

SPECIFICATION

Product Name: Microwave Motion Sensor

Model No.: MC613V D RC

Issue Date: June 24, 2022

CUSTOMER APPROVED

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



- Built-in microwave sensor and light sensor for automatic on/off and dimming.
- Working voltage 120/277V/347V
- Parameters can be adjusted through DIP switch and remote control.
- Suitable for more lamps with mini split head.
- Ambient threshold function can be used as a light learning function.
- The initial brightness of the lamps can be changed through DIM+, DIM- buttons.
- 4 kinds of quick settings (scene) are customized.
- 0-10v port can be connected to MS01 to achieve daylight harvesting function.
- 5 years warranty.

2. Parameter

Input	Rated Voltage	120/277V/347VAC 50/60Hz
	Stand-by Power	< 1W
	Surge Test	N--L: 1kV
Output	Working Mode	ON/OFF function, 0-10V DC dimming
	Type of Load	Inductive or Resistive Load
	Load Power	120V, 50/60Hz, 3.6A, ballast; 277V, 50/60Hz, 3.4A, ballast; 347V, 50/60Hz, 3.3A, ballast;
	Max. Surge Power	50A (50% Ipeak, twidth =500uS, 230V AC full load, cold start)
Dim Interface	0-10V Dimming	< 50mA (Non-constant source) 10%(0.5-1V) 20%(1.9-2.1V) 30%(2.9-3.1V) 40% (3.9-4.1V)
	Sensor Parameters	
	Operating Frequency	5.8 GHz ±75 MHz, ISM Band.
	Transmitting power	1mW Max.
	Hold time	DIP Switch :8S/30S/1min/5min/10min/15min/30min Remote Controller Setup : 5S/30S/1min/3min/5min/10min/20min/30min
	Stand-by DIM Level	DIP Switch :10%/20%/30%/40% Remote Controller Setup :10%/20%/30%/50%
	Stand-by Period	DIP Switch :0s/1min/3min/5min/10min/30min/+∞ Remote Controller Setup : 0S/10S/1min/3min/5min/10min/30min/+∞

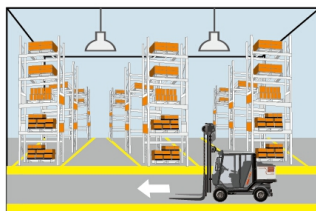
Sensor Parameters	Detection Area	DIP Switch :100%/75%/50%/25% Remote Controller Setup :100%/75%/50%/25%
	Daylight Sensor	DIP Switch :5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable Remote Controller Setup :5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable
	Detecting Radius	See note 2
	Mounting Height	3m Typical Value (6m Max)
	Detecting Angle	150°(wall mounting) 360°(ceiling mounting)
Operating Environment	Operating Temperature	-35°C...+70°C
	Storage Temperature	Temperature: -40°C...+80°C; Humidity: 85% (non-condensing)
Certificate Standards	Safety standards	UL60730
	Environmental Requirement	Compliant to RoHS
	Certificate	CE, RED, UL
Others	Wiring Method	Copper wire only (10-18AWG)
	IP Rating	IP20
	Protection Class	Class II
	Installation	Built-in installation (indoor use only)
	Dimension	Inch: 5.04 (mm: 128)
	Package	Bubble bag +Clapboard+ Carton(K=A)
	Net Weight	220g
Lifetime	5 years warranty @Ta 230V full load	

Note

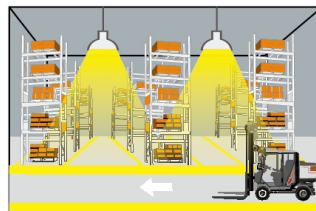
1. "N/A" means not available.
2. Detection area is effected on volume of motion object and motion speed. The detection area is tested by a 165cm height person and walking speed is 0.3m/s.

3. Function

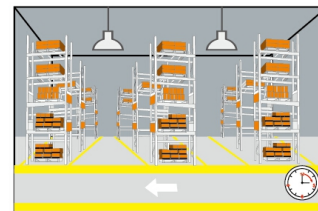
1) ON/OFF function (stand-by period be set to "0"s)



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.

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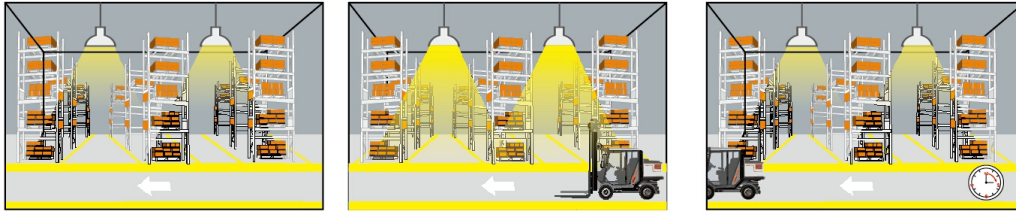
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2) 2-step dimming function (stand-by period be set to “+∞”)

