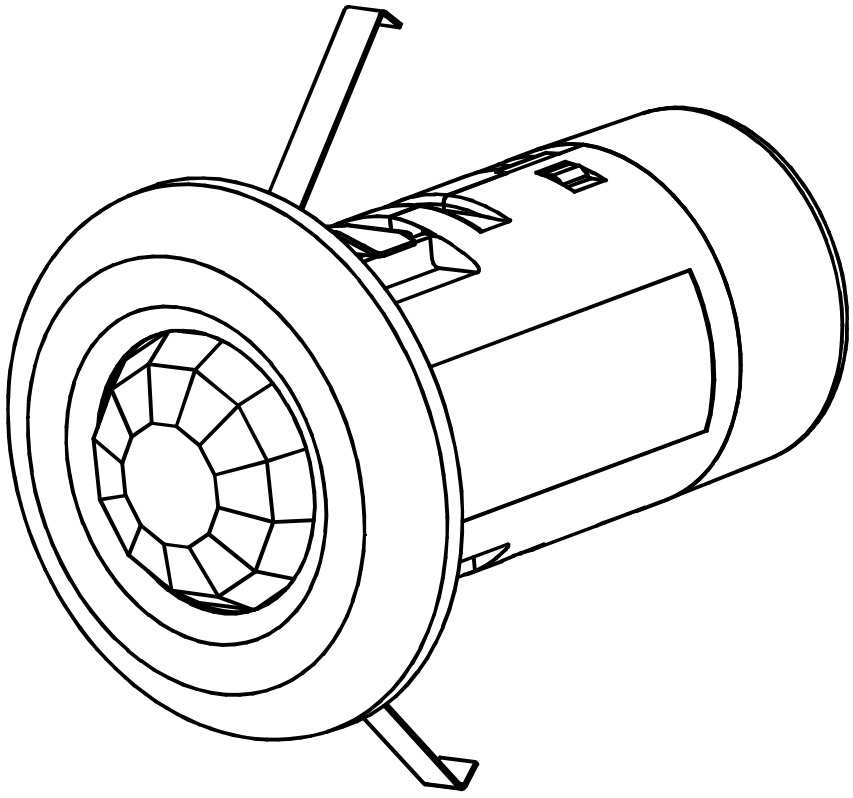
CLIPSAL

CLIPSAL C-Bus2

C-Bus 360º PIR Occupancy / Multi Sensor

Installation Instructions

5753 Series



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Disclaimer
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1.0 Product Range

5753L C-Bus 360° PIR Occupancy Sensor
5753PEIRL C-Bus 360° PIR Multi Sensor

2.0 Description

The 5753 Series PIR Occupancy / Multi Sensor is part of the Clipsal C-Bus2 range and as such should only be connected to a Clipsal C-Bus Network. The 5753 Series monitors its immediate environment. Whenever it detects movement of body heat within it's range, it will issue commands over the C-Bus Network to control output devices. When connected to an operating C-Bus Network, the Sensor will be able to detect any moving infrared source which moves into its "field of view".

The 5753 Series, includes an ambient light sensor which is used to allow different behaviour between dark and light conditions.

The light level required to change from light to dark is adjustable by removal of the front surround and can be set from any condition from full daylight to almost complete darkness.

The "time on" adjustment is set from the C-Bus Installation Software or via its *Learn Mode* (refer Section 8.1.1).

The 5753PEIRL Multi Sensor also includes an IR receiver which is used to receive IR from the remote control (i.e. 5034TX, 5034TX12 or 5038TX remote control).

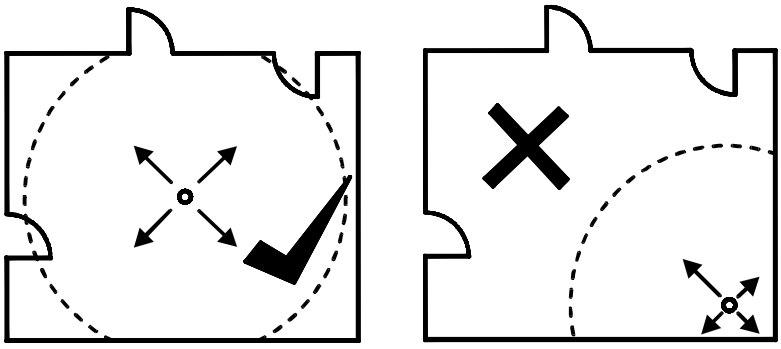
Note: A small plastic screwdriver is supplied for light level adjustments.

