

SPECIFICATION

Product Name: ON/OFF Sensor

Model No.: MC030S L

Issue Date: May 06, 2023

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	P&M CHECKED	R&D CHECKED	PREPARED
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1. Features



- Compact size design, can be built-in most of light fixtures.
- Sensor parameters can be easily adjustable by DIP switches.
- Terminal design for both in and off connection, easy to be connected.

2. Parameter

Input	Operating Voltage Range	198-264Vac 50/60Hz
	Rated Voltage	220-240Vac 50/60Hz
	Stand-by Power	≤0.1W
	Surge Test	1KV(L/N, EN61000-4-5)
Output	Working Mode	ON/OFF function
	Type of Load	Inductive or Resistive Load
	Load Capacity	400W@230Vac(Inductive) ; 800W @230Vac(Resistive)
	Max. Surge Capacity	30A (50% Ipeak, twidth =500uS, 230Vac full load, cold start); 60A (50% Ipeak, twidth =200uS, 230Vac, full load, cold start)
Sensor Parameters	Operating Frequency	5.8 GHz ±75 MHz, ISM Band.
	Transmitting power	1mW Max.
	Hold time	5S/30S/90S/3min/20min/30min(set via 3 DIP switch)
	Detection Area	100%/75%/50%/25%/10%(set via 3 DIP switch)
	Daylight Sensor	2lux/10lux/25lux/50lux/Disable (set via 3 DIP switch) (Ambient diffusion status)
	Detection radius (100% detection area)	4-6m (mounting height 3m)
	Mounting Height	Typical Value: 3m (6m Max)
	Detecting Angle	Ceiling mount 150°
Operating Environment	Operating Temperature	-25℃~60℃
	Storage Temperature	-40℃~80℃ Humidity: ≤85%(Non-condensing)
	Maximum shell temperature(Tc)	80℃
Certificate Standards	Safety standards	EN IEC 61058-1:2018; EN 61058-1-2:2016; EN 62479:2010,EN 50663:2017
	EMC standards	EN 301 489-1 V2.2.3; EN 301 489-3 V2.1.1; EN 61326-1:2013 EN IEC 61058-1:2018; EN 61058-1-2:2016 ;EN300440

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Certificate Standards	Environmental Requirement	Compliant to RoHS
	Certificate	CE, RED, TUV
Others	Wiring	Press-in Type Terminals, wire diameter:0.75-1.5mm ²
	IP Rating	IP20
	Protection Class	Class II
	Installation	Built-in
	Dimension	77*36*25.6mm
	Package	Bubble bag+Clapboard + Carton(K=A)
	Net Weight	37.8g
	Lifetime	5 years warranty @Ta 230V full load

Note

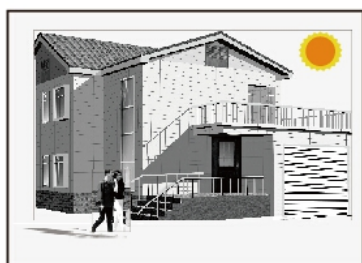
1. "N/A" means not available.

2. The detection range of the sensor is related to the moving speed and size of moving object, mounting height, installation height and angle, installation site, reflectors around the sensor etc. The data in the document is typical value and tested by a 165cm person in an open indoor area.

The detection range at wall mounting will be longer at ceiling mounting. Please reduce detection sensitivity at wall mounting or contact us to confirm the sensor data settings.

3. Function

(1) ON/OFF Function



- ① With sufficient ambient light, the light will not be switched on even if with motion signal.



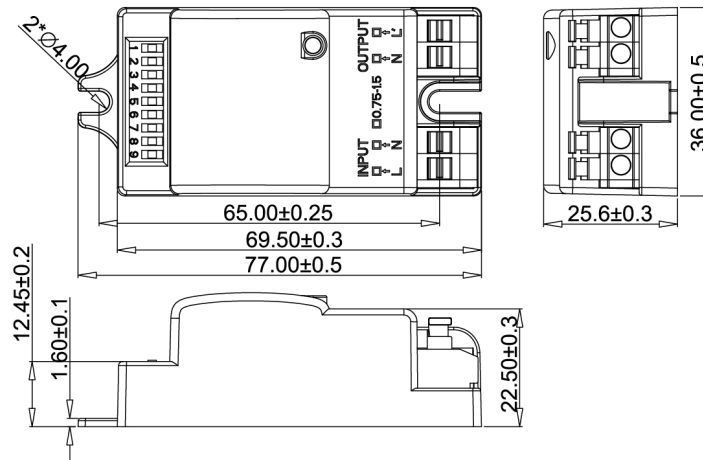
- ② With insufficient ambient light, the sensor switches on the light when motion is detected.



