Honeywell MLS3401CDRF High Detection Microwave Sensors Instruction Manual
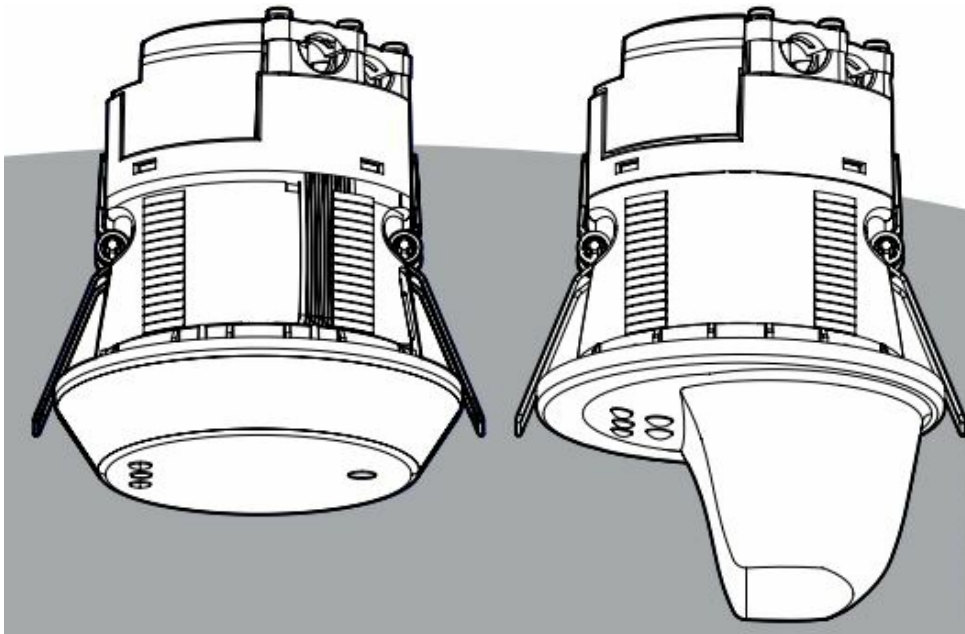
Honeywell

Contents

Honeywell MLS3401CDRF High Detection Microwave Sensors Instruction Manual

⚠ Only suitably qualified personnel should install this equipment

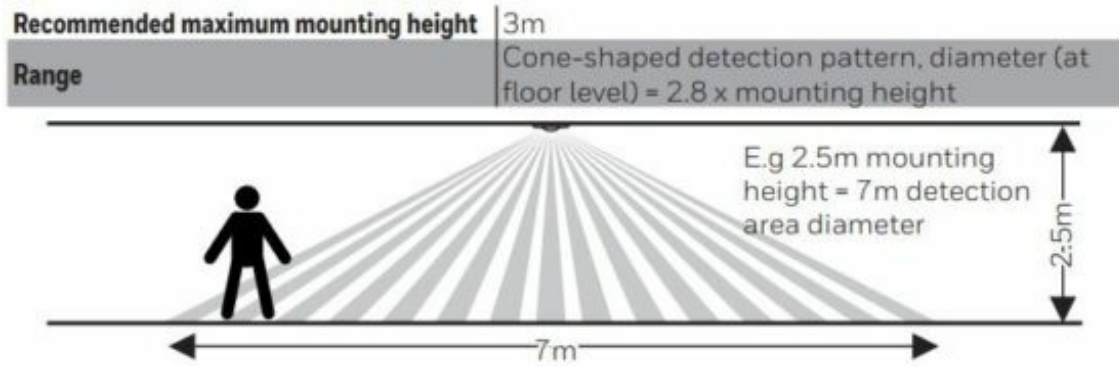| Part Number	Flush Mount	360 degree Sensing	Directional Sensing
MLS3401CDRF	•	•	
MLS3500CDRF	•		•

Security
For details of securing the product and system see the General Security Best Practice for Ex-Or Products Information Sheet – D6004.

