

Microwave Induction switch & dimming detector

Model No.: EM

Motion detector/5V PWM Signal out/Daylight sensor

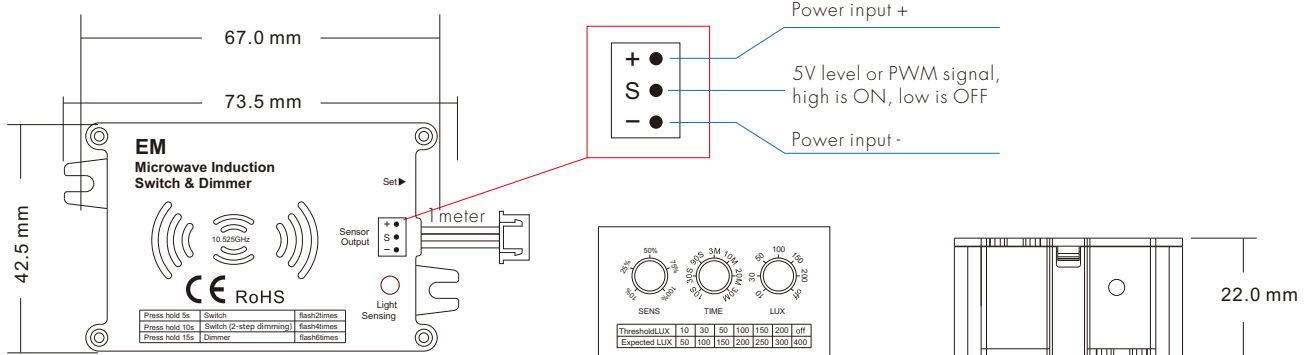
Features

- Active microwave motion detectors with HF system 10.525GHz, motion can be detected through plastic, glass and thin non-metal materials.
- Built-in motion sensor and daylight sensor.
- Powered by low voltage 5VDC, output 5V level or PWM signal.
- Detection area, time delay and daylight threshold can be set via knob potentiometer for each specific application.
- Wide detection area, range up to 20m in diameter.
- Support higher mounting height 15m Max.



FC CE RoHS EMC RED

Mechanical Structures and Installations



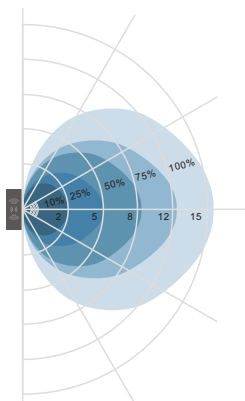
Technical Parameters

Sensor data			
Working voltage	5VDC	Hold time	10s/30s/90s/3min/10min/20min/30min
HF system	10.525GHz	Stand-by time	10s/30s/90s/3min/10min/20min/30min
Power consumption	< 0.5W(Standby) , <1W(Operation)	Daylight threshold	10lux/30lux/50lux/100lux/150lux/200lux/Disable
Detection zone	Max.(DxH) 20 x 15m	Daylight expected	50lux/100lux/150lux/200lux/250lux/300lux/400lux
Detection sensitivity	10%/25%/50%/75%/100%	Motion detection	0.5-3m/s
Mounting height	15m Max.	Detection angle	150° (wall installation), 360° (ceiling installation)

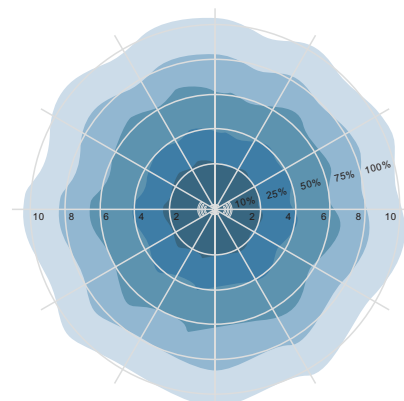
Induction type setting

- Press hold the SET key 5s: Set as switch type, the LED indicator flash 2 times.
- Press hold the SET key 10s: Set as 2-step dimming switch type, the LED indicator flash 4 times.
- Press hold the SET key 15s: Set as dimmer type, the LED indicator flash 6 times.

