Light / movement sensor - PIR

HD/HC/HS4659 - L/N/NT4659N - AM5659

Description

This devices features a PIR movement detector, and a brightness sensor for automatic activation of various types of loads following the detection of a movement, and a brightness level lower than the set level.

It is possible to configure several operating modes; for the detailed descriptions see page 4.

Technical data

Voltage:	27 V⎓
Max. Absorption:	15 mA
Connection between detector and actuator:	SCS BUS connector
Sensor type:	PIR movement detector with 180° detection angle and brightness sensor.
Flush mounted box depth:	40 mm
Weight:	60 g
Shock resistance:	IK04
Penetration of solids and liquids:	IP20
Time delay:	5 sec - 59 min. 59 sec
Brightness:	5 lux - 1275 lux
Operating temperature:	(-5) - (+45) °C
Storage temperature:	(-20) - (+70) °C

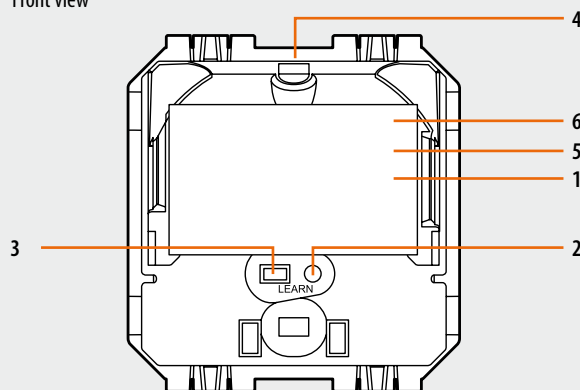## Dimensional data

Size: 2 flush mounted modules

Wiring diagram

BUS/SCS
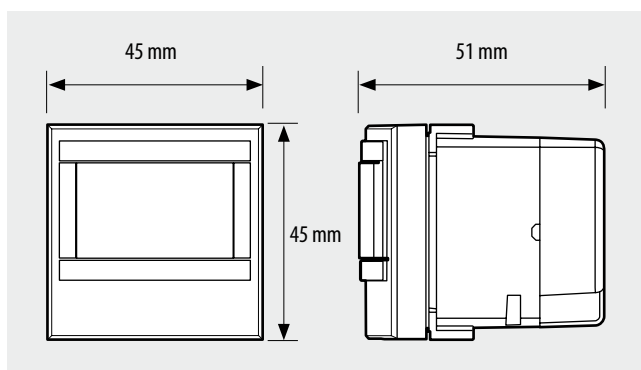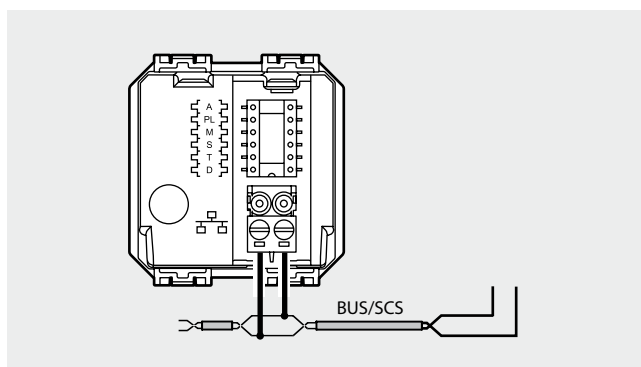
Front view

Legend

1. PIR sensor
2. LEARN LED
3. LEARN key
4. Light sensor
5. Movement detector sensor (under the lens)
6. Infrared transmitter (under the lens)

Detection mode:
Initial detection: the lights are switched on upon detection, if the natural light is below the brightness threshold.

Maintenance: the lights stay on if another movement is detected.

Retrigger: If the sensor detects a movement during the 30 s immediately after switching off of the load, this is immediately switched on again. After the 30 s the sensors returns to normal operation. After 30 seconds the device must be switched on manually

Alarm: before the device is switched off a sound signal is emitted (1 minute, 30 seconds, and 10 seconds before switching off),.