1) Determine Position

The MLS3xxxCDR sensors are extremely sensitive movement detectors. They must be installed on a rigid surface that will not be subject to movement or vibration. They are not recommended for applications where there are large surface areas of metal, e.g. metal ceiling or floor tiles, as unpredictable sensitivity may result. Microwaves can penetrate lightly built partitions, glass, etc. Movement in adjacent spaces may cause spurious triggering if the orientation and sensitivity setting of the detector is not managed carefully.
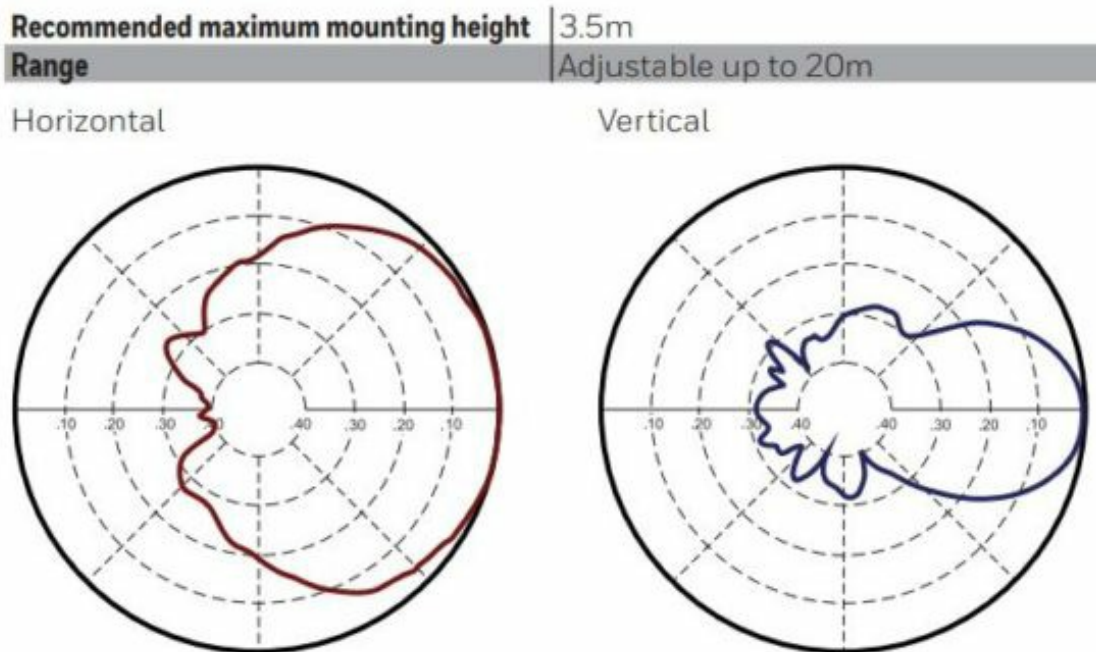
MLS3401CDRF
Do not mount within 0.25m of a luminaire. Max distance between sensors = 5m

Recommended maximum mounting height	3m
Range	Cone-shaped detection pattern, diameter (at floor level) = 2.8 x mounting height

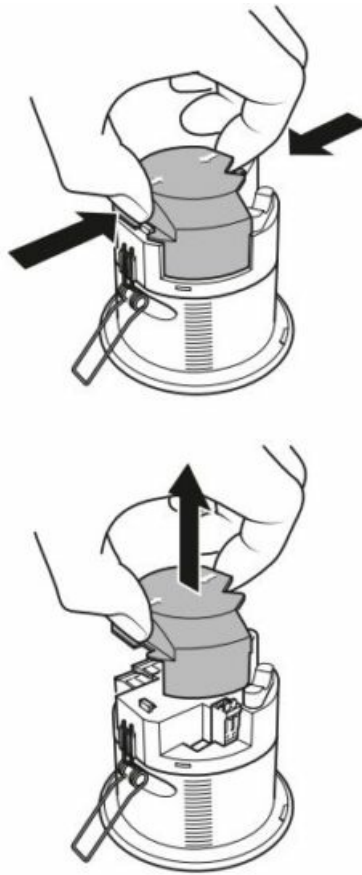E.g 2.5m mounting height = 7m detection area diameter

