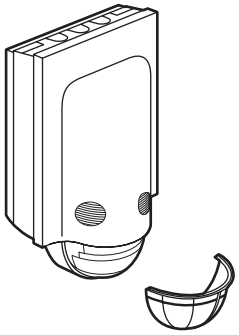
Lighting management sensor - PIR/US

Cat. No: 0 489 16



CONTENTS **Page**

1. USE

This device allows a light source to be controlled automatically through the detection of movement in the surveillance zone.
It can be installed in work areas (offices, classrooms, meeting rooms, open spaces).
It has a 2A volt-free contact output for controlling heating, ventilation or air conditioning based on occupancy.
Motion sensor with 180° detection angle.
Detection type: infrared (PIR) and ultrasonic (US)
Mounting type: wall

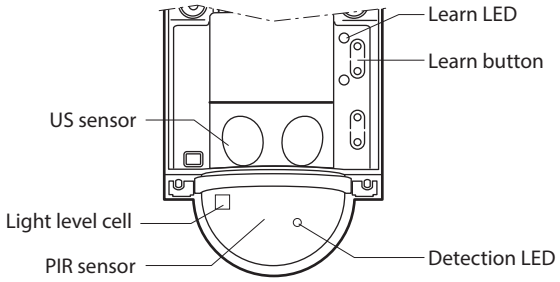
2. TECHNICAL CHARACTERISTICS

Voltage: 100 - 240 V~
Frequency: 50/60 Hz
No-load power consumption: 0.6 W
Output via normally open contact connected to the phase
Wiring: 2 x 2.5 mm²
Number of terminals: 6
Terminal type: screw
Stripped length: 8 mm
Drilling diameter: 67 mm with flush-mounting box
Weight: 160 g
Impact resistance: IK04
Penetration by solid and liquid matter: IP42
Operating temperature: -5 °C to +45 °C
Storage temperature: -20 °C to +70 °C

2. TECHNICAL CHARACTERISTICS (continued)

Products qualified for 40,000 operations
Zero current breaking: in order to limit the effect of the current draw on the cut-off relay by the fluorescent loads in particular, this sensor cuts out at zero current. Switching occurs when the voltage reaches 0 which helps to prolong the life of the power supplies and the sensor.

Cover removed



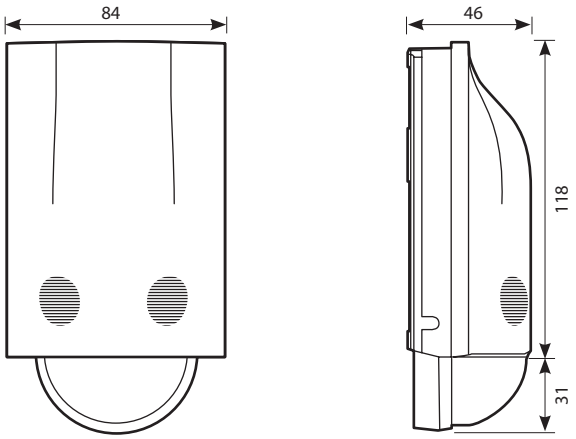
	①		②		③		④		⑤		⑥		⑦		⑧	
230 V~	2000 W	8.5 A	1000 VA	4.3 A	1000 VA	4.3 A	10x(2x36 W)	4.3 A	250 W	1 A	250 W	1 A	250 W	1 A	500 VA	2.1 A
110 V~	1000 W	8.5 A	500 VA	4.3 A	500 VA	4.3 A	5x(2x36 W)	4.3 A	125 W	1 A	125 W	1 A	125 W	1 A	250 VA	

1 - Halogen bulbs
2 - ELV halogen, compact fluorescent and fluorescent bulbs with separate electronic ballast
3 - ELV halogen, compact fluorescent and fluorescent bulbs with separate ferromagnetic ballast
4 - Fluorescent tubes
5 - Compact fluorescent bulbs with built-in electronic ballast
6 - Compact fluorescent bulbs with built-in ferromagnetic ballast
7 - LED bulbs
8 - Contactor
9 - Motor

	⑨	⑧
	Ⓜ	
230 V~	500 VA	2.1 A max.
110 V~	250 VA	I max. ≤ 2.1 A
U ≤ 30 V⎓	2.1 A max.	

