

Description

Control and command device fitted with lighting and presence sensor for lighting management. The device is rated IP20 and can be installed indoors as follows: flush-mounted on the ceiling using the claws provided or a box for plasterboard or masonry ceilings, or as a ceiling fixture using the surface mounting box.

The Switch Sensor is supplied with:

- push-in terminals for wiring of the power supply (100-240 Vac) and the load (lighting equipment) and push-button for ON-OFF load management;
- lighting sensor;
- passive infrared PIR sensor;
- US ultrasound sensor;
- two-way IR receiver for adjustment of the operating parameters by means of the remote control BMS04001 or BMS04003 (see page 2 for further details).

PIR movement sensor:

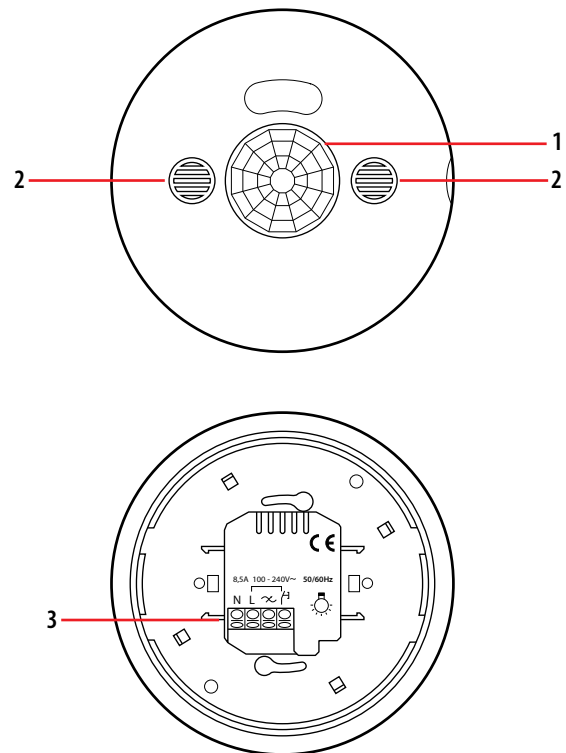
Detects movement in the environment by measuring the difference between ambient temperature and that of a human body in movement.

US sensor:

Detects human presence in the environment through the emission of ultrasounds, detecting any return echo generated by human presence within the area of coverage. Used in environments where obstacles are present.

Lighting sensor:

Detects the lighting level of the environment and activates/deactivates the load according to whether the threshold lighting value set on the sensor (can be modified by the user) is lower/higher than the value detected. To prevent continual activation/deactivation a tolerance of the threshold values is provided for.



Technical Data

Power supply:	100 – 240 Vac @ 50/60 Hz
Functions:	Auto/Eco/Walkthrough
Functioning:	ON-OFF
Operating temperature:	-5°C to +45°C
Sensor type:	PIR – US
Protection class:	IP20
Sensitivity:	5 – 1275 lux
Time delay setting:	5 sec – 60 min
Method of adjustment:	IR configuration tool
Connection type:	push-in terminals
Cable cross-section:	2.5 mm ²

Legend

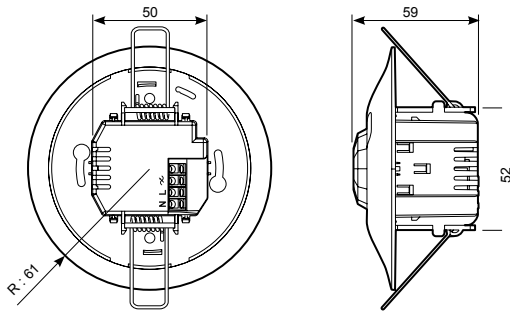
1. Passive infrared PIR movement sensor
2. Lighting sensor
3. Push-in terminals

Absorbed power piloted loads:

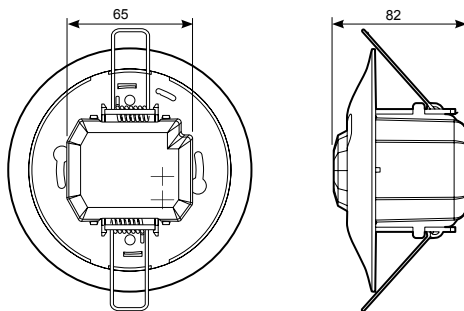
	Incandescent and halogen light bulbs		Light bulb with ferromagnetic transformer		Linear fluorescent light bulb		Compact fluorescent light bulb		Light bulb with electronic transformer		LED light bulb		Relay
240 Vac	2000 W	8.5 A	1000 VA	4.3 A	10x(2x36 W)	4.3 A	500 VA	2.1 A	1000 VA	4.3 A	500 V	2.1 A	I max ≤ 2 A
100 Vac	1000 W	8.5 A	500 VA	4.3 A	5x(2x36 W)	4.3 A	250 VA	2.1 A	500 VA	4.3 A	250 V	2.1 A	

Dimensions

Without cover when installed in flush-mounting box

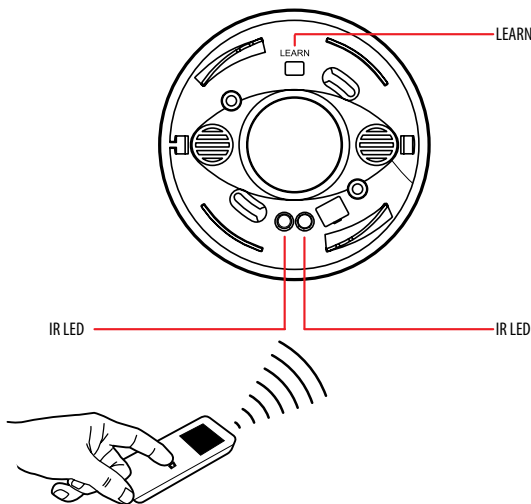


With cover when installed without flush-mounting box



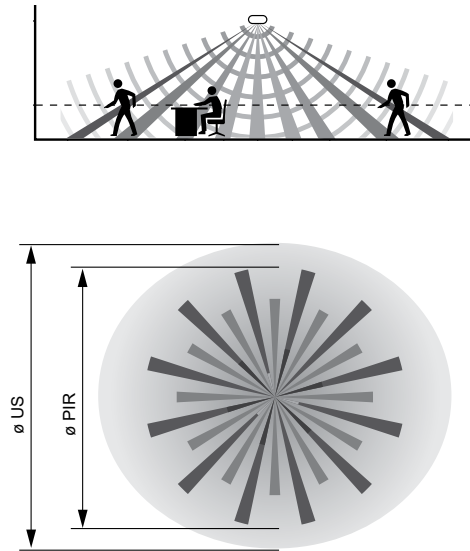
Settings

The Switch Sensor is fitted with a two-way IR receiver for adjustment of the operating parameters by means of the configuration tool BMSO4001 or BMSO4003. Using the two-way IR receiver (BMSO4001) with display, it is possible to acquire the Switch Sensor parameters and memorise a set of adjustments to be applied on several devices.



Area of coverage

Height



-PIR detection

Height (m)		Low sensitivity (25%)		Mean sensitivity (50%)	
		Ø (m)	Surface area (m ²)	Ø (m)	Surface area (m ²)
2.5	4	15	6	25	
3	5.5	25	6.5	35	
4	6.5	35	7.5	45	
5	6	30	10.5	90	
6	4	15	5.5	25	

Height (m)		High sensitivity (75%)		Maximum sensitivity (100%)	
		Ø (m)	Surface area (m ²)	Ø (m)	Surface area (m ²)
2.5	6.5	30	8	50	
3	8.5	60	11.5	100	
4	12.5	125	14	155	
5	12	115	16.5	215	
6	8.5	60	12.5	125	