2.5m

7m

MLS3500CDRF & MLS3500CDRS

Position the detector where it has a good 'view' of the space to be controlled. An ideal location is in a corner adjacent to the entrance of a room or at one end of a corridor. Do not mount within 0.25m of a luminaire.
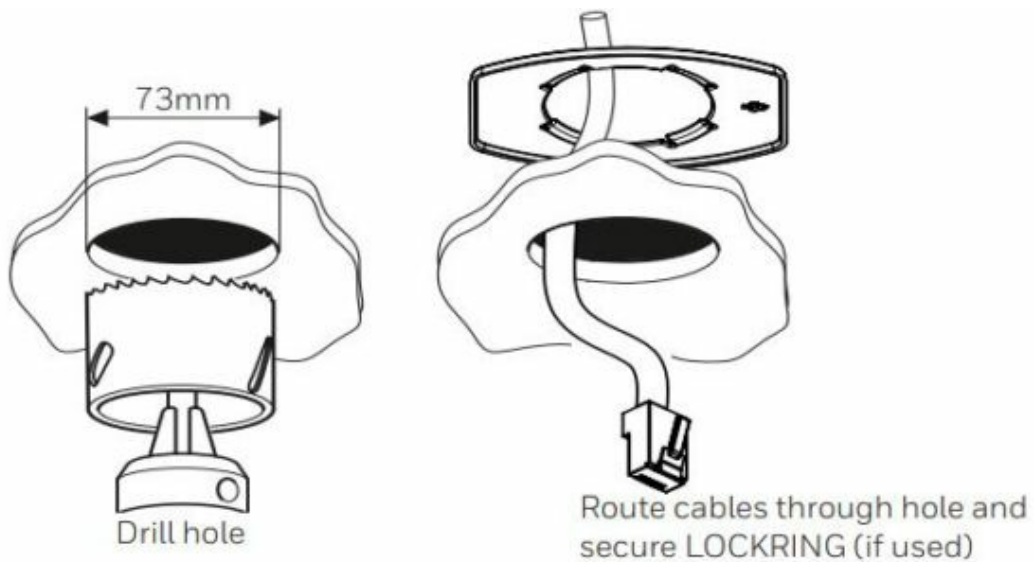
Recommended maximum mounting height	3.5m
Range	Adjustable up to 20m

Horizontal

Vertical

2) Remove Terminal Cover

3) Fit Flush Mount Version (MLS3401CDRF & MLS3500CDRF)

3a) Prepare Mounting Location and Run Cables

73mm

Drill hole

Route cables through hole and secure LOCKRING (if used)