Microwave Sensor Detection Pattern



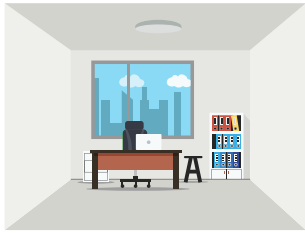
Wall mounting pattern(Unit:m)
Suggested installation height: 1-1.8m



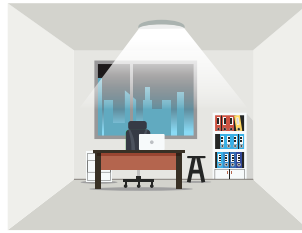
Ceiling mounting pattern(Unit:m)
Suggested installation height: 2.5-15m

Typical application 1: used as a switch

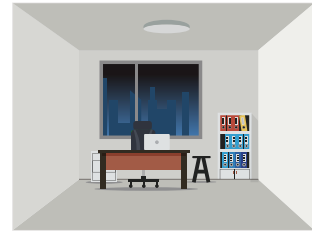
Turns on the light upon detection of motion, and turns off after a pre-selected hold time when there is no movement.



1. With sufficient ambient light, the sensor does not turn on the light.



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



3. After hold time, the light turns off if no motion detected.

Setting on this demonstration:

Detection area: 50% Hold time: 90S Daylight sensor: 50lux



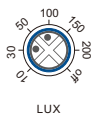
Detection area:

Detection area can be reduced by rotate knob to fit precisely each application.



Hold time:

Refers to the time period remains light on state after no motion detected.



Daylight sensor:

The sensor can be set to only allow the lamp to illuminate when below a defined ambient brightness threshold.

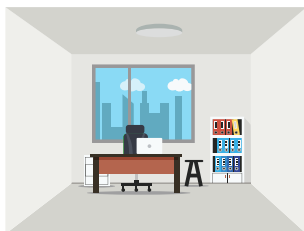
When set to off (Disable) mode, the daylight sensor will switch on the lamp when motion is detected regardless of ambient light level.

50lux: twilight; 30 lux: evening; 10 lux: darkness.

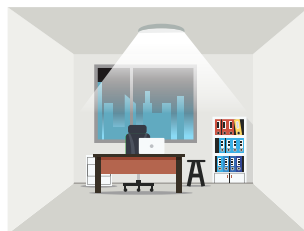
Note that daylight sensor is active only when lamp totally switches off, and the ambient lux level refers to internal light reaching the sensor.

Typical application 2: used as a switch with two-step dimming

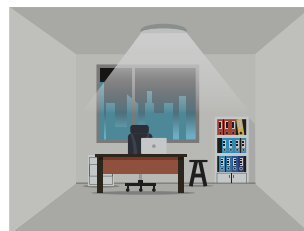
Turns on the light upon detection of motion, after a pre-selected hold time, dim to 20% brightness, and turns off after a pre-selected stand-by time when there is no movement.



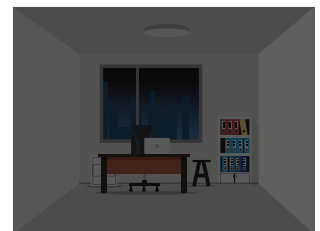
1. With sufficient ambient light, the sensor does not turn on the light.



2. With insufficient ambient light, the sensor turns on the light and dim to 100% brightness when motion is detected.



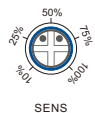
3. After elapse of hold time, the sensor dim to 20% brightness if no new motion detected.



4. After elapse of stand-by time, the sensor turns off the light if no motion detected.

Setting on this demonstration:

Detection area: 50% Hold time & Stand-by time: 90S Daylight sensor: 50lux



Detection area:

Detection area can be reduced by rotate knob to fit precisely each application.



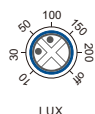
Hold time:

Refers to the time period remains light on and 100% brightness state after no motion is detected.