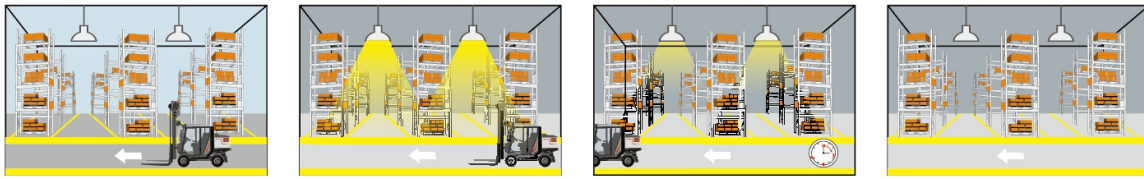


1 If there is no motion detected, the light will be remained at a low light level all the time.

2 When motion is detected, the sensor will switch on the light to 100% brightness

3 After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

3) 3-step dimming function (stand-by period be set to “10s/1min/3min/5min/10min/30min”)



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

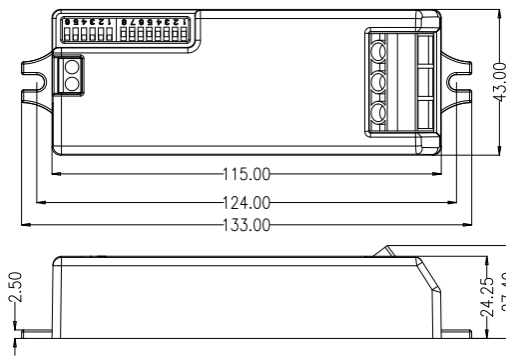
2 With insufficient ambient light, the sensor switches on the light when motion is detected.

3 After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.

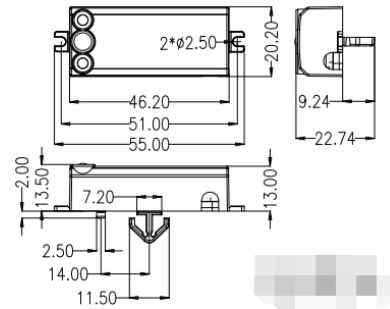
4 After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

4. Dimension (mm)

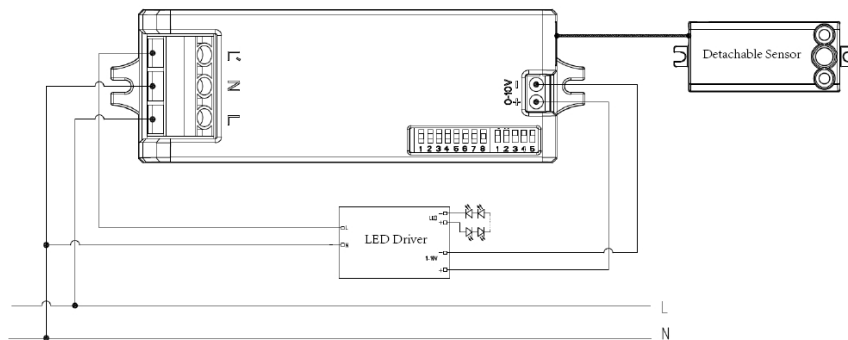
Main part



Detachable sensor head:



5. Wiring



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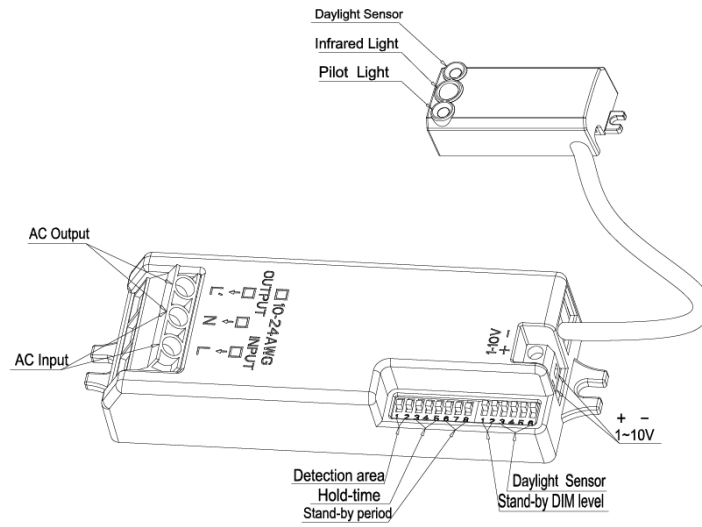
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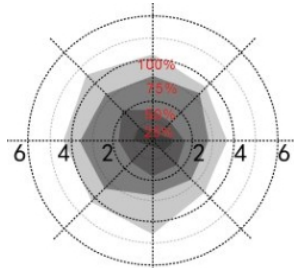
6. Structure



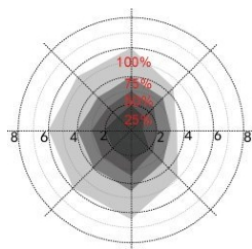
7. Detection Pattern

Ceiling mounting

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

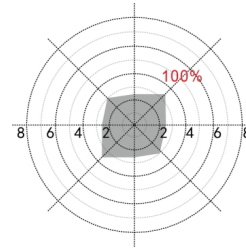


Normal moving (Speed:1m/s)

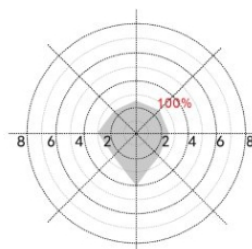


Slow moving (Speed 0.3m/s)

Ceiling mounted height: 6m
Sensitivity: 100%



Normal moving (Speed:1m/s)



Slow moving (Speed 0.3m/s)

*Only 100% detection sensitivity is workable when installed at 6m mounting height. able to detect motion signal.