3.0 Installation Procedure

3.1 Installation Location

The 5753 Series is for indoor use only and is designed to recess mount into the ceiling with the best location being in the centre of the room. It has a 360 degree field of view with a typical detection coverage of 15 metres when mounted 2.4 metres above the floor.

Typical Room Plan Example:



RIGHT WRONG

Note: Do not mount close to objects that can change temperatures rapidly, such as air-conditioning vents or heater flues. Avoid high humidity locations which may cause condensation on the lens.

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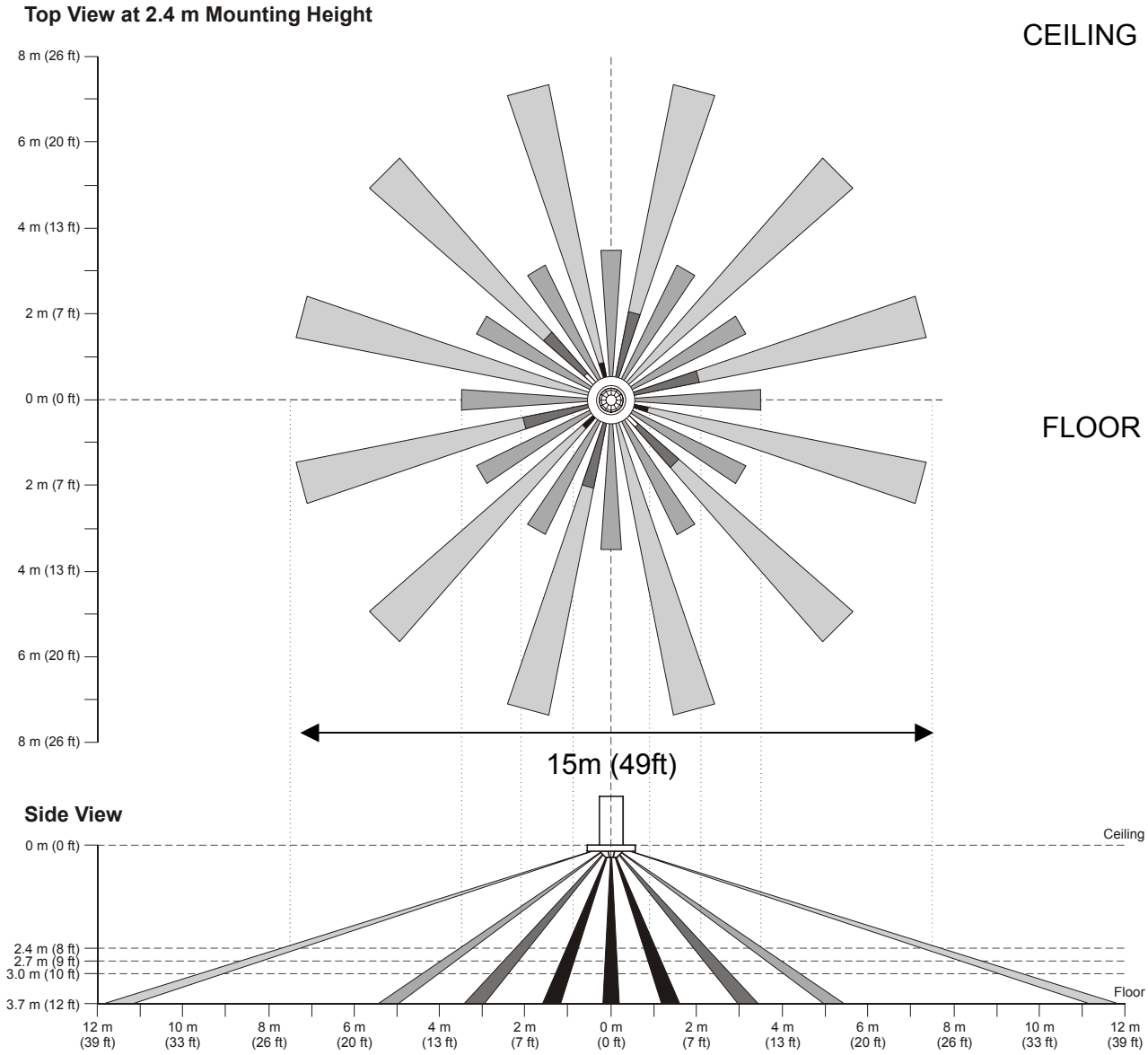
3.2 Field of View



For more detailed information on detection coverage, refer to CIS publication "Designing with Clipsal C-Bus Occupancy Sensors.pdf" which can be downloaded from www.clipsal/cis.