Stand-by time:

Refers to the time period remains light on and dim to 20% brightness state after elapse of hold time if no new motion is detected.

The stand-by time is same as the hold time.



Daylight sensor:

The sensor can be set to only allow the lamp to illuminate when below a defined ambient brightness threshold.

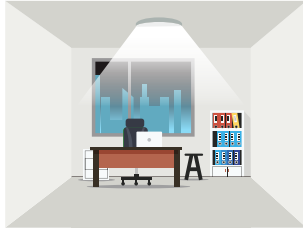
When set to off (Disable) mode, the daylight sensor will switch on the lamp when motion is detected regardless of ambient light level.

50lux: twilight; 30 lux: evening; 10 lux: darkness.

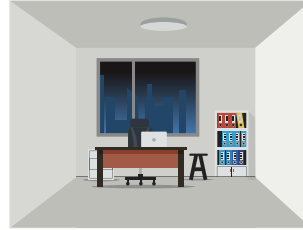
Note that daylight sensor is active only when lamp totally switches off, and the ambient lux level refers to internal light reaching the sensor.

Typical application 3: used as a dimmer

Turns on the light and dim up to expected brightness level upon detection of motion, and turns off after a pre-selected hold time when there is no movement.



1. The sensor turns on the light and dim up to expected brightness level when motion is detected.



2. After hold time, the light turns off if no motion detected.

Setting on this demonstration:

Detection area: 50% Hold time: 90S Daylight sensor: 150lux



Detection area:

Detection area can be reduced by rotate knob to fit precisely each application.



Hold time:

Refers to the time period remains light on state after no motion detected.



Daylight sensor:

The sensor can be set to allow the lamp to illuminate to expected brightness level.

If the detected brightness is less than the expected brightness, the output will dim up to full brightness(100%).

If the detected brightness is larger than the expected brightness, the output will dim down to min brightness(1%).

Note that daylight sensor is active only when lamp switches on, and the ambient lux level refers to internal light reaching the sensor.

Microwave Sensor User recommended settings

Scenarios	Settings	Detection distance	Hold time	Daylight sensor
Passage, staircase		4-6m	10s	Twilight(50lux) / Darkness(10lux)
Balcony, corridor		4-6m	10s	Twilight(50lux) / Darkness(10lux)
Cloakroom, storeroom		2-3m	90s	Evening(30lux)
Garage		2-3m	90s	Evening(30lux)
Kitchen		3-4m	90s	Evening(30lux)
Dinning room		3-4m	3min	Evening(30lux) / Twilight(50lux)
Toilet		2-3m	3min	Daytime(>50lux) / Evening(30lux)
Meeting room		2-3m	10min	Evening(30lux)
Indoor public access		4-6m	10min	Daytime(>50lux)
Underground public access		4-6m	10min	Daytime(>50lux)

Microwave Application Notice

- The sensor is designed for indoor use only.
The raining or wind blowing may trigger the microwave sensor even if without human motion when outdoor use.
- The sensor should be installed by a professional electrician. please turn off the power before installing, wiring and changing setting of the knob.
- The distance between any two sensors should be at least 3m to avoid interference each other.
- When the microwave sensor is installed in a metal lighting fixture or space with large reflector, for example a warehouse with metal roof, the microwave signal will be reflected and cause the lights permanent illuminated even if without motion signal. Please reduce the detection area to solve the problems.
- Make sure the sensor not close to or be blocked by high density materials, such as metal, glass, concrete walls etc.
The materials will reduce or block microwave signal and cause false trigger.
- The sensor which installed in the plastic and glass lampshade will reduce th sensitivity.
For every 3mm increase in thickness, the sensitivity will reduced by 20%.
- The light sensitivity threshold is in a sunny environment, no shadow and ambient light diffuse reflection.
Ambient lux level could be different in different environment, weather, climate, time-of-delay and season.
- Make sure there are no fans, DC motor, or other vibrating objects in installation area. The movement will trigger sensor as well.