

Specification

Product series: Low-mounting PIR motion sensor (casambi+ON/OFF version)

Product model: MSA246S IR B1

Product version: V1.0

Version	Release Date	Record	Publishing
V1.0	2025.12.02	Initial version	Jacky

【Product description】

- The MSA246S IR B1 is a PIR sensor that utilizes passive infrared technology and a special-designed planar Fresnel lens from Merrytek to detect the movement of people or pets within a real-time detection area. It also incorporates a built-in light sensor to measure ambient light intensity in real time. Combined with PIR infrared sensing, this provides fast and accurate front-end sensing input for local control of devices in smart homes, smart hotels, and smart offices, enabling applications based on human body detection and ambient light level.

【Product Feature】

- PIR motion detection
- Connect to casambi BLE ecosystem
- Accurate motion detection with one channel ON/OFF output and casambi communication
- Daylight sensor detection available
- Detection area, hold time can be set by casambi app
- Max detection range: 10-14m in diameter
- 2-4m mounting height
- Max loading capacity :1200w resistive loading and 600w inductive loading
- Corridor, passage motion detection application highly recommended
- Flush mounting and surface mounting available



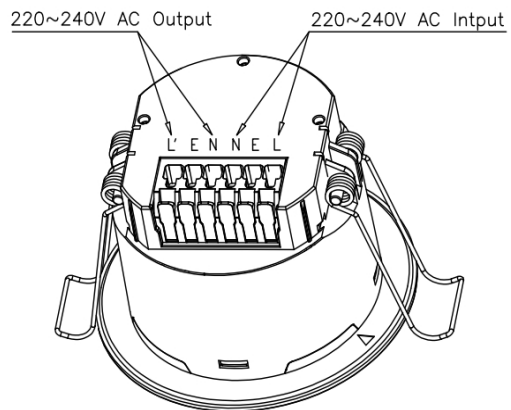
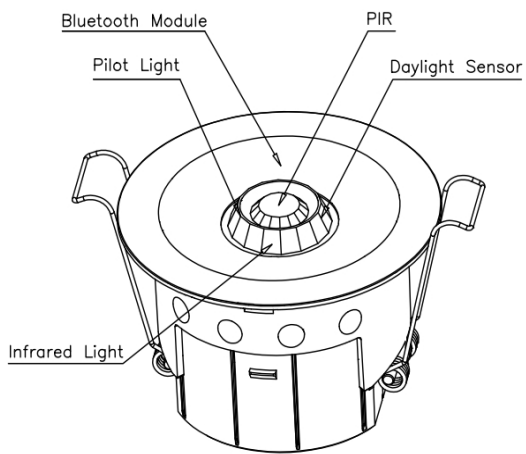
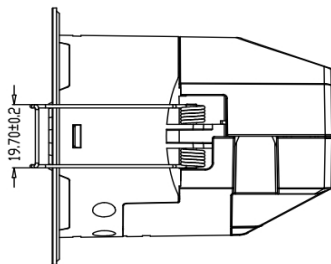
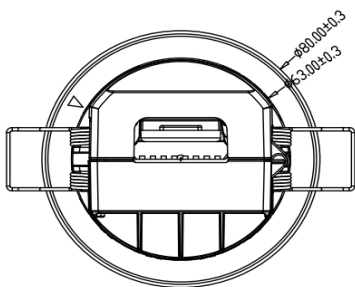
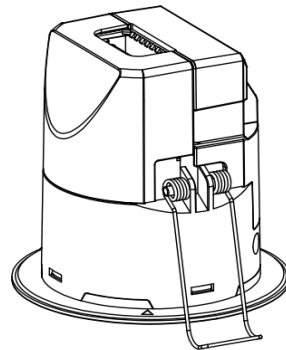
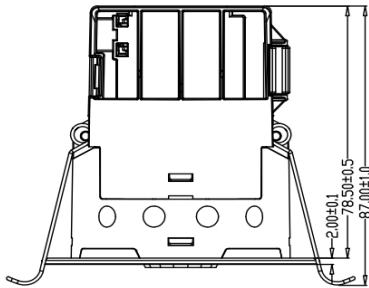
【Dimension】