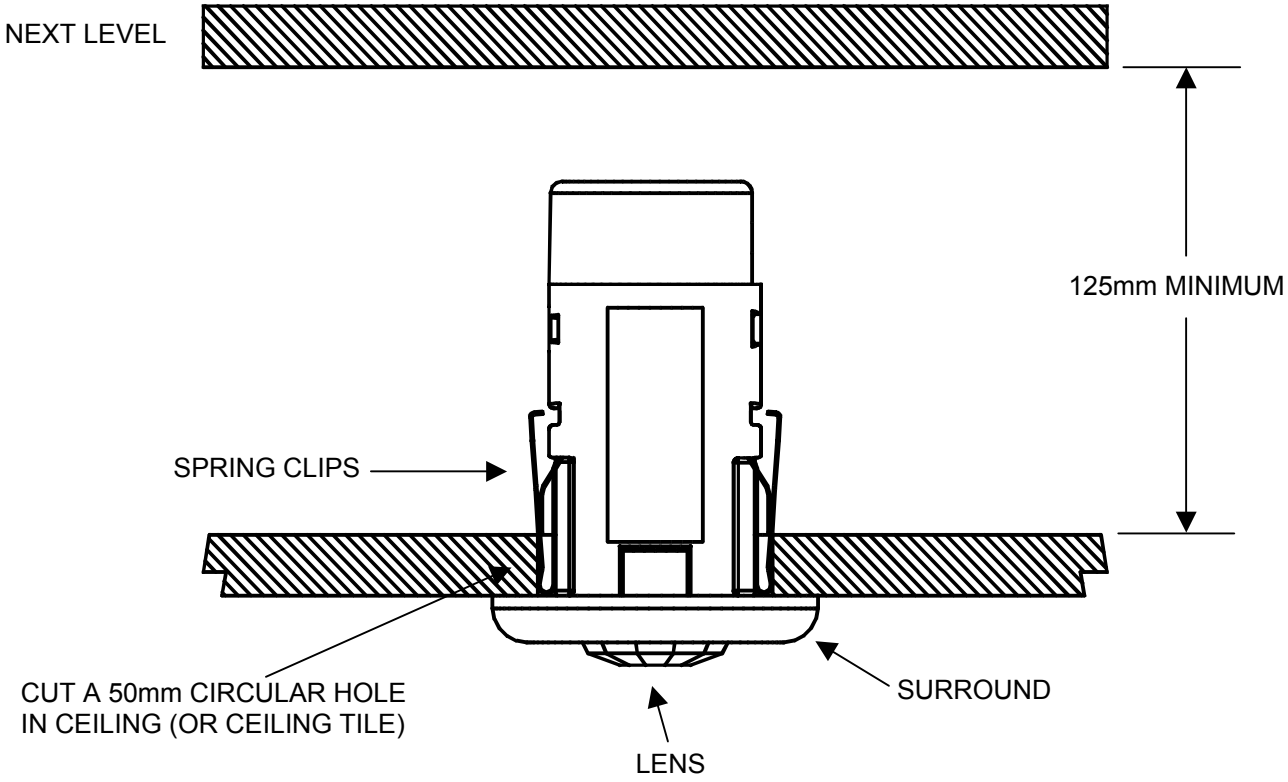
For 5753PEIRL – IR Receiver Range is 5m circular when using the 5034TX12.

Disclaimer:
The stated field of view is typical for full body movement and is subject to variations caused by the type and quantity of clothing worn, as well as variable background temperature characteristics and speed of movement.
Rapid and large temperature changes may be detected even if they appear to be well beyond the field of view due to reflections off surfaces that are within the field of view.

3.3 Mounting Instructions

Step 1 Using a hole saw, cut a 50 mm (2”) circular hole in the ceiling (or ceiling tile).

Step 2 Depress the outer ends of the spring clips towards the center of the unit and push the unit through the hole until it rests flat on the ceiling.
Note: Do not apply any pressure on the actual Sensor lens itself as this will damage the lens.