3b) Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)
Connect to the LCM – see "Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)"
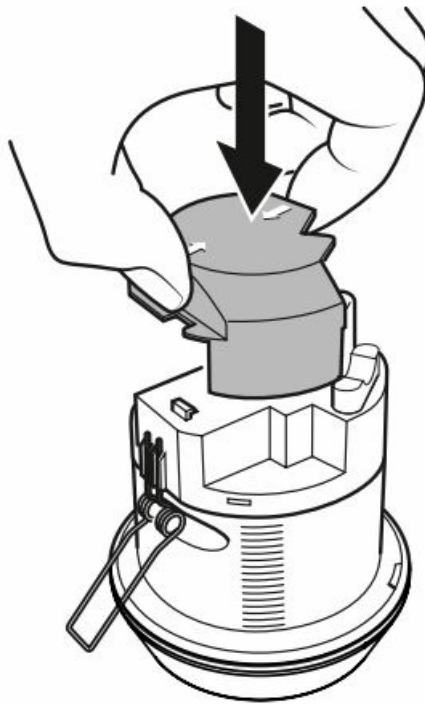
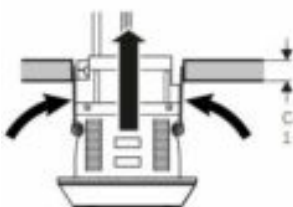3c) Fix Cable Clamps (optional for 1mm²-2.5mm² sheathed round cables)
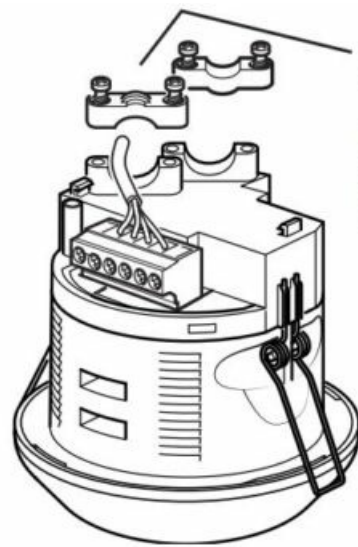
Cable clamps can be reversed to reduce aperture

Note: If using cables larger than 3x1.5mm^2 the outer sheath on the supply cable should only be removed after the sheathed cable has been clamped in position.

3d) Replace the Terminal Cover

3e) Fix to Ceiling

Standard Method

Ceiling tile thickness 1 to 20mm
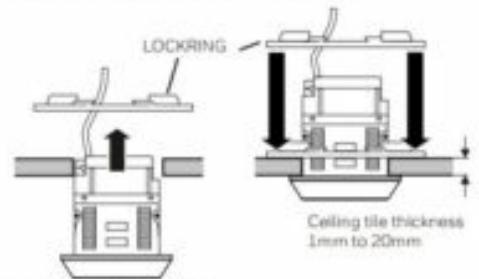
LOCKRING Method
The LOCKRING cannot be used when there is no access to ceiling void.