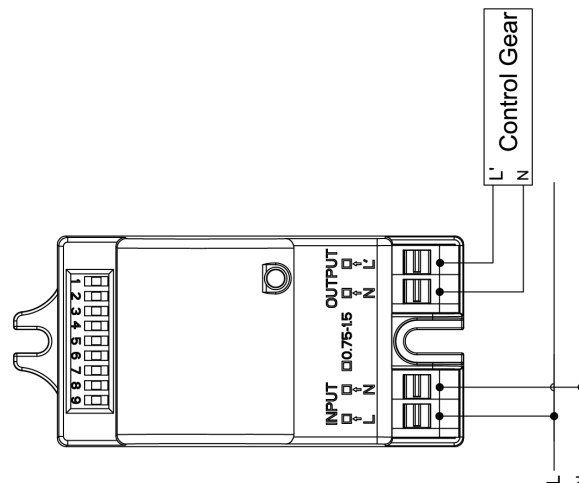
- ③ After elapse of hold time, the sensor switches off the light when no motion is detected.

Setting daylight sensor to "disable" or ambient brightness is lower than the preset daylight sensor value, when detecting moving signals sensor starts working and light will turn on. When hold time ends, light will turn off.

4. Dimension (mm)

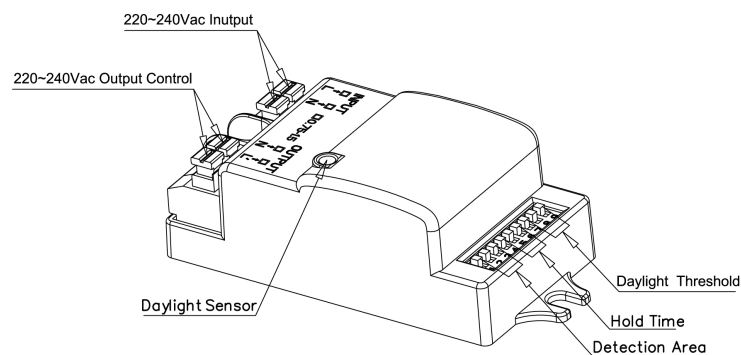


5. Wiring



*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.

6. Structure



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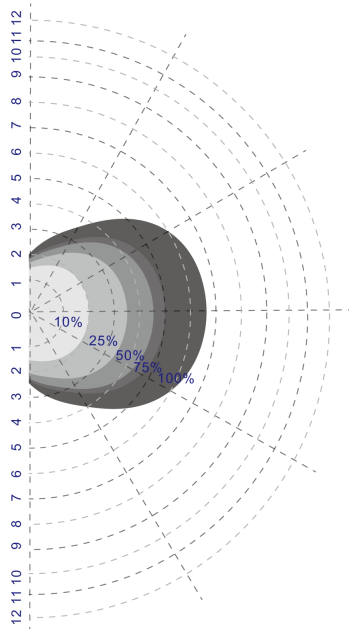
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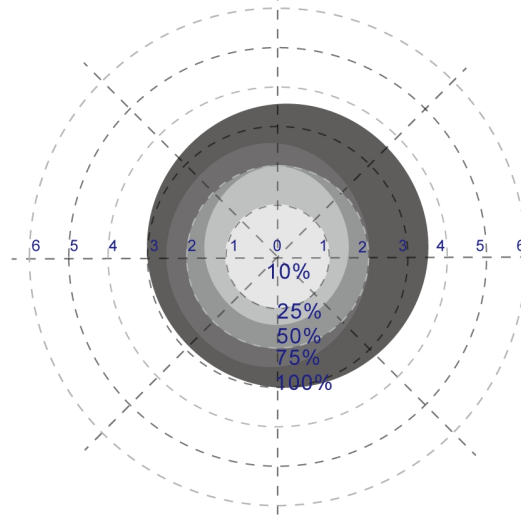
7. Radiation Pattern