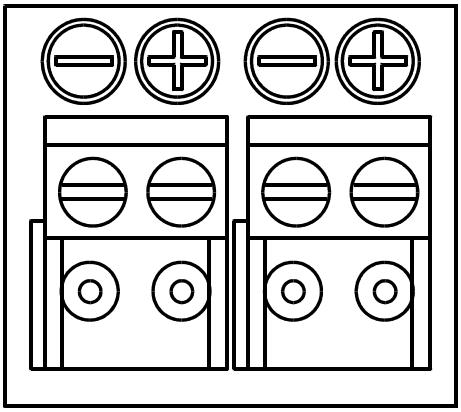
Special points to take note of are:

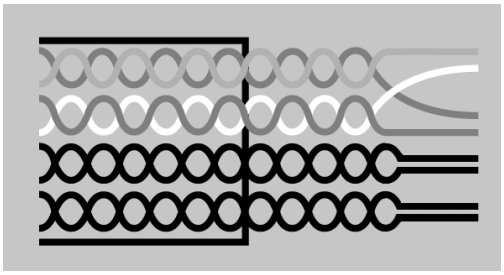
- Do not apply any pressure on the actual Sensor lens itself as this may damage the lens.
- When mounting in suspended ceilings there should be at least 125mm between the lower surface of the tile and the hard surface above.

4.0 C-Bus Network Connection

Installation of the 5753 Series on the C-Bus Network requires connection to the unshielded twisted pair C-Bus Network Cable. Connection should be made using Category 5 data cable, catalogue number 5005C305B.
The C-Bus Network Connection is polarity sensitive, and is clearly marked on the rear of the 5753 Series unit with the terminal cover removed. Two loop-in / loop-out, removable terminal blocks are provided for easy installation and maintenance.

It is the responsibility of the installer to ensure that the unit is wired to meet local electrical and building codes.





Blue + Orange, C-Bus Pos (+)

Blue/White + Orange/White, C-Bus Neg (-)
*Brown + Brown/White, Remote OFF

*Green + Green/White, Remote ON

C-Bus Connection	Cat. 5 Cable Colour	5753 Series
*Remote ON	Green/White	Not Connected
*Remote ON	Green	Not Connected
C-Bus Neg (-)	Orange/White	C-Bus Neg (-)
C-Bus Pos (+)	Blue	C-Bus Pos (+)
C-Bus Neg (-)	Blue/White	C-Bus Neg (-)
C-Bus Pos (+)	Orange	C-Bus Pos (+)
*Remote OFF	Brown/White	Not Connected
*Remote OFF	Brown	Not Connected

* Note: The 5753 Series does not have Remote Override (On/Off) functions, however these connections must be maintained for correct operation of these services across the C-Bus Network.

5.0 C-Bus Power Requirements

The C-Bus 5753 Series PIR Occupancy / Multi Sensor draws 18 mA from the C-Bus Network. Adequate C-Bus Power Supply Units must be installed to support the connected devices. If in doubt, consult the C-Bus Calculator V2.0.0 (or higher) – Network Design Verification Software Utility.

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6.0 Power Surges and Short Circuit Conditions

The mains voltage must be limited to the range specified for any C-Bus Unit which is mains powered. Each unit incorporates transient protection circuitry, however external surge protection devices should be used to enhance system immunity to power surges. It is strongly recommended that overvoltage equipment such as the Clipsal 970 is installed at the switchboard.

7.0 Megger Testing

Megger testing of an electrical installation that has C-Bus Units connected will not cause any damage to C-Bus Units. Since C-Bus Units contain electronic components, the installer should interpret megger readings with due regard to the nature of the circuit connection.

Megger testing must never be performed on the C-Bus data cabling or terminals as it may degrade the performance of the Network.

8.0 Programming and Commissioning

The 5753 Series must be programmed to set a unique identification (Unit Address) and mode of operation on the C-Bus Network. This can be achieved by utilizing the 5753 Series *Learn Mode* capability or by using the C-Bus Installation Software V2.3.0 or higher.

8.1.1 Programming Using Learn Mode (5753L & 5753PEIRL)

The actions listed below must be performed in conjunction with *Learn Mode* programming of output devices and may only be done when *Learn Mode* has been activated.

Note: Either of the two pots on the 5753PEIRL can be adjusted to program the PIR function in Learn Mode.