-US detection

Height (m)		Low sensitivity (25%)		Mean sensitivity (50%)	
		Ø (m)	Surface area (m ²)	Ø (m)	Surface area (m ²)
2.5	4	15	4	15	
3	6	30	6	30	
4	6	30	6	30	
5	6	30	6	30	
6	0	0	6	30	

Height (m)		High sensitivity (75%)		Maximum sensitivity (100%)	
		Ø (m)	Surface area (m ²)	Ø (m)	Surface area (m ²)
2.5	6	30	11	95	
3	8	50	13	150	
4	10	80	13	150	
5	10	80	13	130	
6	10	80	13	130	

Settings

Sensor parameters		Default values	Possible settings	Configuration tool	
				BMSO4001	BMSO4003
Time delay		15 min	3, 5, 10, 15, 20 min 5 sec - 59 min 59 s	- ✓	✓ -
Sensitivity		PIR (maximum)	Low, medium, high, maximum	✓	✓
Lighting threshold		300 lux	20, 100, 300, 500, 1000 lux 5 - 1275 lux	- ✓	✓ -
Operating mode	Auto	Not activated	Activated/Deactivated	✓	✓
	Walkthrough	Activated	Activated/Deactivated	✓	✓
	Eco	Not activated	Activated/Deactivated	✓	✓
Detection diagram	Initial	PIR	Non modifiable	✓	-
	Maintenance	PIR	Non modifiable	✓	-
	Retrigger	PIR	PIR and/or US, PIR, US, Deactivated	✓	-
Alarm		Not activated	Activated/Deactivated	✓	-
Advanced mode	Calibration	-	0 - 99995 lux	✓	-
	Adjustment	Activated	Activated/Deactivated	✓	-
	Lighting contribution	Auto	Auto - 1275 lux	✓	-

Time delay:

Interval of time elapsing from the moment when a sensor does not detect a presence, to deactivation of the load.

The interval recommences every time the sensor detects a presence.

Sensitivity:

Adjustment of the sensitivity of the technologies used in the detection.

Lighting threshold:

Lighting value below which the sensor activates the load and above which it deactivates it.

Eye function:

Value 0 (eye on configuration tool BMSO4001), function enabling registration in the sensor of the general lighting level present in a given moment, and its use as a lighting threshold.

Operating mode**Auto:**

The load is automatically activated:

- if the presence of persons is detected, if the natural lighting is insufficient.

The load is automatically deactivated:

- if no presence is detected at the end of the time delay + stand-by time set.

- or if the natural lighting is sufficient (adjustment activated).

Each new detection causes automatic activation if there is an insufficient lighting level.

Walkthrough:

If a presence is detected for a period of less than 20s the sensor reduces the time delay set to 3 minutes. If the time delay set is already less than 3 minutes, it remains as is.

Eco:

The load is activated manually while deactivation is automatic:

- if no presence is detected at the end of the time delay set.

Following deactivation of the load, if a presence is detected within 30s, the load is reactivated automatically (retrigger function activated). At the end of this interval of time the load must be reactivated manually.

Detection diagram

Set of technologies used to perform detection.

Initial: set of technologies used for the first detection.

Maintenance: set of technologies used after the first detection.

Retrigger:

Set of technologies used to perform the Retrigger function.

After deactivation, any new detection within 30 seconds causes automatic reactivation of the cycle. At the end of 30 seconds the load must be reactivated manually.

Available in Eco mode only.

Alarm:

Before deactivation of the load the sensor emits a warning sound.

Intervals: 1 minute, 30 seconds, 10 seconds.

Advanced mode**Calibration:**

To calibrate the sensor the lighting level present should be measured with a luxmeter and the value sent back to the sensor using the settings remote control (BMSO4001).

Calibration method:

Step 1: with artificial light only.