LOCKRING

Remove springs

Ceiling tile thickness 1mm to 20mm

NOTE: To remove sensor rotate LOCKRING and pull up

4) Fit Surface Mount Version
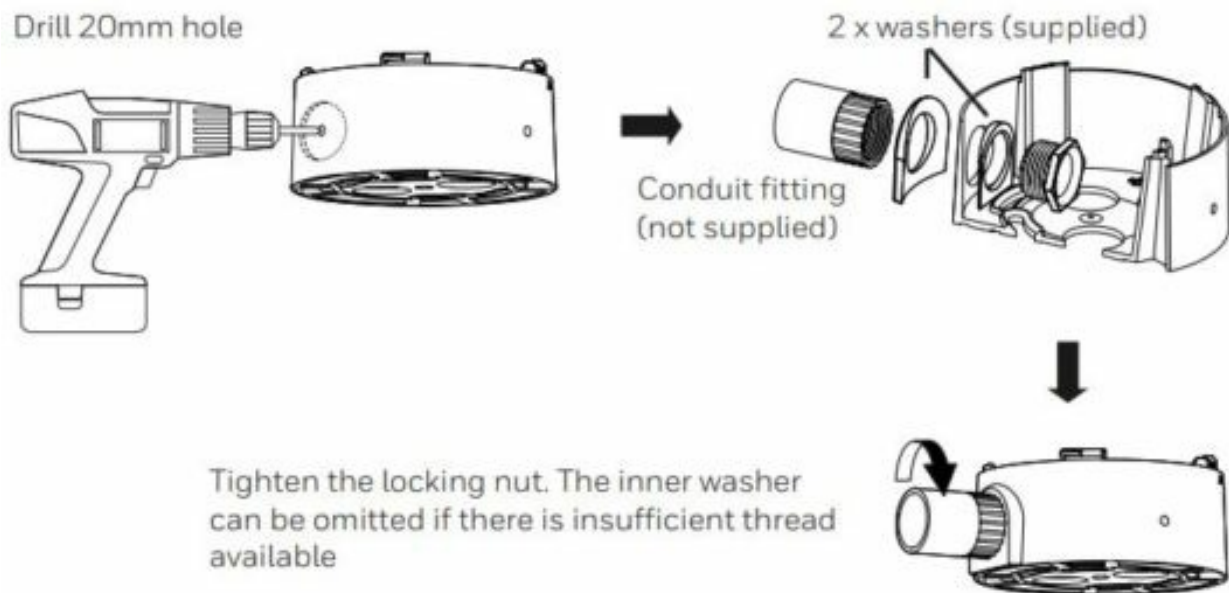
Note: If surface mounting version his a required a surface mount kit is required.
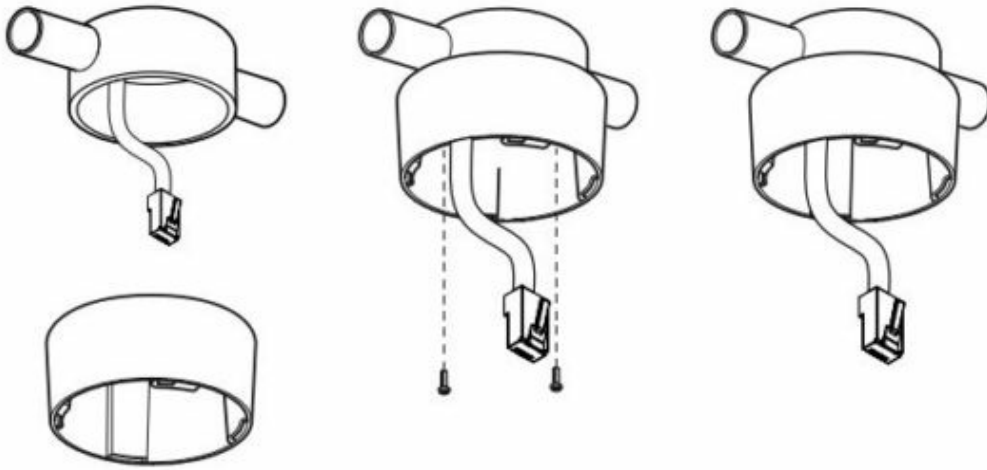
4a) Remove springs & Attach Shell
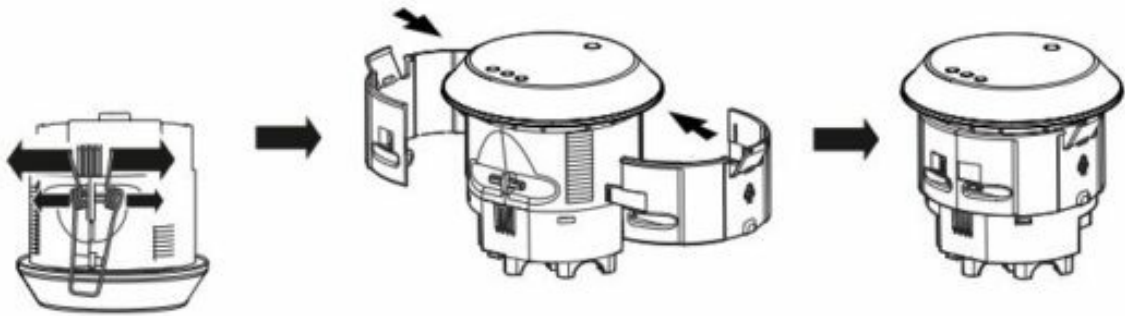
4b) Attach Conduit Fittings & Cable Glands to Lower Housing (if required)

4c) Prepare Mounting Location and Run Cables

The sensor may be mounted to any suitable surface, but is most commonly fixed to a conduit stop-end (BESA) box or bushed to trunking.