- Product size: 63x80mm(flush mounting)
- Connection interface: 6-pin terminal

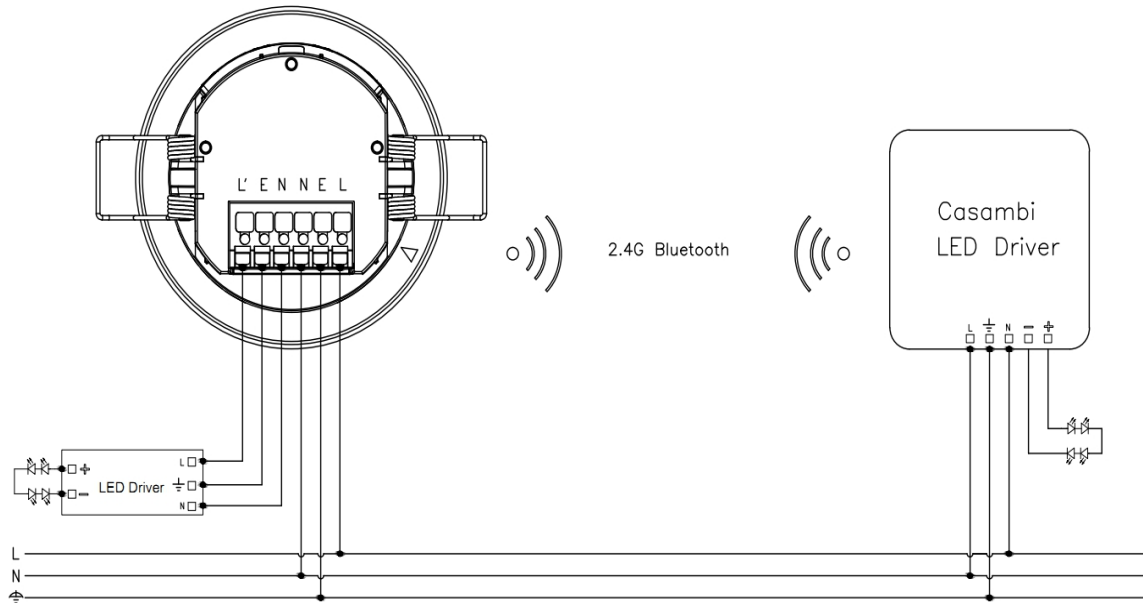
【Parameter】

Input/Output	Input voltage	100-240Vac
	Rated voltage	230V ac
	Working current	20mA max
	Power consumption	≤0.5W @230V AC
	Output signal	1 channel ON/OFF+casambi BLE
	Surge protection	2KV(L/N,EN61000-4-5)
	Max. Load surge capacity	30A (50% Ipeak, twidth =500us, 230Vac full load, cold start)
	Load capacity	1200w resistive load, 600w inductive load(LEDs)
Sensor parameter	Function	PIR motion detection+ daylight sensor
	Detection Area	Casambi app setting: 100%/75%/50%/25%
	Sensor Hold Time	Default setting 2s + Linger time set by Casambi App
	Daylight Sensor	Set by Casambi App under Close Loop
	Radius detection range(based on 100% sensitivity)	5-6m when move across sensor@25℃ based on 3m mounting height(please note the detection range will become shorter when move toward sensor)
	Remote control	MH10 or MH18 are for option
	Mounting height	2-4m, typical value:3m
Application environment	Drill hole	Φ65mm
	Working temperature	-25℃...+50℃(detection range might differ based on different temperature)
	Storage temperature	-40℃~+80℃
	Warranty	3 years (available based on product quality under indoor application)
Certificate Standard	Certificate	Compliant to CE
	Environmental requirements	Compliant to RoHS
	IP rating	IP20(flush mounting)
"N/A" means not available		

