SPECIFICATION

Product Name: Microwave Sensor

Model No.:   MC119S

Issue Date: May 06, 2023

CUSTOMER   APPROVED

PRODUCT DIRECTOR APPROVED	P&M APPROVED	R&D CHECKED	PREPARED
(signature)	*(signature)*	*(signature)*	*(signature)*

1. Features

1. Conform to new ERP standards; low stand-by power.

2. 5.8GHz microwave license-free ISM wave band; bulk order are compliant with RED approval.

3. Compact size design, can be built-in most of light fixtures.

4. Simple to operate: adjusting DIP switches to change detection area, hold time, daylight sensor and other parameters.

5. Input and output terminals are convenient for connecting.

2. Parameter

Input	Voltage Rage	220-240Vac 50/60Hz
	Rated Voltage	230Vac
	Stand-by Power	≤0.1W
	Surge Test	1KV(L/N，EN61000-4-5)
Output	Working Mode	ON/OFF
	Type of Load	Inductive or Resistive Load
	Load Capacity	200W@230Vac(Inductive Load), 400W @230Vac(Resistive Load)
	Max. Surge Capacity	20A (50% Ipeak, twidth =500uS, 230Vac full load, cold start); 40A (50% Ipeak, twidth =200uS, 230Vac, full load, cold start）
Sensor Parameters	Operating Frequency	5.8 GHz ±75 MHz，ISM Wave Band
	Transmitting power	1mW Max
	Hold time	5S/30S/1min/3min/5min/10min/20min/30min
	Detection	100%/75%/50%/25%
	Daylight	Normal Daylight Sensor 2Lux/10Lux/25Lux/50Lux/Disable (Ambient diffusion status)
	Detection radius (100% detection area)	Ceiling Mounting at 3m height: 0.3m/S ≥3.5m，1m/S ≥2.5m Wall Mounting at 2m height: 0.3m/S ≥8m，1m/S ≥4m
	Mounting Height	Typical Value: 3m（4m 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	EN61058-1-2，EN61058-1
	EMC Standards	EN61058-1，EN61000-3-2，EN61000-3-3，EN62479 EN301489-1，EN55015，EN300440
	Environmental Requirement	Compliant to RoHS

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Certificate Standards	Certificate	CE，RED，TUV
Others	Wiring	Press-in Type Terminals, wire diameter:0.5-0.75mm^2
	IP Rating	IP20
	Protection Class	Class II
	Installation	Built-in
	Dimension	61.0*29.0*23.0mm
	Package	Bubble bag+Clapboard + Carton(K=A)
	Net Weight	25.2g
	Lifetime	5 years warranty @Ta 230V full load