Activate the load at maximum intensity and close the shutters (if not possible wait for the sun to go down).

Measure the lighting level and send it to the sensor via the remote control.

Step 2: with natural light only.

Deactivate the load and open the shutters.

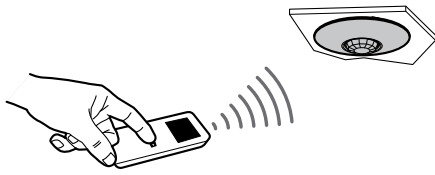
Adjustment:

Function enabling the sensor to deactivate the load after 10 minutes (plus a further safety threshold, to prevent unwanted turning off) in which the lighting level exceeds the lighting threshold despite a presence being detected.

Lighting contribution: amount of supplementary lighting produced by activation of the load.

When the lighting contribution parameter is on "auto" the sensor automatically calculates the lighting contribution.

Changing the parameters with the configuration tool



- BMSO4003: simplified configuration tool
- BMSO4001: advanced configuration tool

When the sensor receives an IR command via the configuration tool it emits a beep to confirm acquisition of the change.

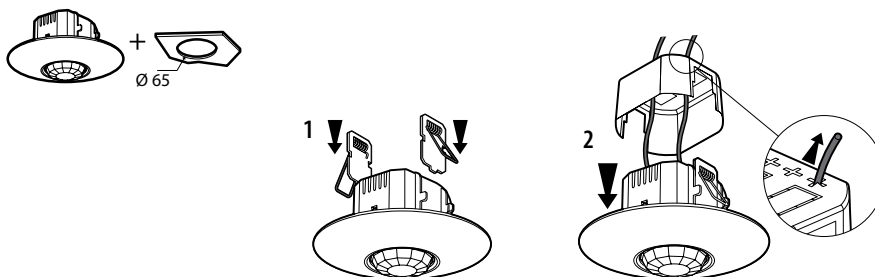
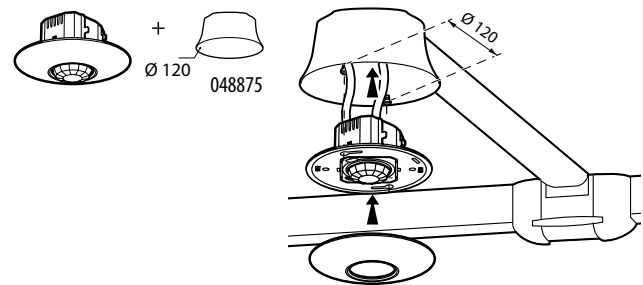
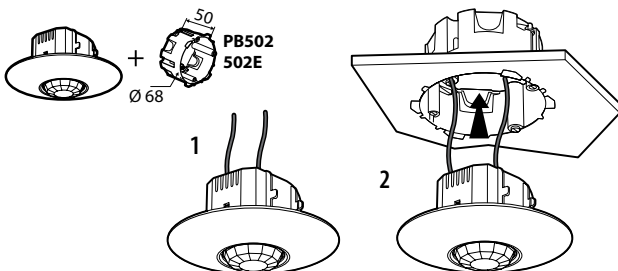
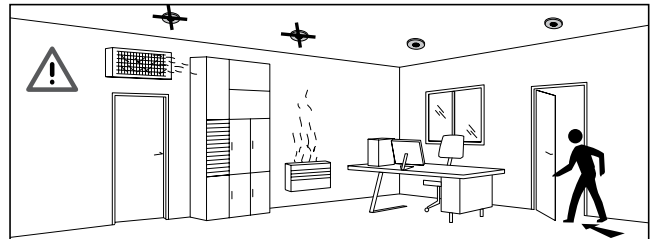
For further information on the parameters see the technical specifications of configuration tool BMSO4001.

Restore factory settings:

- 1) Press LEARN briefly, the LED will flash slowly.
- 2) Press LEARN and keep pressed for 10 seconds until the LED flashes rapidly.