Wall mounted height: 2m
Sensitivity:
100%/75%/50%/25%/10%



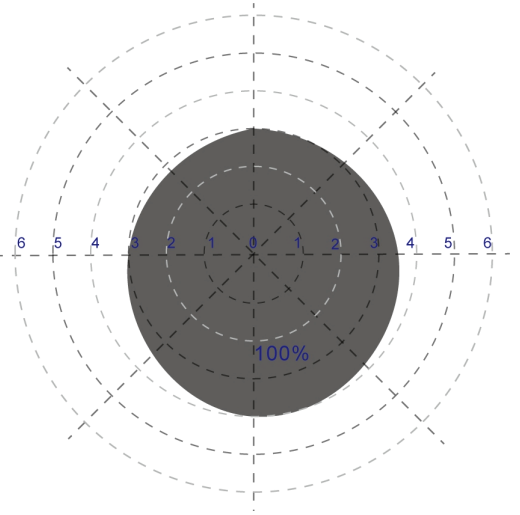
Normal moving (Speed: 1m/s)

Ceiling mounted height: 3m
Sensitivity:
100%/75%/50%/25%/10%



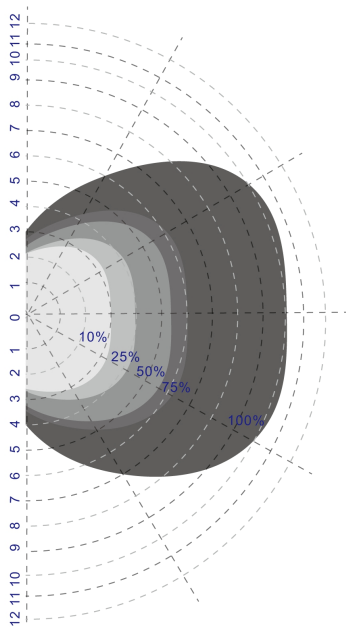
Normal moving (Speed:1m/s)

Ceiling mounted height: 6m
Sensitivity:
100%

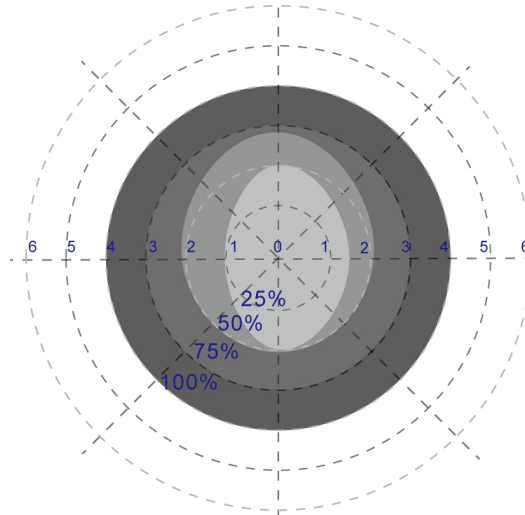


Normal moving (Speed:1m/s)

*100% detection sensitivity is workable when installed at 6m mounting height. Only 10%,25% ,50%,75% sensitivity is not able to detect motion signal.

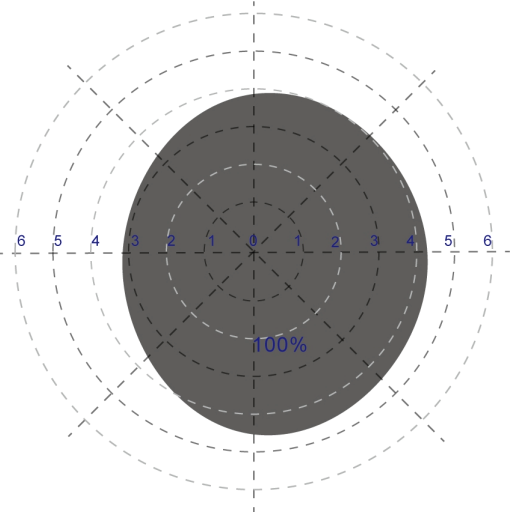


Slow moving (Speed 0.3m/s)



Slow moving (Speed 0.3m/s)

*25% ,50%,75%,100% detection sensitivity is workable when installed at 6m mounting height. Only 10% sensitivity is not able to detect motion signal.