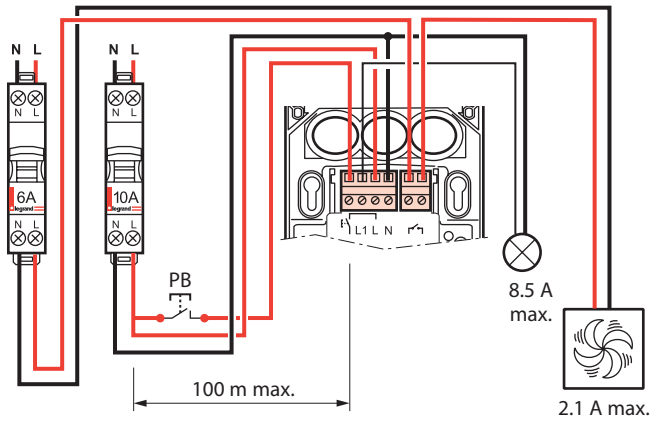
3. DIMENSIONS

With protective cover

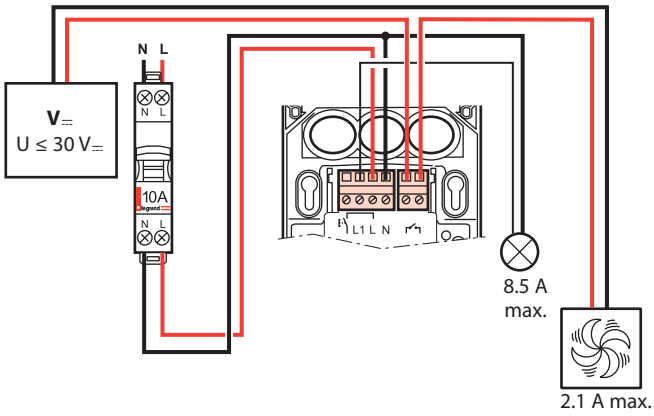


4. CONNECTION

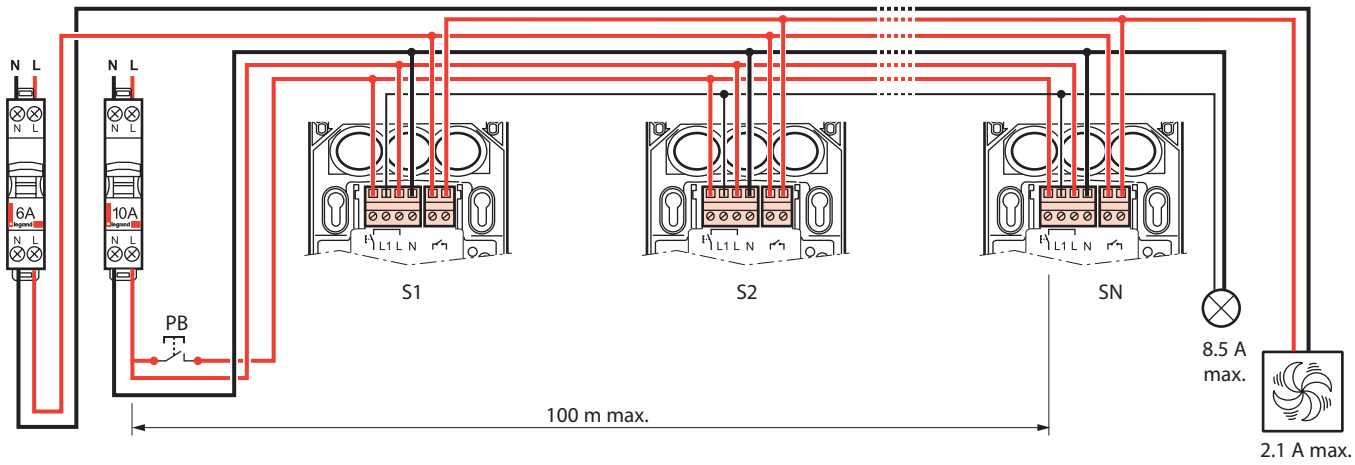
■ 4.1 Wiring with auxiliary control:



■ 4.2 Wiring without auxiliary control:

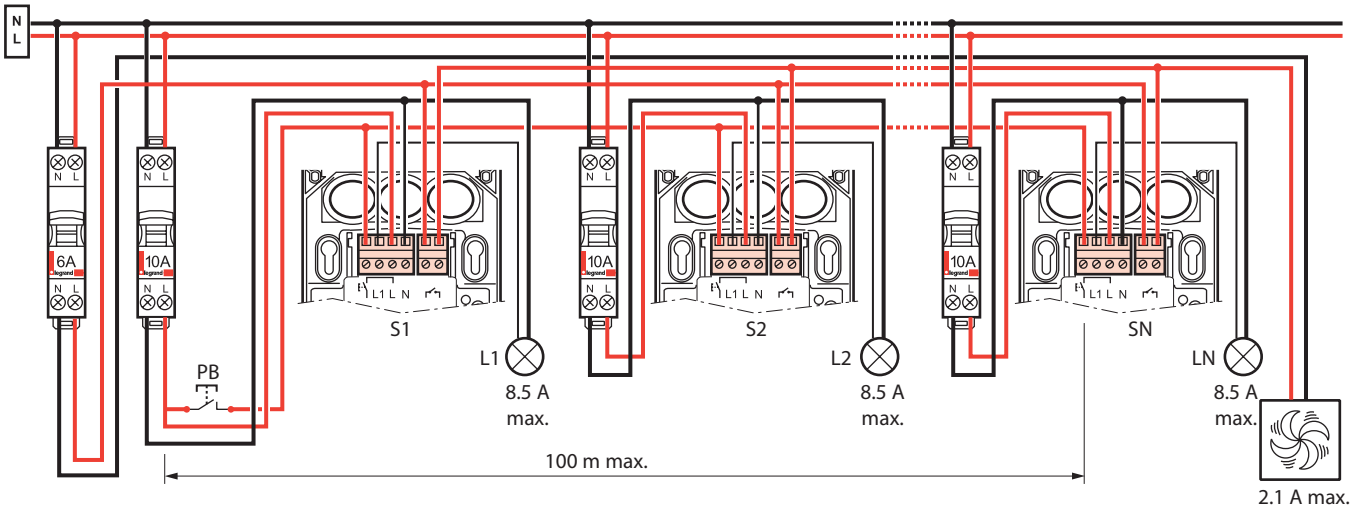


■ 4.3 Wiring for a single load connected in parallel

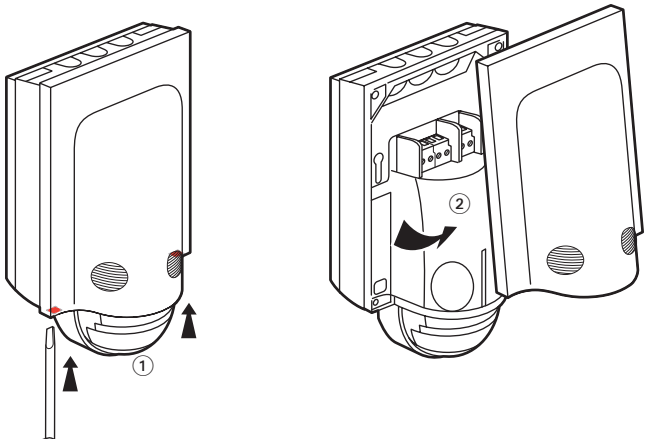


4. CONNECTION (continued)

4.4 Wiring for several loads connected in parallel

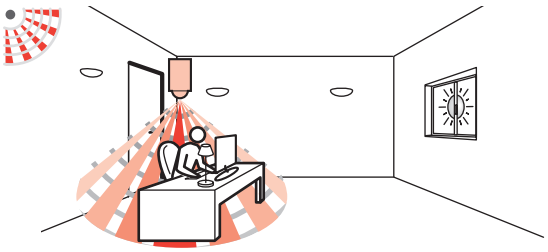


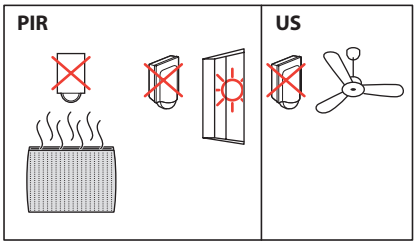
5. DISMANTLING