4d) Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)
Connect to the LCM – see "Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)"

4e) Fix to Ceiling
8 segments on the collar allow up to four different rotational positions for the sensor, when inserting the tabs into slots (1-8).

Drill point for optional secure locking with a 3mm tamperproof screw (not supplied)
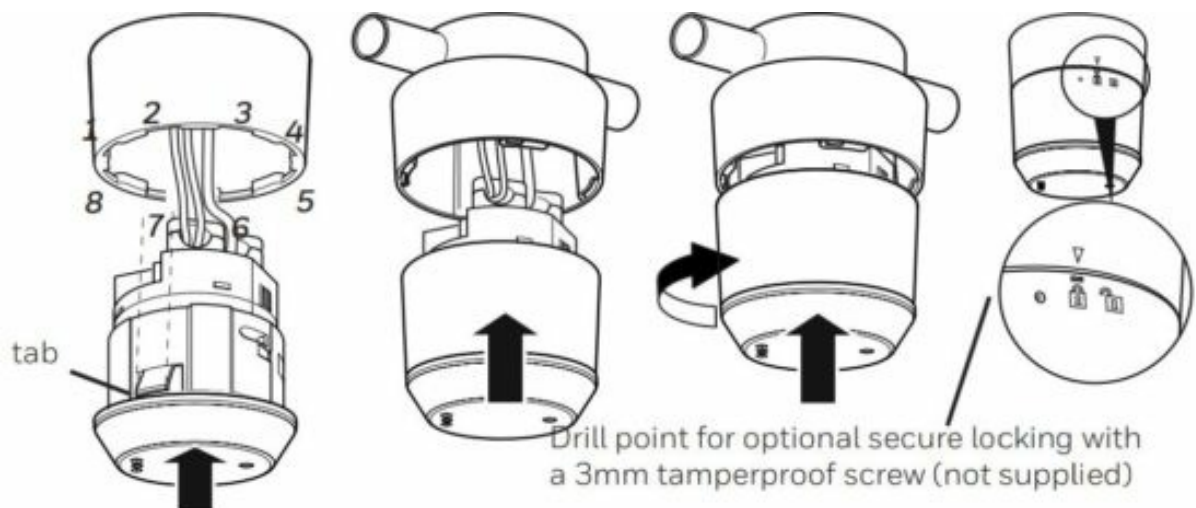
5) Perform Walk Test

In order to verify correct installation, walk testing is recommended. Follow the instructions provided with the QSP. During the walk test the connected lights will be switched off until movement is detected.

- Stand out of the sensor's viewable footprint or remain motionless within the viewable footprint and wait for the lights to go out.
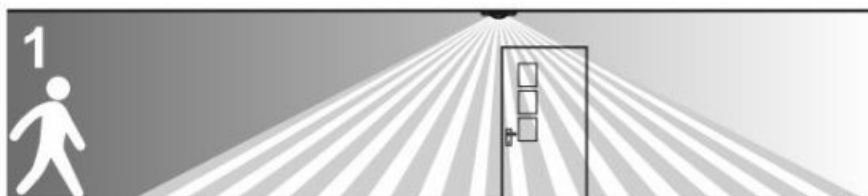
- Wait a further 2 seconds for the sensor to stabilise then make a movement, the lights should come back on. Observe that the detection / non-detection area is as expected.

6) Configuration

Most of the configuration for the lighting control system is performed on the LCM not the sensor – refer to the LCM's documentation.

The controlling and switching set-points for the photocell can be configured using the Quickset Pro (QSP) or HC5A. The setting is then transmitted from the sensor to the LCM, where it is associated with the appropriate sensor and will be preserved in the event of power failure.