Assembly, installation

The device can be installed flush mounted on the ceiling using the claws provided or a box for plasterboard or masonry ceilings, or as a ceiling fixture using the surface mounting box. The Switch Sensor should never be installed close to sources of heat or the split units of air-conditioning systems.



Wiring diagram

Diagram for several Switch Sensors connected to each other without use of a manual ON/OFF command of the load (AUTO mode) .

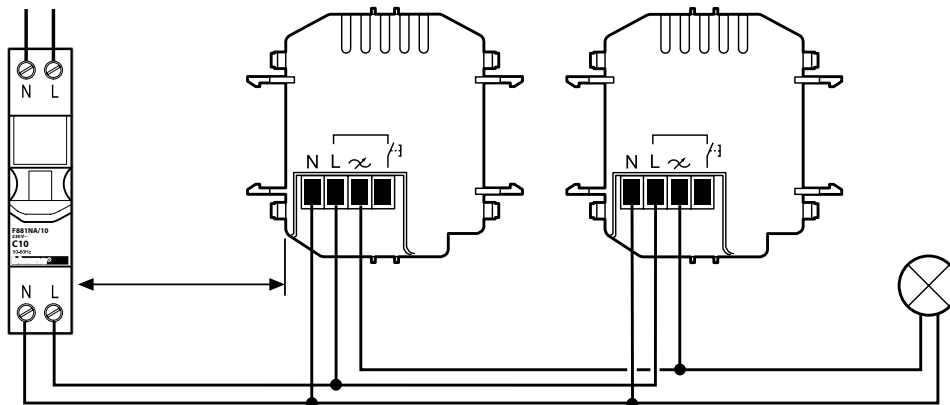
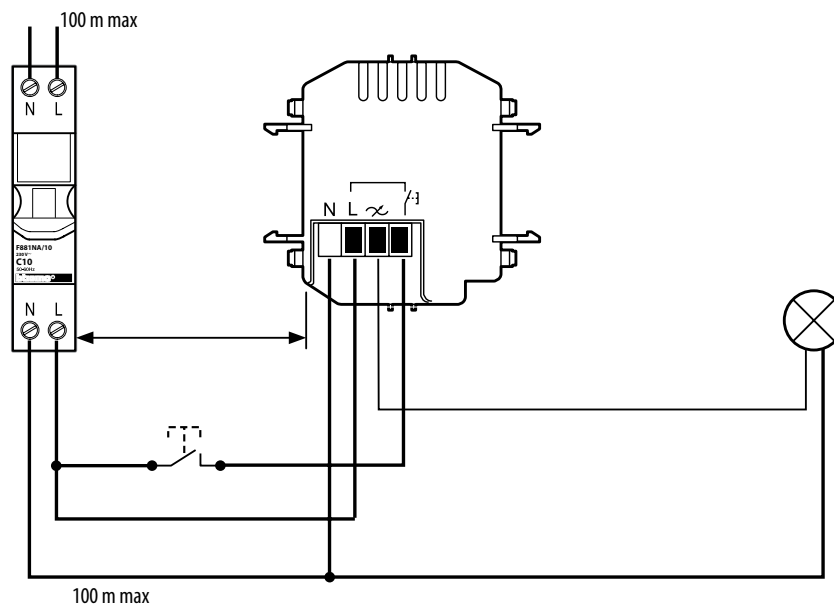


Diagram of one Switch Sensor with use of a manual ON/OFF command of the load (ECO mode) .



Standards, Certifications, Trademarks

Directive:

Low voltage directive 2006/95/EC

Electromagnetic compatibility directive 2004/108/EC

Installation standard: IEC 64-8

Product standard: IEC 60669-2-1/EN 50428

Environmental standards:

EU Directive 2002/96/EC: WEEE (Disposal of waste electrical and electronic equipment)

EU Directive 2002/95/EC: ROHS (Restrictions on hazardous substances)