3. Function

(1) ON/OFF Function

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

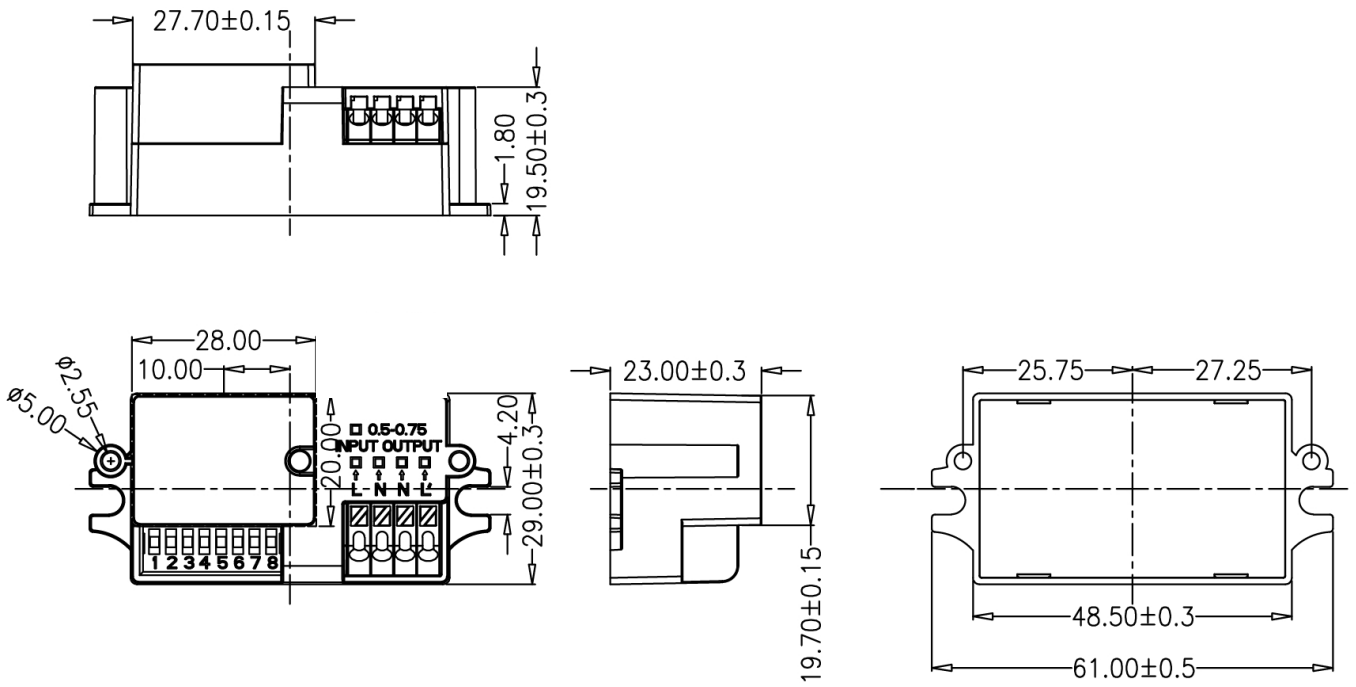② With insufficient ambient light, the sensor switches on the light when motion is detected.

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.
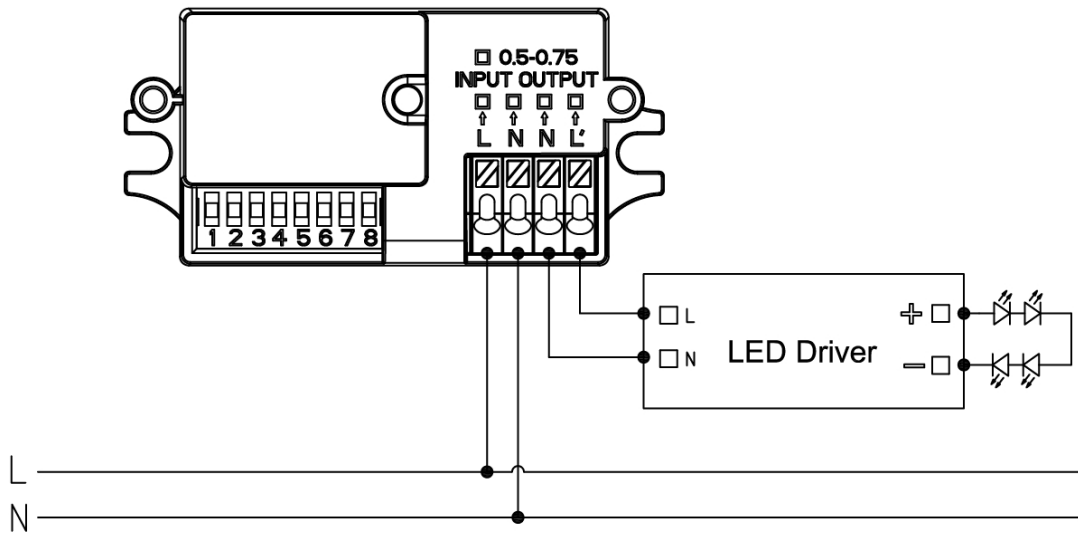
(2) Override Function
Light will constantly remain on after continuously turning on and off light five times in two second. Recover sensing function when power on again.
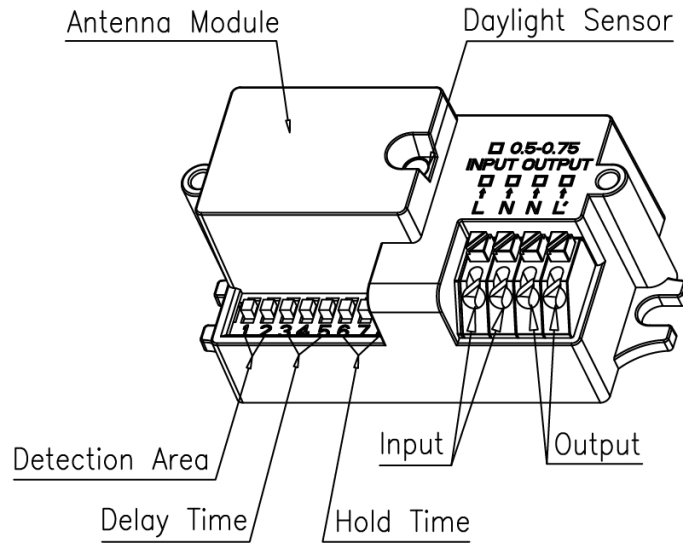
4. Dimension (mm)