Action 1	Enter Learn Mode by pressing any toggle switch on a Relay or Dimmer Output Unit for 10 seconds.	**Result 1**	Unit and C-Bus indicators flash alternatively to indicate Learn Mode active.
Action 2	Twist & remove the front surround of the unit and use a screw driver to change the light level setting.	**Result 2**	The orange indicator (for 5753L) or the blue indicator (for 5753PEIRL) behind the Sensor window will flash once.
Action 3	Wait for the indicator to double flash (after 5 seconds) then immediately (within 1 second) turn the light level adjustment back the other way.	**Result 3**	The orange indicator (for 5753L) or the blue indicator (for 5753PEIRL) behind the Sensor window will come on and stay on. The unit is now ready to Learn its time out. (Note: if the indicator stays off, go back to Action 2)
Action 4	Changing the setting again will cause the indicator to begin double flashes.	**Result 4**	Each double flash represents a 5 minute timer duration (so be quick with the screwdriver)
Action 5	Turn the light level adjustment back the other way.	**Result 5**	The indicator will single flash showing that the timer function has been set.
Action 6	Exit Learn Mode by pressing any toggle switch on a Relay or Dimmer Output Unit for 2 seconds.	**Result 6**	C-Bus2 will have *Learned* the relationship and return to normal operation.

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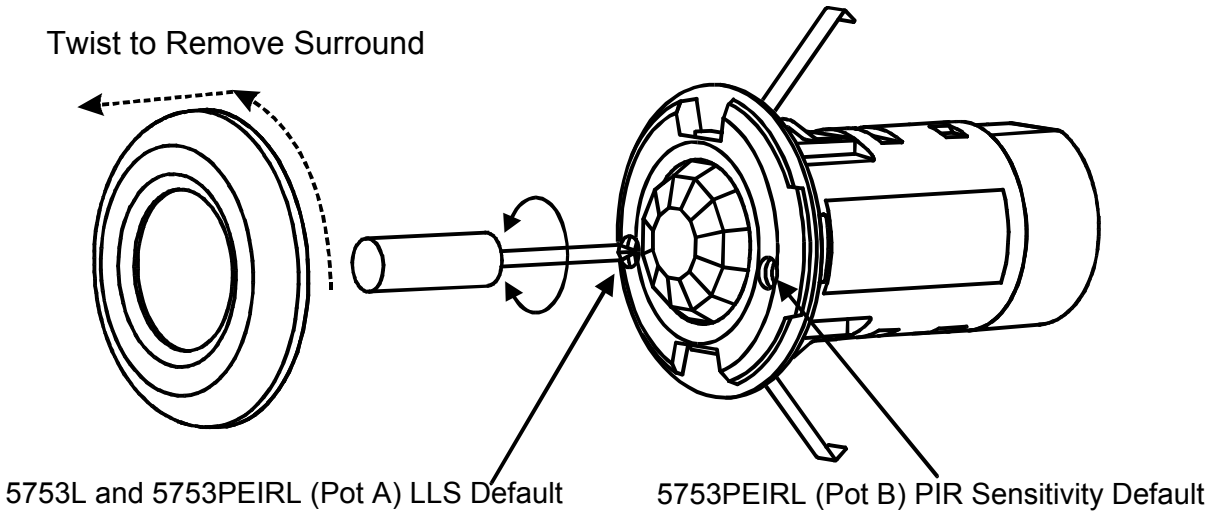
8.1.2 Programming Using Learn Mode with the IR Remote Control (5753PEIRL Only)

The actions listed below must be performed in conjunction with *Learn Mode* programming of output devices and may only be done when *Learn Mode* has been activated.

Action 1	Enter Learn Mode by pressing any toggle switch on a Relay or Dimmer Output Unit for 10 seconds.	**Result 1**	Unit and C-Bus indicators flash alternatively to indicate Learn Mode active.
Action 2 Toggle / Dimmer function	Press a short duration (under 400ms) on the IR remote control associated key with the learn output terminal.	**Result 2**	The orange indicator behind the Sensor window will come on.
Action 3 Timer function	Press and hold the IR remote control associated key with the learn output terminal.	**Result 3**	The orange indicator behind the Sensor window will come on and begin a double flash at 5 second intervals.
Action 4	While holding the key on the IR remote control.	**Result 4**	Each double flash represents a 5 minute timer duration.
Action 5	Releasing the key on the IR remote control.	**Result 5**	The indicator will single flash showing that the timer function has been set.
Action 6	Exit Learn Mode by pressing any toggle switch on a Relay or Dimmer Output Unit for 2 seconds.	**Result 6**	C-Bus2 will have *Learned* the relationship and return to normal operation.