Brightness parameters:

Sensor parameters		Preset value	Adjustable parameters	Configuration tools		Available in	
				BMSO4001	BMSO4003	Distributed mode	~~Central mode~~
Brightness threshold		300 lux	20, 100, 300, 500, 1000 lux	–	✓	✓	–
			0 - 1275 lux	✓	–		
Advanced mode	**Calibration**	–	0 - 99995 lux	✓	–	✓	✓
	Brightness adjustment	Not active	Activate/Deactivate	✓	–	✓	–
	Light contribution	Automatic	Automatic - 1275 lux	✓	–	✓	–

☼ **Brightness threshold:** value at which the lights come on if the brightness level is below the set values, and switch off if above this threshold.

Advanced mode:

⚙ **Calibration:** For calibration to be performed, it is necessary to measure the brightness level present using a lux metre, sending the value to the sensor using a configuration remote control (BMSO4001).

🌗 **Brightness adjustment:** Automatic switch-off of the load 10 minutes after the light level threshold is exceeded combined with an additional safety threshold (to avoid unintended switch-off).

Light contribution: amount of supplementary light supplied by the lighting device switched on.

**Modification of the parameters using the configuration tools**
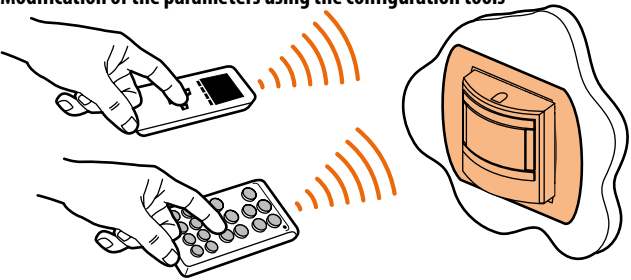
• **BMSO4001 :** advanced configuration tool
• **BMSO4003 :** simplified configuration tool
When the detector receives an IR command from a configuration tool, it emits a sound that confirms that the modification has been acquired.

Return to the factory settings:
1st pressure: press and release LEARN, the LED flashes slowly.
2nd pressure: press and hold down LEARN for 10 seconds until the LED starts flashing quickly.

Performance

Height

1.2 m

Small movements | Large movements

≈ 6 m (PIR) 3 m (PIR)

5 m (PIR)

8 m (PIR)
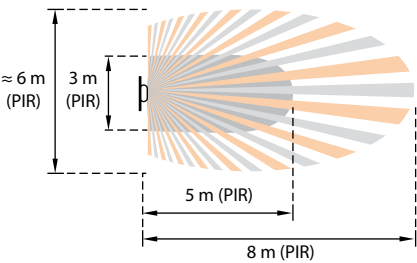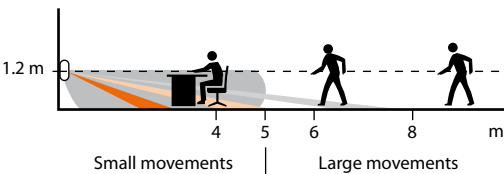
My Home configuration

If the sensor is installed in a My Home system, it can be configured in two ways:
- PHYSICAL CONFIGURATION, connecting the configurators to the relevant sockets;
- VIRTUAL CONFIGURATION, connecting the system to the PC, using the kit Cat. no. 3503N, or the Web server. In this case the virtual configurator software must be installed on the PC.

Note: when configuring the product using the PHYSICAL CONFIGURATION or the VIRTUAL CONFIGURATION, it will not be possible to use the configuration remote controls. Therefore, the advanced functions (not settable using configurators) will not be accessible.

Physical configuration

The sensor parameters are defined by 6 configurator sockets and the functions depend on the operating mode:

Local: A = 1 – 9

Light point PL = 1 – 9

Mode: M = 0 – 4

Sensitivity of the PIR movement sensor: S = 0 – 3

Control timer: T = 0 – 9

Sensitivity of the light sensor: D = 0 – 5

Warning: the addresses A = 0 and PL = 0 do not exist

Possible functions	Configurator mode
The sensor controls the light unit, the address of which defined in A and PL. When a movement is detected, and if the brightness level is below the configured value, the system switches the specified light unit and keeps it on until the expiry of the period configured using the configurator in T (automatic mode). The Sensitivity of the PIR movement detector is configured using the configurator in S . For appropriate operation, the Sensitivity of the light sensor must be configured using the configurator in D. If a user manually switches off the lights, a control action can be used to disabled the movement detector until a movement is detected, for a period set by T.	0
In this mode, the sensor only works based on the light conditions, and the movement sensor is disabled. When the brightness falls below the threshold configured, the system switches on the light unit, switching it off again when the brightness exceeds the set threshold (automatic mode). Configurator A = 1 and PL – 1-9, configurators GEN, AMB (room), and GR cannot be connected. In this mode, configurators S and T are not connected.	1
In this mode the sensor does not manage the lights directly, but sends movement and brightness signals to the scenario programmer MH200N. In this case, the sensor address is entered in A and PL and must be unique inside the system. Therefore it is not possible to connect configurators GEN, AMB, and GR. In this mode the S and T configurators are not connected because these parameters are directly managed by the scenario programmer.	2
In this mode the system directly manages a light unit, ensuring a consistent brightness level inside the room (this mode is only effective if the sensor manages the dimmer). The system switches the lights on when a movement is detected and keeps them on based on the presence of people and the lighting threshold configured (automatic mode). When a movement is detected, and if the brightness level is below the configured value, the system switches the specified light unit on and keeps it on until the expiry of the period configured using the configurator in T. During operation the sensor keeps a consistent brightness level, depending on the configurator in D. For example, when the brightness of the natural light increases, the sensor reduces the brightness of the light unit controlled. For appropriate operation, the brightness Sensitivity threshold of the sensor must be configured using the D configurator. The threshold value can be modified using a brightness control. Quindi il nuovo valoreviene configurato come nuova soglia dal sensore, fino all'attivazione successiva	3
In this mode, the sensor only operates on the basis of the brightness conditions, and directly manages a light unit to ensure a consistent brightness level inside the room (this mode is only effective if the sensor manages the dimmer). The movement sensor is disabled. The lights are manually switched on, and automatically switched off by the sensor, based on the brightness threshold configured (eco mode). Therefore, when the lights are off, the sensor does not switch them on; but it waits for the user to switch them on manually. During operation, the sensor keeps a consistent brightness level, depending on the configurator in D. For example, when the brightness of the natural light increases, the sensor reduces the brightness of the light unit controlled. When the lights are off, if the level of natural light decreases, the sensor does not switch them on. but it waits for the user to switch them on manually. For appropriate operation, the brightness Sensitivity threshold of the sensor must be configured using the D configurator. The threshold value can be modified using a brightness control. The new value is then configured as the new sensor threshold, until the next activation.	4

Warning: to manage scenarios using the sensor signals, through the MH200N scenario programmer, the sensor must be configured in Mode 2.

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Installation

Detector position
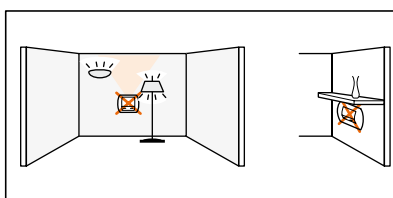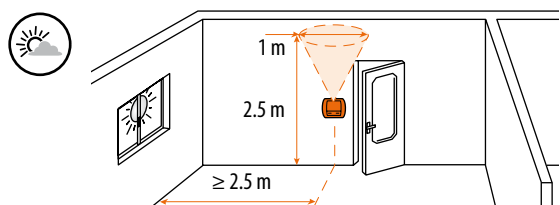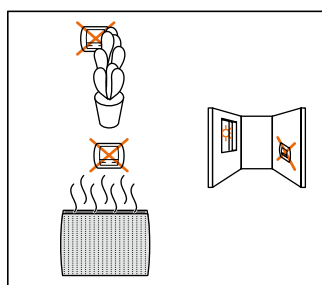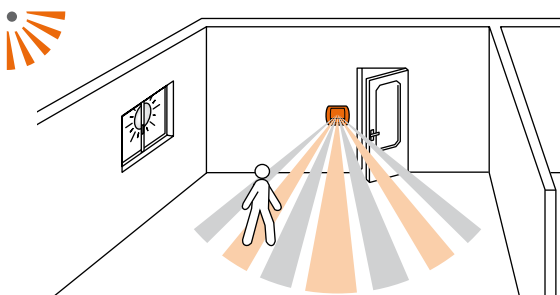
Position the detector so that it is not affected by the artificial light already present in the room.