5. Wiring

*The sensor is allowed to be connected to one load only. The sensor may be damaged if connecting more than one load.

6. Structure

7. DIP Switch Setting

1）Detection Area

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

2）Hold Time

	3	4	5	
I	ON	ON	ON	5S
II	ON	ON	-	30S
III	ON	-	ON	1min
IV	ON	-	-	3min
V	-	ON	ON	5min
VI	-	ON	-	10min
VII	-	-	ON	20min
VIII	-	-	-	30min

3）Sensor

	6	7	8	
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.
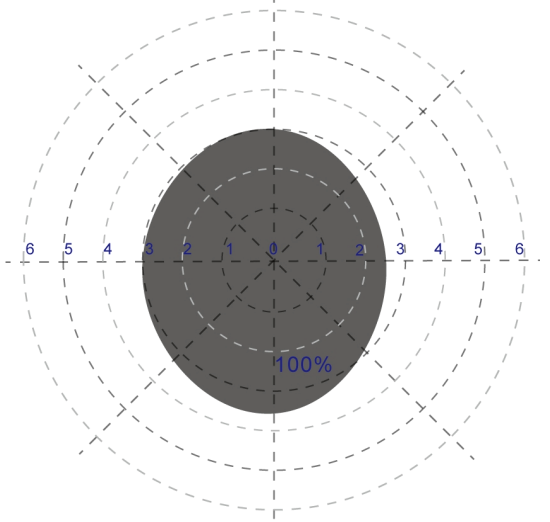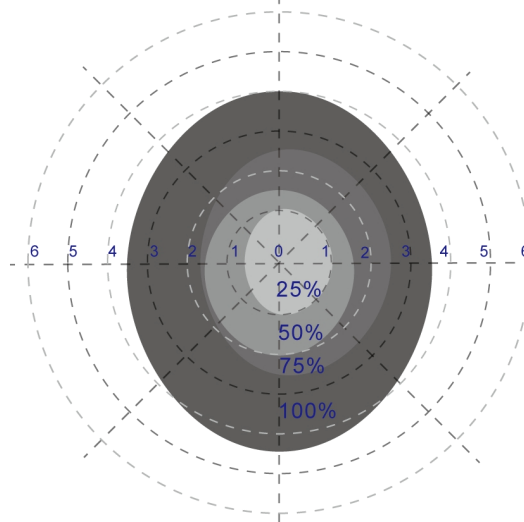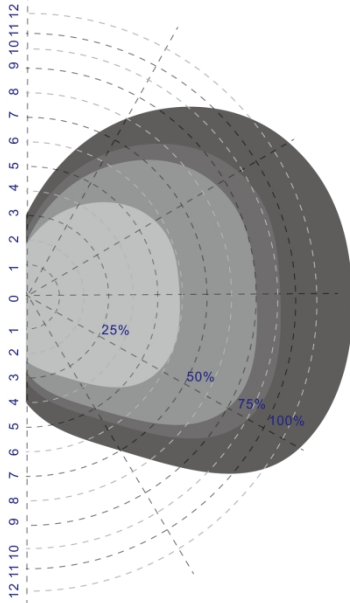
*Daylight thresholds are typical values that are measured on a sunny day without shadow and in an ambient light diffuse reflection status.