8.2 Setting Up To "Walk Test" The Detection Area

1.	Connect Unit to C-Bus Network and allow at least 2 minutes for the Unit to stabilize.
2.	Twist & remove the front surround and use a screw driver to set the "light level sensor" adjustment fully anti-clockwise. Set the "PIR Sensitivity" and adjust fully clockwise for 5753PEIRL (Pot B default) Note: Do not force the adjustment screw beyond its range of travel.
3.	Using the C-Bus installation Software, set up the Unit to control a load. Set the time out interval to 1 second.
4.	Walk slowly around the room, through doorways etc to confirm the load is activated from within the desired area.
5.	Using the C-Bus Installation Software or Learn Mode, set the time out interval to the desired duration.

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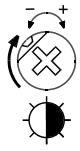
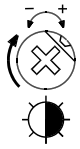
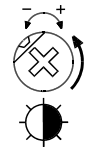
8.3 Adjusting the Light Level Sensor

The light level sensor has to be adjusted to ensure that the sensor triggers the programmed load at the correct light level. The light level adjusment is accessible via the removal of the front surround.

Note: 5753PEIRL Light Level Sensor is Pot A by default.

1.	Rotate clockwise to avoid activation of load when natural light is adequate.	
2.	To activate the load at dusk, set adjustment to this area.	
3.	To activate the load at night, set adjustment to this area.	
4.	To have the load activated day and night, set in this position	

9.0 Troubleshooting Guide

Problem	Possible Cause	Possible Action
1. Lights turns on for no apparent reason	Momentary power failure	No action, Unit will reset after time out
	Unseen target	Check for animal (dogs cats etc)
	Extreme draughts of hot and cold air	Check doors, windows or air-conditioning outlets
2. Light turns on during daylight	Wrong setting on light adjustment	Reset according to commissioning instructions
3. Lights not on in dim or dark conditions	C-Bus installation incorrect	Refer C-Bus installation procedure manual
	See #2 above	Reset according to commissioning instructions
	Light globe “blown”	Replace light globe
4. Light remains on permanently	Unit not installed correctly	Refer to C-Bus installation procedure manual
	Moving infrared source being detected	Blank off viewing window; light should turn off after time out. If light still remains on, call installer
	Note: Do not mount next to objects which can change temperature rapidly e.g. air-conditioning vents, heater flues, moving water i.e. fountains, sprinklers	

10.0 Important Warning

The use of any non C-Bus Software in conjunction with the hardware installation without the written consent of Clipsal Integrated Systems may void any warranties applicable to the hardware.

11.0 Standards Complied

DECLARATIONS OF CONFORMITY

European Directives and Standards
The 5753 Series models comply with the following:

European Council Directive		Standard	Title
89/336/EEC	EMC Directive	EN 55014-1; CISPR 14-1	RFI Emissions Standard
		EN61000-3-2;IEC61000-3-2	RFI Emissions Standard
		EN60669-2-1; IEC 60669-2-1	RFI Emissions Standard
		BS/EN 61000-4-2	Immunity to ESD
		BS/EN 61000-4-3	Immunity to RFI
		BS/EN 61000-4-4	Immunity to EFT
		BS/EN 61000-4-5	Immunity to Surge Voltages
		BS/EN 61000-4-11	Immunity to Voltage Dips & Interruptions

Australian/New Zealand EMC Framework and Standards
The 5753 Series models comply with the following:

C-Tick Framework	Standard	Title
EMC	AS1044; IEC/CISPR14-1	RFI Emissions Standard
	EN61000-3-2;IEC61000-3-2	RFI Emissions Standard
	EN60669-2-1; IEC 60669-2-1	RFI Emissions Standard
	BS/EN 61000-4-2	Immunity to ESD
	BS/EN 61000-4-3	Immunity to RFI
	BS/EN 61000-4-4	Immunity to EFT
	BS/EN 61000-4-5	Immunity to Surge Voltages
	BS/EN 61000-4-11	Immunity to Voltage Dips & Interruptions

U.S. FCC Regulations
The 5753 Series models comply with the following:

Standards/Regulations	Title
FCC	Part 15, Class B Digital Device for Home or Office Use

Supplemental Information
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation

Class B Product

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encourage to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning: Any changes or modifications not expressively approved by Clipsal Integrated Systems could void the user's authority to operate this equipment.

