50%-Reg100%	100%	Can be set to operate between 50% and 100% ballast output from max down to a bottom-end limit when working on photocell control.
Lamp Max*	10%-100%	100%	Can be set to limit the absolute maximum output of the ballast in all operating modes.
Fade to Off	Yes / No	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 (latter via QuickSet Pro only)	Off	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 - available via QuickSet Pro only), there is an option to switch off after 3 times the Off Delay (XTN).
Upper/Lower Threshold	0-254	254	Point at which photocell switches lights on/off.
* These parameters are programmable using the QuickSet Pro only			

**Additional feature accessible under Utilities on QuickSet Pro:**

100 Hour Burn-In	Burn-in 100 hrs / Cancel / Resume	0 hr	See Application Note: AN4028

Important Additional Notes

1. A means for disconnection must be incorporated in the fixed wiring in accordance with the current wiring regulations.

2. The dimming control output should be connected only to the control input of the ballasts - never to other detectors.

3. This equipment should be used to control only those ballasts powered from the same phase as the detector

4. 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.

5. DSI/DALI wiring to be on mains-rated safety wire.

6. 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.

7. This equipment switches lights no more frequently than would a responsible human occupant. However, manufacturers of some particular 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.

8. In order to achieve satisfactory light-level regulating operation, a detector must observe a substantially greater proportion of artificial light from the luminaire(s) under its control than from neighbouring luminaires not under its control.

Dimensions

All dimensions in mm

M20 x 1.5

14

29

15

Fig.12

580

135

40

Fig. 13
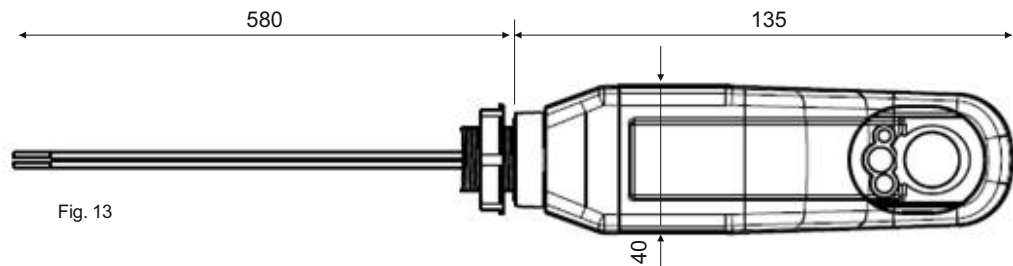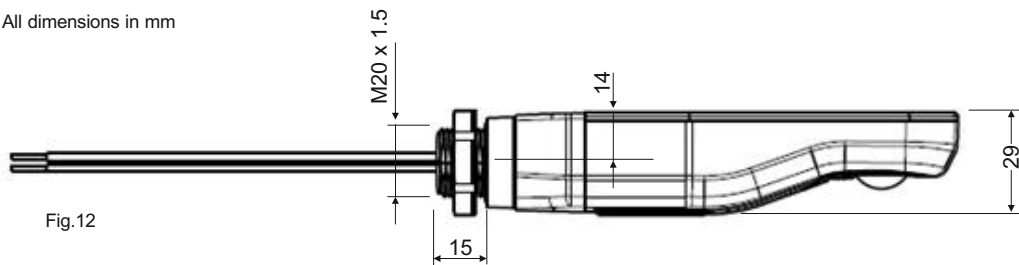
Technical Data

MAXIMUM RECOMMENDED MOUNTING HEIGHT: 5 metres
OPERATING VOLTAGE: 230V~ 50Hz (UK & Europe)
POWER CONSUMPTION: <0.5W
CAPACITY: MSB1001DT - 4 x DSI ballasts
                MSB1001DALIT - 4 x DALI ballasts
WEIGHT: 120g
COLOUR: White (RAL9010)
MATERIAL: Flame retardant PC
IP RATING: 65

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