Slow moving (Speed: 0.3m/s)

*100% detection sensitivity is workable when installed at 6m mounting height. Only 10%,25% ,50%,75% sensitivity is not able to detect motion signal.

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8. DIP Switch Setting

Detection Area (Sensitivity)

	1	2	3	
I	ON	ON	ON	100%
II	-	ON	ON	75%
III	ON	-	ON	50%
IV	-	-	ON	25%
V	-	-	-	10%

Hold Time

	4	5	6	
I	ON	ON	ON	5S
II	-	ON	ON	30S
III	ON	-	ON	90S
IV	-	-	ON	3min
V	ON	ON	-	20min
VI	-	-	-	30min

Daylight Sensor

	7	8	9	
I	ON	ON	ON	2Lux
II	ON	ON	-	10Lux
III	-	ON	-	25Lux
IV	ON	-	-	50Lux
V	-	-	-	Disable*

*Setting "Disable", sensor turns light when detecting moving object whether the daylight brightness is enough or not.

*Daylight thresholds are typical values that are measured on a sunny day without shadow and in an ambient light diffuse reflection status.

9. Initialization

After power on, the sensor automatically turns on light to 100% brightness and turns off light in 10 seconds. During initialization, sensor is not able to detect movement.

10. Factory Setting

Detection Area: 100%, Hold Time: 5S, Daylight Sensor: Disable.

11. Application Notice

- (1) Sensor should be installed by a professional electrician. Please turn off power before installing, wiring, or setting the DIP switches.
- (2) Microwaves cannot penetrate metal. Do not place product in a closed or a half-closed metal lamp. Neither metal nor glass is not allowed to cover above the product. If antenna needs to pass through the metal plate, please ensure that the top of sensor is close to the metal plate.
- (3) The distance among sensors should be greater than two meters. Keep sensor away from switches, routers and other wireless devices to avoid radio interference, more than two meters. The antenna surface of microwave module should be away from input AC and output DC to avoid low or high frequency signals affecting the normal operation of microwave sensor's antenna.
- (4) Vibration signals will be regarded as moving signals to trigger sensor. Installing sensor should be away from the object that vibrates for a long time, such as large metal equipment, pipes, air conditioning outlets, exhaust vents, smoke exhaust machine ports, shaking fans, etc. Pets in detecting area may trigger sensing.
- (5) Sensor is for indoor use only. The waterproof effect for outdoor or half-outdoor use will be affected. Wind, rain, and moving objects may cause false triggering. When the sensor is installed in a metal lamp, on a metal reflective surface, or in a narrow enclosed device, the microwave will be reflected repeatedly and cause false triggering. Please reduce the sensitivity of sensor or contact manufacturer for technical support.
- (6) This model is suitable for ceiling mounting. If wall mounting, the detecting area will enlarge which makes microwave penetrate wall or light not turn off, and please change sensitivity to 10%. If 10% is useless, please avoid wall mounting or contact the manufacturer for technical support.
- (7) Due to continuous improvement, the contents of this instruction will be changed without prior notice.
- (8) The daylight thresholds are measured on a sunny day without shadow and in an ambient light diffuse reflection status. Different environment and climate cause different brightness values that daylight sensor measures.
- (9) Sensitivity area is related to moving speed of objects, size of moving objects, mounting height, mounting angle, working environment, reflecting materials and etc.
- (10) Given detecting area is typical value that was measured by 165cm high testers in an indoor open environment.
- (11) To achieve the best detection results, the antenna surface of microwave sensor should be at least five millimeters higher than surrounding plates, such as aluminum substrate, glass fiber board and so on.

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(12) When ambient temperature is over 80°C, over temperature protection may be triggered (automatic recovery after cooling)

(13) The AC incoming line needs to keep a distance of more than 10mm from the BUCK inductance, Otherwise it will cause conduction to fail. As shown in the following figure.