Setting the regulating photocell

- Using the QuickSet Pro Programmer, enter the Utilities menu and select LightSpot/MLS/LCM then Set Light Level.
- Use the 'up' and 'down' buttons to adjust the light output from the luminaire(s) and when at the required level press and hold OK to store. The luminaire(s) will blink to acknowledge a successful store operation.

Note: Because 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 only maintaining an approximate light level.

Setting the switching light level
The desired switching light level must now be calculated by either waiting for an appropriate time of day or by a combination of manually switching off lights and perhaps masking windows.

- Using the QuickSet Pro Programmer, enter the Utilities menu and select LightSpot/MLS/LCM then IR Remote.
- Scroll down to Scene 1 and press and hold OK to store. The luminaire(s) will blink to acknowledge a successful store operation.

7) Diagnostics
LED indications are provided to help with fault-finding.

LED indication	Meaning
Blue	Movement detected
Flashing white on startup	Hardware and firmware is working correctly.
Flashing green	Communication with IR hand-held remote in progress
Flashing red	RS485 bus communication error

Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)

The wiring scheme used should follow either the T-568A or the T-568B Ethernet standards, and must give one-to-one., 'straight-through', connectivity between the two RJ45 connectors for all eight cores.

Note: The leads must be segregated from mains wiring to preserve the detector SELV status that is provided by the LCM design.
Note: Strain-relief hoods should not be fitted to the insulation displacement RJ45 connectors, due to the limited space available above the sensor.

Terminal type	RJ45
Recommended cable	4- twisted pair, 24 AWG multistranded, unscreened data cable to Category 5E standard, (e.g. Belden Datatwist 350).
Max cable length	100m

Ready-made patch leads in lengths of 3m (BT5E030GY), 5m (BT5E050GY) and 10m (BT5E100GY) are available.

Where it is a requirement that the patch leads are protected by conduit it may prove more convenient to run the cables unterminated and attach the RJ45 connectors afterwards.
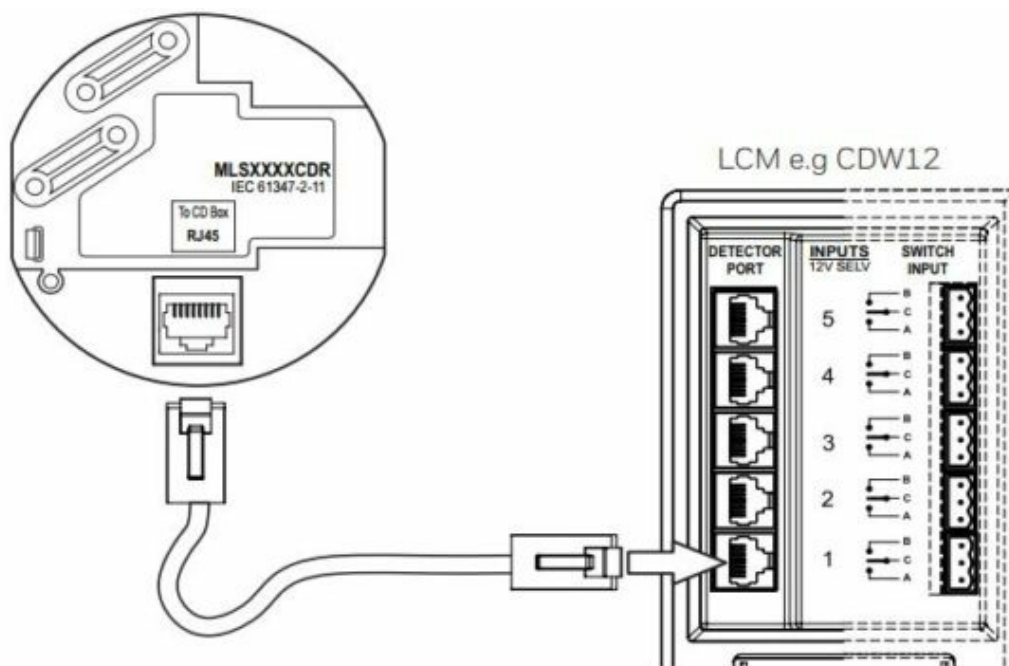
**Note:** The sensor is not an Ethernet device and cannot be used with hubs and switches.

