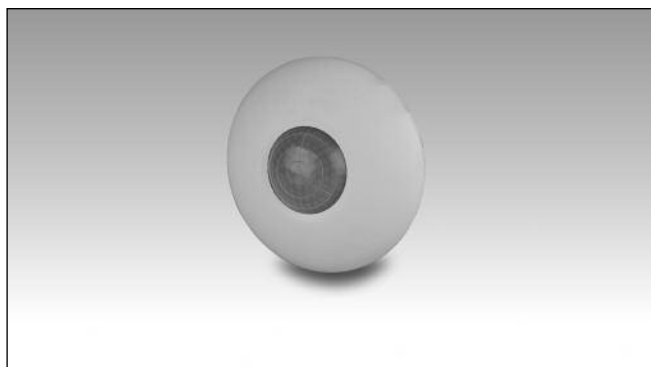


Smart Dupline® PIR Sensor for Ceiling and Luxmeter Type SHSQP360L

CARLO GAVAZZI



- Passive infrared detector (PIR) with built-in luxmeter
- Detects movement and presence
- Light measuring range: 0 to 20 klux
- Indoor applications
- Smart-house output
- Operating distance: max. 7.5 m
- Operating angle: 360°
- LED indication
- Supplied by bus
- Ceiling-mount

Product Description

The SHSQP360L is a 360° PIR sensor to detect presence and/or movement in indoor installations with a built-in luxmeter, combining two products in one. It is part of the smart-house concept and can be used to control lights, rollerblinds, air-conditioning, intruder alarms and all the other functions supported by the smart-house system, in an automatic way depending on people-presence. This sensor is completely programmable via the Sx tool.

Ordering Key

SH SQ P 360 L

smart-house _____
Ceiling mounting _____
Pir sensor _____
Detection angle _____
Luxmeter _____

Type Selection

Housing	Colour	LEDs	Supply by bus
Ø 90 x 40 mm	White	1 blue	SHSQP360L

Input Specifications

Inputs	PIR
Lens	Dual detecting zones
Angle	360°
Operating Distance	≤ 7.5 m
Luxmeter	
Characteristic deviation	-3% to + 3%
Response time	It depends on the number of variables in the system
Sensor range	0 to 20 kLux
Output accuracy over temperature	0° to 40°C ± 10% -30° to 0°C ± 15% 40° to 60°C ± 20%

Dupline® Output Specifications

Voltage	8.2 V
Maximum Dupline® voltage	10 V
Minimum Dupline® voltage	5.5 V
Maximum Dupline® current	5 mA

Output Specifications

Output	Blue LED
LED output	

Supply Specifications

Power supply	Supplied by bus
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General Specifications

Address assignment	Automatic: the controller recognises the module through the SIN (Specific Identification Number) that has to be inserted in the Sx tool.	CE Marking	Yes
Environment		EMC	
Degree of protection	IP 20	Immunity	EN 61000-6-2
Pollution degree	3 (IEC 60664)	- Electrostatic discharge	EN 61000-4-2
Operating temperature	0° to +50°C (+32° to +122°F)	- Radiated radiofrequency	EN 61000-4-3
Storage temperature	-20° to +70°C (-4° to +158°F)	- Burst immunity	EN 61000-4-4
Humidity (non-condensing)	20 to 80 %	- Surge	EN 61000-4-5
Connection		- Conducted radio frequency	EN 61000-4-6
Screw terminals	0.2 to 1.5 mm ²	- Power frequency magnetic fields	EN 61000-4-8
D+	Signal	- Voltage dips, variations, interruptions	EN 61000-4-11
D-	GND	Emission	EN 61000-6-3
Dimensions OPUS (WxHxD)	Ø 90 x 40 mm	- Conducted and radiated emissions	CISPR 22 (EN55022), cl. B
Weight	25 g	- Conducted emissions	CISPR 16-2-1 (EN55016-2-1)
Approvals	cULus, according to UL60950	- Radiated emissions	CISPR 16-2-3 (EN55016-2-3)

Mode of Operation

This PIR sensor responds to any fluctuation in infrared heat radiation, so any object or human presence changes the thermal image detected by the sensor when entering its field of vision.

The sensor is equipped with a segmented lens that divides the field of vision into active and passive zones (zones not visible to the sensor, see figure "Sensitive area"). When a heat source crosses these zones, the sensor detects the change in infrared radiation and presence and/or movement are recognised.

How sensitive and fast the sensor has to be to detect presence and/or movement can be programmed by means of four parameters, by means of the Sx tool.

The four parameters are: mode of detecting the

crossing of active zones, sensitivity, the number of pulses and the time window in which these pulses have to be detected. These four parameters have to be set for both presence and movement recognition. Movement is used by the system in the intruder alarm function and to switch the light on, while presence is used in the light function to reload the energy-save timer (i.e. each time presence is detected, the energy-save timer starts counting from the beginning).

1) Mode of detection

A: one border between the active and the passive zone has to be crossed to give a pulse signal. This option has to be selected for presence detection and movement and turns the light on as

soon as a person moves from an active to a passive area or vice versa (very quick response).