8. Radiation Pattern

Wall Mounting Height: 2m
Detection Area：
100%/75%/50%25%

Ceiling Mounting Height: 3m
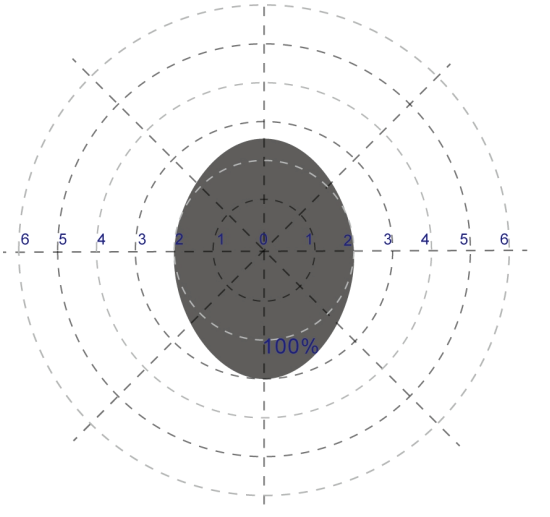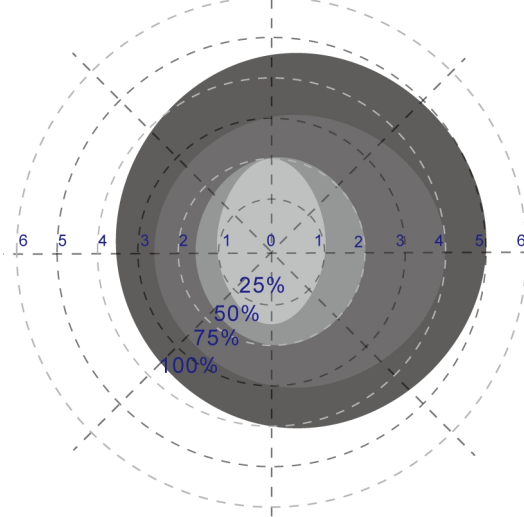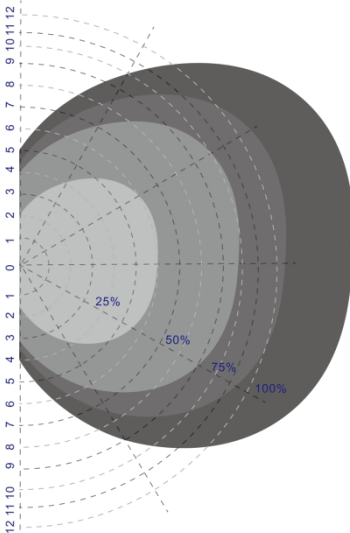Detection Area：
100%/75%/50%25%

Ceiling Mounting Height: 4m
Detection Area：
100%

Normal moving (Speed: 1m/s)

Normal moving (Speed: 1m/s)

Normal moving (Speed: 1m/s)

*When installed at 4m mounting height, sensor with 75%/50%/25% detection area is unable to detect motion signals.

Slow moving (Speed 0.3m/s)

Slow moving (Speed 0.3m/s)

Slow moving (Speed 0.3m/s)

*When installed at 4m mounting height, sensor with 75%/50%/ 25% detection area is unable to detect motion signals.

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.

(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.