8. Remote Control

MH12		
Remote Control Settings	Button	Function
	● Detection area	Short press to set detection area :25% / 50% / 75% / 100%, long press 3s to transmit selected value.
	● Send	Short press to transmit all selected value on remote screen.
	● Stand-by Period	Short press to set standby period 0S / 10S / 1min / 3min / 5min / 10min / 30min / +∞ Long press 3s to transmit selected value
	● Stand-by DIM Level	Short press to set stand-by DIM Level 10% / 20% / 30% / 50%. Long press 3s to transmit selected value
	● Hold Time	Short press to set hold time 5S / 30S / 1min / 3min / 5min / 10min / 20min / 30min Long press 3s to transmit selected value
	● Auto Mode	Short press to set working mode: MD=Motion+daylight threshold; MP=Motion +Daylight priority (daylight switch) ; P= Daylight priority Long press 3s to transmit selected mode Note: MP or P is not available for all models, please follow spec. sheet of motion sensor.
	● Daylight Threshold	Short press to set Daylight threshold 5Lux / 15Lux / 30Lux / 50Lux / 100Lux / 150Lux / Disable. Long press 3s to transmit selected value When set Daylight threshold to Disable, sensor will switch on light when detect motion regardless of ambient brightness level.
	● Motion Sensor	Short press to quit from constant on/off mode, sensor start to work (the previous setting stays in validity)
	● Dim+/Dim-	Short press "Dim+/Dim-" for dimming, to add or subtract 2% per press Note: In normal "daylight" mode, set the maximum brightness via Dim+/Dim-, the maximum brightness value should be higher than the stand-by dimming level.
	● Reset	Short press to return to factory default setting.
	● S	N/A
	● H/L	N/A
	● 2	2nd optional quick setting, short press to show the setting configuration, long press 3s to save this configuration. Press "Send" to transmit selected quick setting
	● 1	1st optional quick setting, short press to show the setting configuration, long press 3s to save this configuration. Press "Send" to transmit selected quick setting
	● ON/OFF	Press this button to enter the "constant on/off" mode, this mode without memory function. Press "Reset" or "Motion Sensor" to exit to sensor function mode.

Detection Area	Hold Time	Daylight sensor	Stand-by period	Stand-by dim level
100%	8s	Disable	0s	10%

9. DIP Switch Setting

Detection Area

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

Hold Time

	3	4	5	
I	ON	ON	ON	8S
II	ON	-	ON	30s
III	-	ON	ON	1min
IV	ON	-	-	5min
V	-	ON	-	10min
VI	-	-	ON	15min
VII	-	-	-	30min

Stand-by Period

	6	7	8	
I	ON	ON	ON	0s
II	ON	-	ON	1min
III	-	ON	ON	3min
IV	ON	-	-	5min
V	-	ON	-	10min
VI	-	-	ON	30min
VII	-	-	-	+∞

Stand-by DIM Level

	S1	S2	Stand-by DIM Level
I	ON	ON	10%
II	ON	-	20%
III	-	ON	30%
IV	-	-	40%

Daylight Sensor

S3	S4	S5	S6	Daylight sensor
ON	ON	ON	ON	5Lux
-	ON	ON	ON	15Lux
ON	-	ON	ON	30Lux
-	-	ON	ON	50lux
ON	ON	-	ON	100lux
ON	ON	ON	-	150lux
-	-	-	-	Disable

10. Initialization

1) On/Off function /3-step dimming function:

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns off the light. During the initialization, the sensor is not able to detect movement.

2) 2-step dimming function:

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it dims the light to a low light level (set by stand-by dim level). During the initialization, the sensor is not able to detect movement.

11. Factory settings

Detection area: 100%, Hold time: 8s, Stand-by Period: 0s, Stand-by dim level: 10%, Daylight Sensor: Disable

12. 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 3 meters. Keep sensor away from switches, routers and other wireless devices to avoid radio interference, more than 2 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 25%. If 25% 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) The sensor is installed in the plastic, the glass lampshade will reduce the sensitivity of the sensor. For every 3mm increase in thickness, the sensitivity will be reduced by 20%.
- (12) Do not place the sensor close to high-density objects such as metal, glass, mixed-use walls, etc. The sensor may be triggered by mistake.
- (13) The parameters of the sensor may be reconfigured in different installation environments. Please refer to the above instructions or contact the manufacturer.