【Dimension and Function diagram】



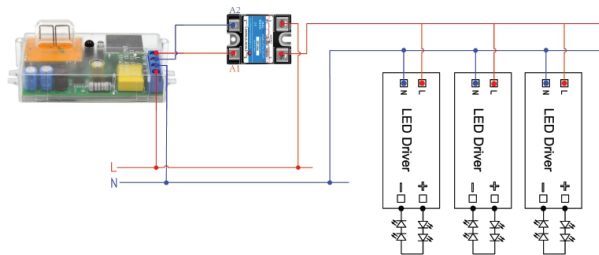
【Wiring instruction】



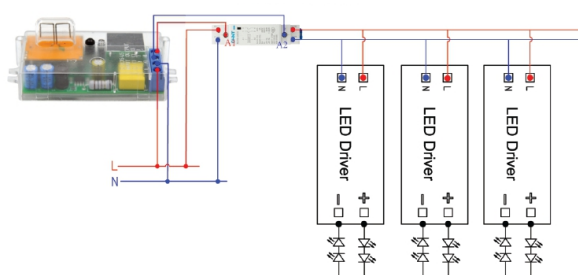
Wiring layout suggestion:

1. LN is the AC input terminal, and L'N is the AC output terminal. Please ensure the wiring sequence is correct.
2. Single load requirements for a single sensor output: resistive loads should not exceed 1200W, and capacitive loads should not exceed 600W. When connecting multiple loads, surge capacity and total load must be considered. We recommends connecting an AC contactor or AC solid-state relay to the sensor output terminal to prevent damage to the sensor due to inrush current overload when one sensor is connected to multiple loads.

AC solid-state relay wiring diagram



AC contactor wiring diagram



Load capacity depen on AC solid-state relay / AC connector

3. The effective range of Bluetooth communication is 40m in open areas. If there are walls obstructing the view, the quality of Bluetooth communication may be affected.

【Initialization】

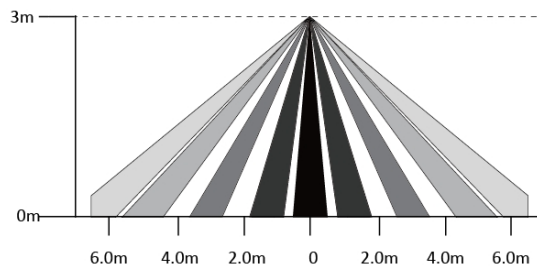
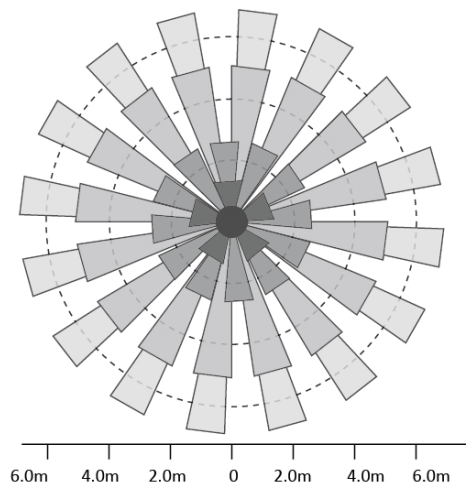
When powered on, sensor will be in initialization period, relay is closed during this period. After initialization time, relay is open, detection range, hold time and daylight value can be set via Casambi App.

【Factory setting】

Detection Area:100%, Hold Time: 2s, Indicator:ON

【Detection radiation】

MSA246S IR B1 is highly recommended ceiling flush mounting and its detection radiation is as below shows:



Top view
Side view

【Detection Signal】

The product detects human moving signals and below is a description of the moving signals:

- **Moving signal:** detect the human significant moving (walking) in the detection area.