B: two borders have to be crossed to give a pulse signal. The person has to move from an active area to another active area, passing through a passive one or vice versa.

This option is recommended for sensors used in the intruder alarm function, in order to avoid false alarms.

2) Sensitivity

A number can be set from 3 to 100: the smaller this value is, the longer the detection distance, but the higher the sensitivity to heating sources.

In the figure "Sensitive Area", examples of different sensitivity can be seen.

3) Number of pulses

The number of pulses is calculated according to mode A or B before sending a people detection message to the controller. This can be set from 1 to 8.

4) Time window

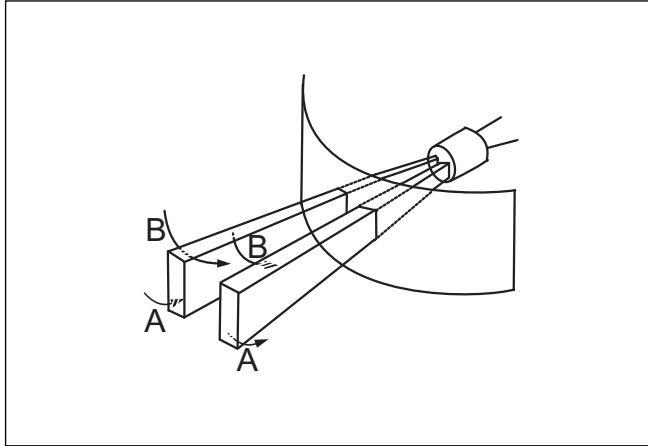
This is the time interval within which the predefined number of pulses is detected. It can be set from 1 to 10 seconds.

In the table below is an example of settings which, of course, might depend on environmental conditions, application and type of installation.

	Presence	Movement (light fx)	Movement (alarm fx)
Mode of detection	A	A	B
Sensitivity	10..30	30..70	50..100
Number of pulses	1	1	3
Time window	10	2	10

Mode of Operation (cont.)

Active and passive zones



LED programming

There is one configurable LED (blue) on board the SHSQP360L to be programmed.

Blue LED: the user can select one of the following options:

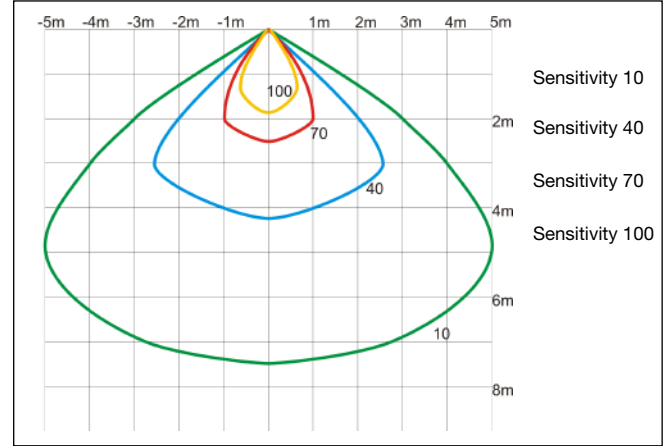
1. LED always OFF

2. LED flashes shortly every seconds if a presence/movement is detected

3. LED flashes shortly every seconds if it is used as feedback of a function status

If the blue LED is not programmed, it is always OFF.

Sensitive area



Coding/Addressing

No addressing is needed since the module is provided with a specific identification number (SIN): the user has only to insert the SIN number in the Sx tool when creating the system configuration.

Used channels: 2 input channels, 1 output channel.

Mounting

The PIR detector is designed for ceiling mounting. As the SHSQP360L is a passive device, several detectors can be placed in the same room without interfering with each other. The module should not be

installed as follows:

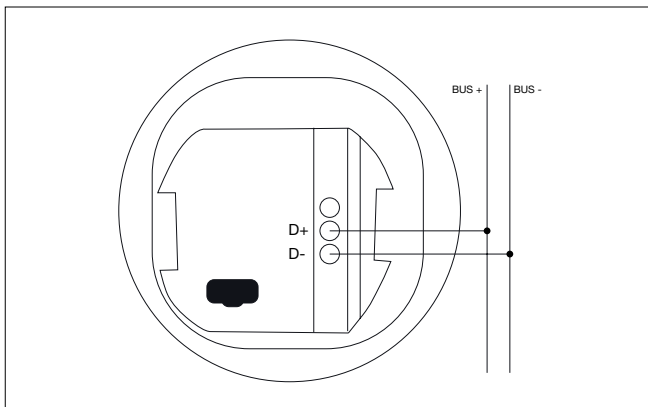
- Outdoors.
- In places exposed either to sunlight or to motor vehicle headlights pointing directly at the sensor.
- In places exposed to direct air flow from a heater

or air conditioner.

- In places where rapid temperature changes occur.
- In places exposed to severe vibration.
- Close to glass or other objects which might reflect the infrared radiation.

Note: If the sensor is to detect presence, please be careful to mount it so that the area where presence has to be detected is completely covered by the sensitive area of the sensor. See figure "Sensitive area".

Wiring Diagram



Dimensions (mm)