Uninstall surface mount variants

(MLS3401CDRS)
Insert a flat headed screwdriver into the slot as shown and twist the collar anticlockwise to release. To separate the sensor from the surface mount casing, push a flat headed screwdriver onto the tab via the inside void of the casing and pull the unit appart.

If fitted remove tamperproof screw

Max 4mm
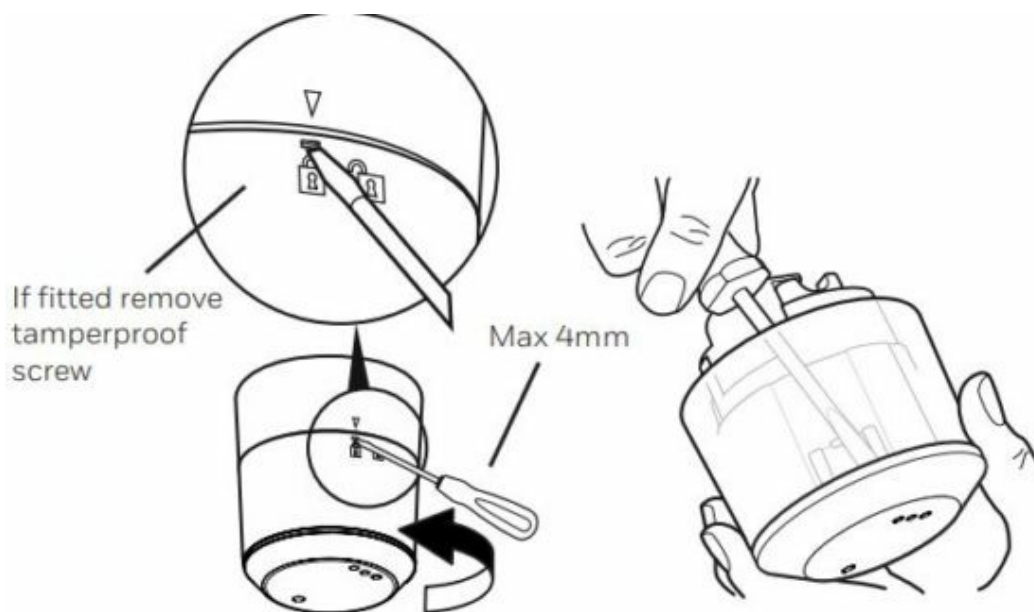
⚠ **IMPORTANT NOTES**

1. In order to achieve satisfactory light level regulating operation, a sensor must observe a substantially greater proportion of artificial light from the luminaire(s) under its control than from neighbouring luminaires not under its control. This is particularly important when planning the installed layout of linear luminaires that have an integral detector positioned at one end.
2. All information given in this document was correct at the time of publication.

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Specifications

Operating voltage	12V DC, SELV if correctly installed
Photocell	Regulating
IP Rating	IP40
Operating temperature	0°C to 45°C
Dimensions	
MLS3401CDRF	Height 93.5mm, diameter 87mm
MLS3500CDRF	Height 120mm, diameter 87mm
Weight	
MLS3401CDRF	140g
MLS3500CDRF	240g
Colour	White (RAL9010)
Material	Flame retardant PC/ABS

This symbol on our product shows a crossed-out 'wheelie-bin' as required by law regarding the Waste of Electrical and Electronic Equipment (WEEE) disposal. This indicates your responsibility to contribute in saving the environment by proper disposal of this waste i.e. Do not dispose of this product with your other wastes. To know the right disposal mechanism please check the applicable law.

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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References

- **H Ex-OR Lighting Technology | Honeywell Building Technologies**
- **H PEHA | Honeywell Building Technologies**