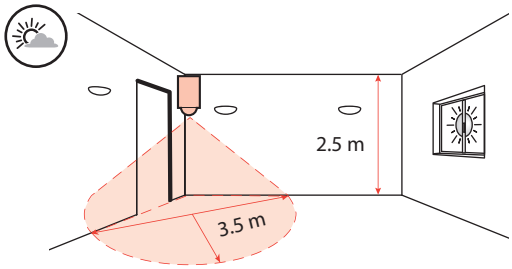
6. INSTALLATION

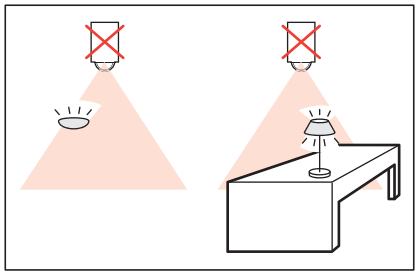
6.1 Sensor positioning





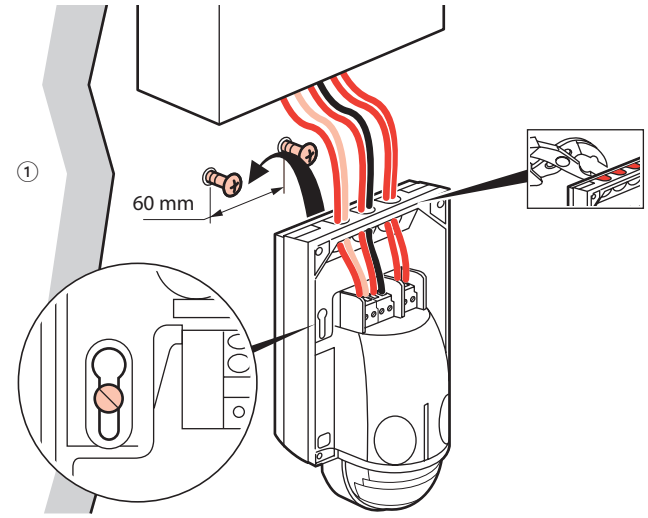
6.2 Recommended light exposure

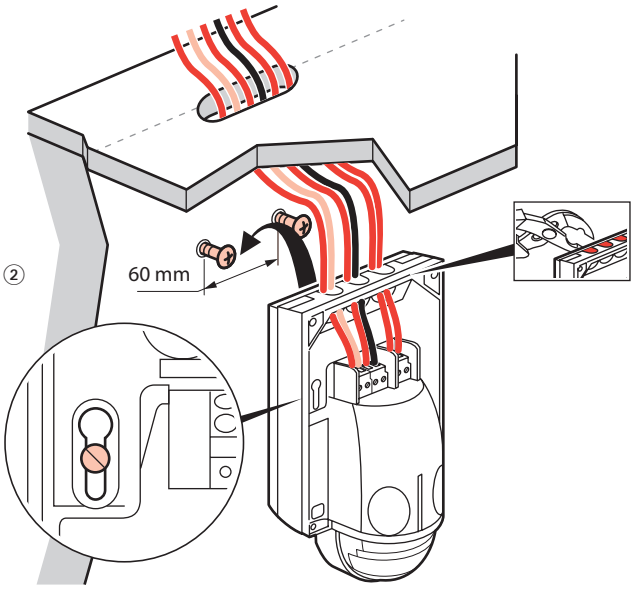


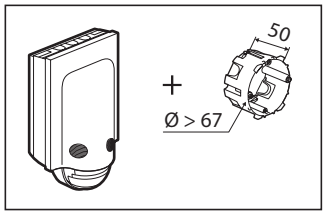


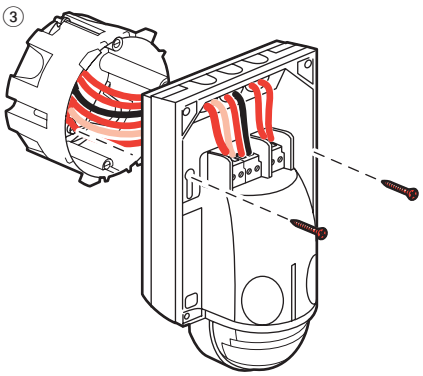
6. INSTALLATION (continued)