12.0 Limited Warranty

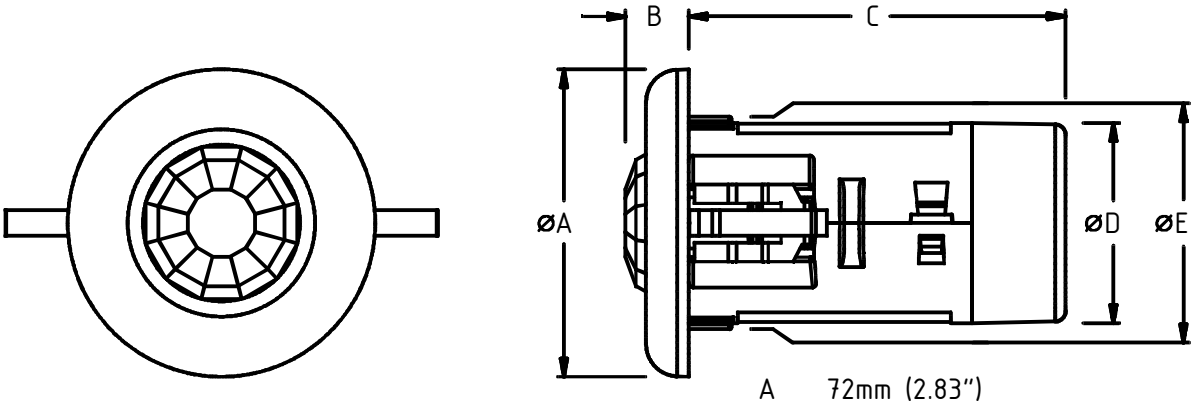
The Clipsal 5753 Series carries a two year warranty against manufacturing defects (refer to attached Warranty Statement).

13.0 Product Specifications

Electrical Specifications

Catalogue No.	5753L	5753PEIRL
Operating Voltage	15-36V DC	
Operating Current	18mA	
Operating Temperature	0° to 45°C	
Warm Up Period	Up to 2 minutes for Sensor to stabilise	
PIR Rated Detection Field	Typically 15 metres (circular) diameter at 2.4 metres	
IR Receiver Rated Detection Field (5753PEIRL only)	N/A	Typically 5 metres x 5 metres diameter at height of 2.4 metres
Timer Delay Range	0 sec. to 18hrs:12min:15 sec. (Programmable down to 1 sec intervals via software or 5 min intervals via *Learn Mode*)	
Light Level Inhibit Threshold	Continuous from 1 Lux to full sunlight	
Mounting Surface	Ceiling	
Mounting Height for Rated Detection Field	2.4 metres	
Maximum Mounting Height	3.7 metres	
Minimum Ceiling Thickness	10mm	
Dimensions – Overall	72mm (W) x 103mm (L)	
Weight	82g	85g

Mechanical Specifications



A	72mm (2.83")
B	15mm (0.59")
C	88mm (3.46")
D	47mm (1.85")
E	50mm (1.97")

No user serviceable parts inside.

Further Information

For further information about programming and configuring C-Bus 360° PIR Occupancy / Multi Sensor Input Units, please consult the documentation supplied with the C-Bus Installation Software (Portable Document File [PDF] and requires Adobe Acrobat Reader v4.0 or higher to view or print):

- **C-Bus 360° PIR Occupancy / Multi Sensor Installation Instructions**
  The printed booklet you are reading now contains detailed information for the installer regarding unit mounting, wiring, and C-Bus Network requirements. C-Bus 360° PIR Occupancy Sensor features and specifications are also presented.

- **C-Bus Learn Mode Operations and Programming Guide**
  The C-Bus Learn Mode Operations and Programming Guide presents a comprehensive guide to C-Bus Learn Mode and gives full details of this mode.

- **Technical Support and Troubleshooting**
  For further assistance in using C-Bus 360° PIR Occupancy / Multi Sensor, please consult your nearest Clipsal Integrated Systems Sales Representative or Technical Support Officer.

Technical Support Hotline	1 300 722 247 (Australia Only) 0 800 888 219 (New Zealand Only)
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Clipsal Integrated Systems Website	clipsal.com/cis

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