Motion



Minor motion

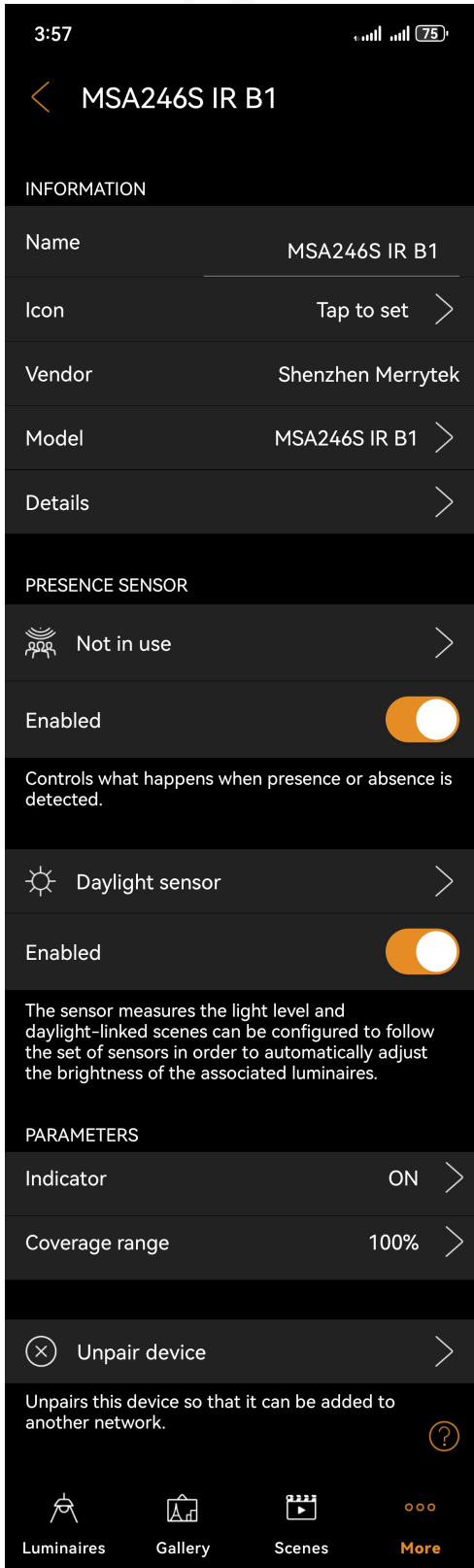


Breathing

- Note: MSA246S IR B1 only human motion signal

【Casambi app】

Please use Casambi App to set all sensor parameters and create scene



【Application Precautions】

1. This infrared pyroelectric sensor should be installed by a professional electrician. Power should be disconnected before installation and wiring.
2. The optimal installation height for this infrared pyroelectric sensor is 3m. It should not be installed outdoors to avoid false triggering due to ambient temperature. It should not be installed in locations sensitive to temperature or airflow changes to prevent false triggering or overheating leading to sensor failure.
3. The detection range of this infrared pyroelectric sensor should not be obstructed by screens, furniture, large potted plants, or other barriers.
4. There should be no reflective objects directly in front of this infrared pyroelectric sensor, as reflected light can cause false triggering.
5. This infrared pyroelectric sensor should be kept away from large electromagnetic radiation equipment, such as Wi-Fi routers, cameras, microwave ovens, etc. It is recommended to keep them at least 2 meters away to prevent electromagnetic interference.
6. The sensing distance of this infrared pyroelectric sensor may fluctuate depending on the installation height and ambient temperature compared to the typical value.

【Disclaimer】

Due to the complexity of product technology and differences in application environment, it is difficult to guarantee a completely accurate or complete description, so this specification is only for user reference. We will reserve the right to make changes to the product specifications without notifying the user, and do not make any commitments and guarantees in the legal sense. At the same time, our company encourages users to supplement or modify the contents of our specifications after using our products.