6.3 Positioning



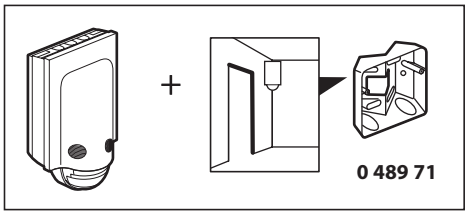


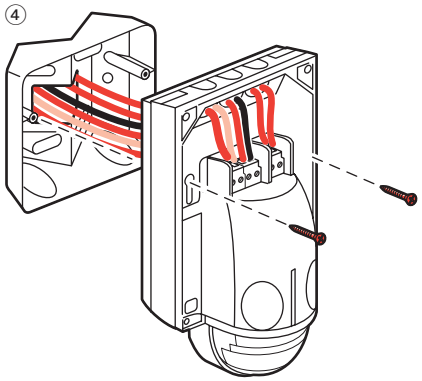




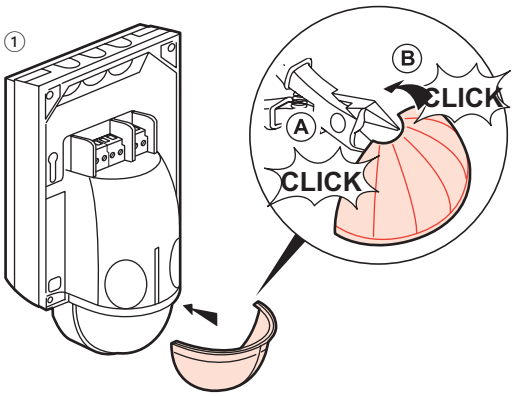
6. INSTALLATION (continued)

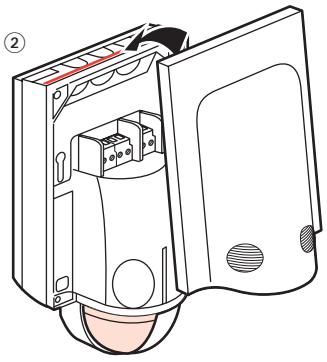
6.3 Positioning (continued)

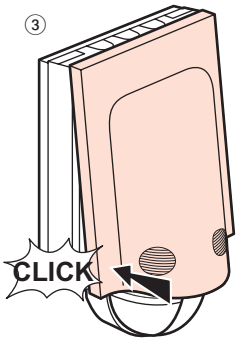




6.4 Choice of detection zone







7. OPERATION

Manual ON/Automatic OFF mode:
Pressing the auxiliary control allows the load to be switched on or off manually. If the control is not pressed, the sensor will cut off the load at the end of the time delay or when the light level threshold has been reached.

Auto ON/OFF mode:
The load will be switched on and off automatically.

Option: It is possible to control the sensor by infrared remote control using Cat. Nos. 0 882 20/31.

■ 7.1 More than one sensor and more than one load

The products can be synchronised in two steps:

- one long press (> 1s) - all the sensors (S) change to ON
- one short press - all the sensors (S) invert their state from OFF to ON or ON to OFF

L1 OFF **L2 OFF** **Ln OFF**	S1 OFF S2 OFF Sn OFF	PB < 1 s	**L1 ON** **L2 ON** **Ln ON**	S1 ON S2 ON Sn ON
L1 ON **L2 ON** **Ln ON**	S1 ON S2 ON Sn ON	PB < 1 s	**L1 OFF** **L2 OFF** **Ln OFF**	S1 OFF S2 OFF Sn OFF
L1 ON **L2 OFF** **Ln OFF**	S1 ON S2 OFF Sn OFF	PB < 1 s	**L1 OFF** **L2 ON** **Ln ON**	S1 OFF S2 ON Sn ON
L1 ON **L2 OFF** **Ln OFF**	S1 ON S2 OFF Sn OFF	PB > 1 s + < 1 s	**L1 OFF** **L2 OFF** **Ln OFF**	S1 OFF S2 OFF Sn OFF
L1 ON **L2 OFF** **Ln OFF**	S1 ON S2 OFF Sn OFF	PB > 1 s	**L1 ON** **L2 ON** **Ln ON**	S1 ON S2 ON Sn ON

7. OPERATION (continued)

■ 7.2 Several sensors connected to a single load

L OFF	S1 OFF S2 OFF Sn OFF	PB < 1 s	**L ON**	S1 ON S2 ON Sn ON
L ON	S1 ON S2 ON Sn ON	PB < 1 s	**L OFF**	S1 OFF S2 OFF Sn OFF
L ON	S1 ON S2 OFF Sn OFF	PB < 1 s	**L ON**	S1 OFF S2 ON Sn ON
L ON	S1 ON S2 OFF Sn OFF	PB > 1 s + < 1 s	**L OFF**	S1 OFF S2 OFF Sn OFF
L ON	S1 ON S2 OFF Sn OFF	PB > 1 s	**L ON**	S1 ON S2 ON Sn ON