Configuration

Detection parameters:

Sensor parameters		Preset value	Adjustable parameters	Configuration tools		Available in	
				BMSO4001	BMSO4003	Distributed mode	Central mode
Time delay		15 min	3,5,10,15,20 min	–	✓	✓	✓
			30s - 255 h 59 min 59s	✓	–		
Sensitivity		PIR (very high)	Low, medium, high, very high	✓	✓	✓	✓
Mode	**Auto**	Not active	Activate/Deactivate	✓	✓	✓	–
	Walkthrough	Active	Activate/Deactivate	✓	✓	✓	–
	Eco	Not active	Activate/Deactivate	✓	✓	✓	–
Detection system	**Initial**	PIR	Cannot be modified	✓	–	✓	Available but not separate
	Maintenance	PIR	Cannot be modified	✓	–	✓	
	Retrigger	PIR	PIR/Deactivate	✓	–	✓	
Alarm		Not active	Activate/Deactivate	✓	–	✓	–

Time delay: the time delay after which the load is switched off, if no movement is detected and the lighting level is sufficient

Sensitivity: detection interval setting.

Modalità:

Auto:
Automatic switch on:
- upon detection of a movement if the level of natural light is insufficient..
Automatic switch off:
- if no movement is detected, at the expiry of the time delay set;
- or if the level of natural light is sufficient (set brightness threshold).
Another detection causes automatic switching on if the light is insufficient.

Walkthrough:
- If a movement is detected for a period of time of less than 20", the sensor will switch the load off after 3 minutes;
- Otherwise the load will be switched off after the set time delay. .

Eco:
Manual switching on/automatic switching off:
- if no movement is detected, at the expiry of the time delay set;
After switching off, if the detector detects a movements within 30 seconds the lights automatically come on; after 30 seconds the lights must be switched on manually.

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1) Duration of the light timer based on the configurator connected to T:

Configurator in T	Light timer in minutes
No configurator	15
1	0.5
2	1
3	2
4	5
5	10
6	15
7	20
8	30
9	40

2) Sensitivity PIR and US movement detector based on the configurator connected to S:

Configurator in S	Sensitivity
No configurator	Low
1	Medium
2	High
3	Very high

When using the configurators it is not possible to individually set the sensitivity of the detection technology. Both will have the value set by the S configurator.

3) Sensitivity of the light sensor based on the configurator connected to D:

Configurator in D	Sensitivity in lux
No configurator	300
1	20
2	100
3	300
4	500
5	1000

Virtual configuration

The virtual configurator software can offer all the functions listed below:
- brightness/movement detector, local
- brightness sensor, local
- movement detector, local
- brightness/movement detector, central
- brightness sensor, central
- movement detector, central
- IR PLUS scenario control

Configuration of the light management function

If the sensor is used in the Lighting Management system, it can be configured with the following modes:
- **Plug&Go, Push&Learn** (see the specific technical manual)
- **Project&Download.**
The virtual configurator software can offer all the functions listed below:
- brightness/movement detector, local
- brightness sensor, local
- movement detector, local
- brightness/movement detector, central
- brightness sensor, central
- movement detector, central
- IR PLUS scenario control

For more detailed information on the functions, see the glossary at the beginning of the Technical Sheets section.

maintenance

Keep the lenses clean.
Clean the surface using a cloth.
Do not use: acetone, detergents for removing tar, or trichloroethylene.
Maintenance using the following products: - hexane (En 60669-1)
- methylated spirit
- soapy water
- diluted ammonia
- bleach, diluted 10%
- glass detergents

Warning: an initial test is required in order to use other special maintenance products.

Standards

Directive:	EC
installation norms:	NFC 15-100
Product norms:	IEC 60669-2-1

Environmental standards:
- UE 2002/96/EC directive:	RAEE (electric and electronic device waste).
- Direttiva UE 2002/95/CE:	RoHS (restriction on the use of dangerous substances).
- Standard:	ERP (public buildings)
	ERT (buildings used as workplaces)
	IGH (very high buildings)

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