8. SETTINGS

8.1 Detection parameters

Sensor parameter		Default value	Modifiable parameters	Configuration tools	
				0 882 30	0 882 35
Time delay		15 min	3,5,10,15,20 min	–	✓
			5s - 59 min 59s	✓	–
Sensitivity		PIR (very high) / US (high)	Low, medium, high, very high	✓	✓
Modes	Auto on/Auto off	Inactive	Activate/ Deactivate	✓	✓
	Walk-through mode	Active	Activate/ Deactivate	✓	✓
	Manual on/Auto off	Inactive	Activate/ Deactivate	✓	✓
Detection system	Initial	PIR and US	PIR, US, PIR or US, PIR and US	✓	–
	Maintain	PIR and US	PIR, US, PIR or US, PIR and US	✓	–
	Restart	PIR or US	PIR and/or US, PIR, US, Deactivate	✓	–
Alarm		Inactive	Activate/ Deactivate	✓	–

Time delay: Length of time the load is on after detection occurs

Sensitivity: Detection range setting

Modes:

Auto on/Auto off mode:
The lighting switches on automatically:
- When movement is detected and there is insufficient natural light.

The lighting switches off automatically:
- If no movement is detected at the end of the set time delay.
- Or if there is a sufficient level of natural light (regulation function activated).

The lighting will switch on again automatically if another movement is detected and there is insufficient light.

Walk-through mode:
- If no movement is detected in the 20 seconds following an initial detection, the device will cut off the load after 3 minutes.
- If another movement is detected in the 3 minutes following initial detection, the device will cut off the load at the end of the set time delay.

Manual on/Auto off mode:
The lighting is switched on manually and switched off automatically:
- If no movement is detected at the end of the set time delay.

After switch-off, if any movement is detected within a 30-second period, the lighting switches on automatically (provided the Restart function has been activated).
For any period of inactivity longer than 30 seconds, the lighting is switched on manually.

Detection system:

Initial detection: The load is switched on as soon as the first detection occurs if the natural light level is below the light level threshold.

Maintain: The load remains active if another movement is detected.

Restart: In manual mode. After switch-off, if any movement is detected within a 30-second period, the lighting switches on automatically.
For any period of inactivity longer than 30 seconds, the lighting must be switched on manually.
Possible in Manual on/Auto off mode only.

Alarm: an audible signal is emitted before switch-off (1 minute before, then 30 seconds, then 10 seconds).

8. SETTINGS (continued)

8.2 Light parameters

Sensor parameter		Default value	Modifiable parameters	Configuration tools	
				0 882 30	0 882 35
Light level threshold		300 lux	20, 100, 300, 500, 1000 lux	–	✓
			5 - 1275 lux	✓	–
Advanced mode	Calibration	–	0 - 99995 lux	✓	–
	Regulation	Active	Activate/ Deactivate	✓	–
	Light contribution	Auto	Auto - 1275 lux	✓	–

Light level threshold: Value at which the load switches on if the natural light level is less than the setting.

Eye function: Value 0 (eye on configuration tool 0 882 30) is used to save the ambient light level in the room as the light level threshold.

Advanced mode:

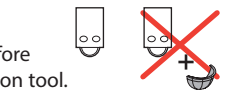
Calibration: The ambient light level measured with a luxmeter must then be transmitted to the sensor.

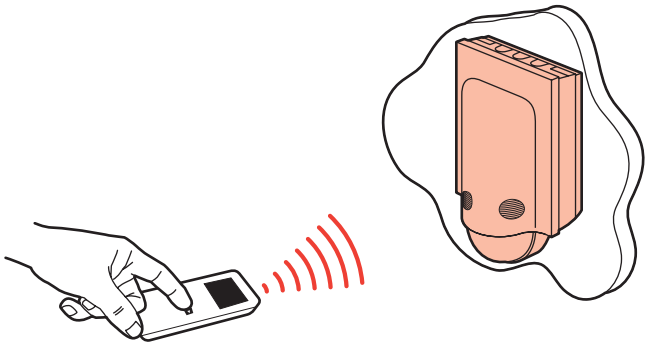
Regulation: Automatic switch-off of the load 10 minutes after the light level threshold is exceeded with an additional safety threshold (to avoid lights switching off at the wrong moment).

Light contribution: Quantity of additional lux brought in by the load being switched on.
When the light contribution parameter is set to "Auto" (value 0) on configuration tool Cat. No. 0 882 30, the sensor automatically calculates the light contribution.

8.3 Modifying the parameters using the configuration tools

Warning:
Make sure blanking plate is removed before modifying parameters with a configuration tool.





- 0 882 35: Simplified configuration tool
- 0 882 30: Advanced configuration tool

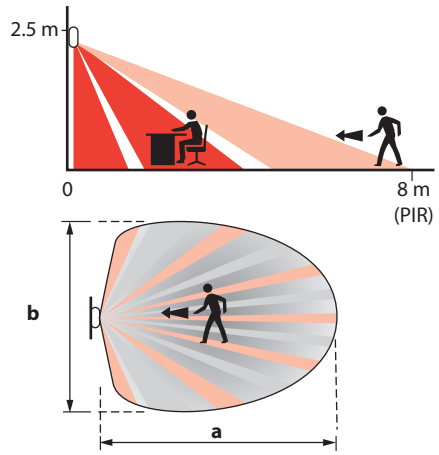
When the sensor receives an IR command via the configuration tool it emits a beep to confirm the modification.
For more information about setting parameters, refer to the configuration tool (Cat. No. 0 882 30) data sheet.

- Restore factory settings:
1st press: Short press on LEARN; the LED flashes slowly.
2nd press: Press LEARN for 10 seconds until the LED flashes quickly.

9. PERFORMANCE

■ 9.1 PIR performance

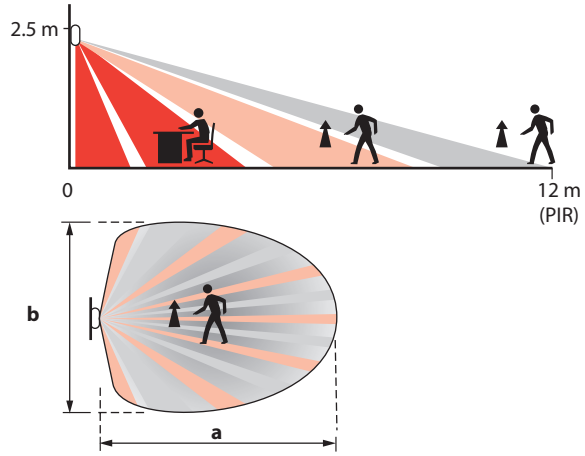
Radial movement



Height 2.5 m

Sensitivity Low (25%)		Sensitivity Medium (50%)		Sensitivity High (75%)		Sensitivity Very high (100%)	
a (m)	b (m)	a (m)	b (m)	a (m)	b (m)	a (m)	b (m)
5	6	6	6	7	6	8	6

Tangential movement



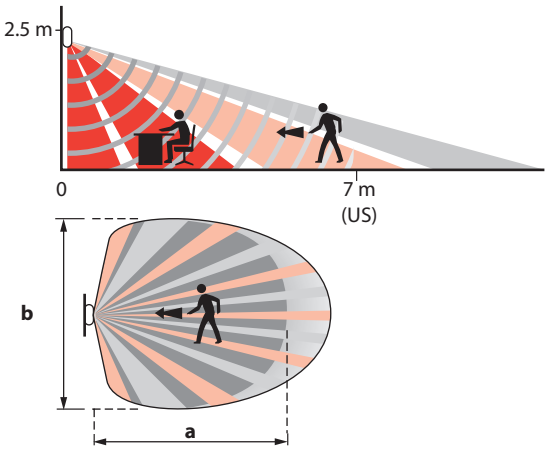
Height 2.5 m

Sensitivity Low (25%)		Sensitivity Medium (50%)		Sensitivity High (75%)		Sensitivity Very high (100%)	
a (m)	b (m)	a (m)	b (m)	a (m)	b (m)	a (m)	b (m)
10	6	11	6	11	6	12	6

9. PERFORMANCE (continued)

■ 9.2 US performance

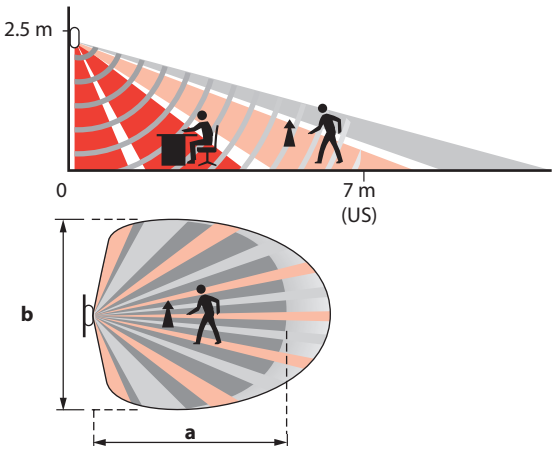
Radial movement



Height 2.5 m

Sensitivity Low (25%)		Sensitivity Medium (50%)		Sensitivity High (75%)		Sensitivity Very high (100%)	
a (m)	b (m)	a (m)	b (m)	a (m)	b (m)	a (m)	b (m)
4	5	5	6	6	6	7	6

Tangential movement



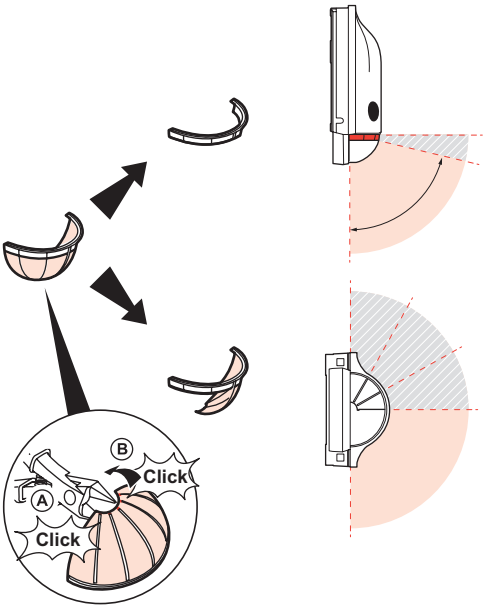
Note:

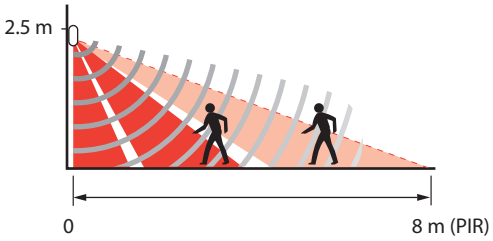
All technical information is available online at

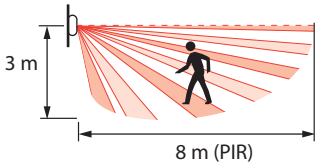
www.legrandoc.com

9. PERFORMANCE (continued)

9. 3 Performance with blanking plate (PIR)







10. CARE

Keep the lens clean.
Clean the surface with a cloth.
Do not use acetone, tar-removing cleaning agents or trichloroethylene.
Resistant to the following products: - Hexane (EN 60669-1)
- Methylated spirit
- Soapy water
- Diluted ammonia
- Bleach diluted to 10%
- Window-cleaning products

Caution:

Always test before using other special cleaning products.

11. STANDARDS

Directive: CE

Installation standards: NFC 15-100

Product standard: IEC 60669-2-1

Environmental standards:
- European Directive 2002/96/EC:
  WEEE (Waste Electrical and Electronic Equipment)
- European Directive 2002/95/EC:
  RoHS (Restriction of Hazardous Substances)
- Regulations: Public buildings
  Workplace buildings
  High-rise buildings

12. TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Lighting stays on when there is no-one present	Sources of interference such as draughts, vibration or radiators may cause nuisance tripping	1- Reduce the sensitivity level 2- If the interference continues: using the configuration tool, go into the Detection system parameters, select Maintain and then choose PIR and US 3- If the interference still continues, move the sensor away from sources of interference
Lighting does not switch off during the day when there is an adequate level of natural light	Regulation function not active Light level threshold set too high Light source too bright	Activate the regulation function Reduce the light level threshold Check that the sensor is positioned correctly in relation to the window Decrease the power of the luminaires
Lighting switches off when there are people present and the natural light level is not adequate (too dark)	Time delay too short Detection sensitivity too low Light level threshold too low	Increase the time delay 10 to 1 minutes is advised for work areas (10 minutes is recommended) Increase the sensitivity Move the sensor closer to the work area Increase the threshold